Draft Program
Environmental Impact Report

Fourth Educational Center Project

State Clearinghouse No. 2005101054

Lead Agency

CLOVIS
UNIFIED
SCHOOL DISTRICT

April 2008

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Lead Agency:

Clovis Unified School District
1450 Herndon Avenue
Clovis, CA 93611
(559) 327-9000

Environmental Consultant:

Paoli & Odell, Inc.
School Facility, Environmental and City Planners
925 N Street, Suite 150
Fresno, CA 93721
(559) 233-7260

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Definitions

The following definitions apply to terms used throughout this Draft Environmental Impact Report unless a term is otherwise defined in a particular chapter. The definitions are based on those in State CEQA Guidelines Sections 15350 – 15387.

CEQA means the California Environmental Quality Act, California Public Resources Code Sections 21000 et. seq.

Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

(a) The individual effects may be changes resulting from a single project or a number of separate projects.

(b) The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over time.

Decision-making body means any person or group of people within a public agency permitted by law to approve or disapprove the project at issue. The Board of Trustees of the Clovis Unified School District is the decision-making body for the Fourth Educational Center Project.

Effects and ***impacts*** as used in this EIR are synonymous.

(a) Effects include:

(1) Direct or primary effects which are caused by the project and occur at the same time and place.

(2) Indirect or secondary effects which are caused by the project and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems.

(b) Effects analyzed under CEQA must be related to a physical change.

Environment means the physical conditions which exist within the area that will be affected by a proposed project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. The area involved shall be the area in which significant effects would occur either directly or indirectly because of the project. The "environment" includes both natural and man-made conditions.

EIR or ***Environmental Impact Report*** means a detailed statement prepared under CEQA describing and analyzing the significant environmental effects of a project and discussing ways to mitigate or avoid the effects. The term "EIR" may mean either a draft or a final EIR depending on the context.

Feasible means capable of being accomplished in a successful manner within a reasonable period, taking into account economic, environmental, legal, social, and technological factors.

Lead Agency means the public agency that has the principal responsibility for carrying out or approving the project. The Clovis Unified School District is the Lead Agency for the Fourth Educational Center Project.

Mitigation includes:

(a) Avoiding the impact altogether by not taking a certain action or parts of an action;

(b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation;

(c) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment;

(d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;

(e) Compensating for the impact by replacing or providing substitute resources or environments.

Project means the whole of an action that has a potential for resulting in either a direct physical change in the environment, or a reasonable foreseeable indirect physical change in the environment. The Fourth Educational Center Project is described in Chapter 2, Project Description.

Project site means the 160.46-acre site selected for the project and located north and south of the Clinton Avenue alignment between N. Highland and N. Leonard Avenues.

Responsible Agency means a public agency that proposes to carryout or approve a project, for which a lead agency is preparing or has prepared an EIR or negative declaration. For the purposes of CEQA, the term "responsible agency" includes all public agencies other than the lead agency that have discretionary approval power over the project. Responsible Agencies for the Fourth Educational Center Project are identified in Chapter 2, Project Description.

Significant effect 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. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.

State CEQA Guidelines means the Guidelines for Implementation of the California Environmental Quality Act, California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000 – 15387 and Appendices A – K.

Trustee Agency means a state agency having jurisdiction by law over natural resources affected by a project that are held in trust for the people of the State of California. Trustee agencies for the Fourth Educational Center Project are identified in Chapter 2, Project Description.

Introduction

Purpose for Program Environmental Impact Report

This Draft Program Environmental Impact Report (Draft EIR) presents a comprehensive assessment of the potential environmental impacts of the proposed Fourth Educational Center Project (project). The Clovis Unified School District is proposing to undertake the project, which includes acquisition of a site, and the construction and operation of a high school, intermediate school, elementary school and related athletic/recreational facilities on 160 acres in Fresno County, east of the City of Fresno.

The Clovis Unified School District (District), as the Lead Agency for the project, has prepared this Draft EIR following the requirements of the California Environmental Quality Act (CEQA) and the Guidelines for Implementation of the California Environmental Quality Act (State CEQA Guidelines or CEQA Guidelines).

The fundamental role of an EIR in CEQA is described in State CEQA Guidelines Section 15121:

> (a) An EIR is an informational document which will inform public agency decision-makers and the public generally of the significant environmental effect[s] of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR along with other information which may be presented to the agency.
>
> (b) While the information in the EIR does not control the agency's ultimate discretion on the project, the agency must respond to each significant effect identified in the EIR by making findings under Section 15091 and if necessary by making a statement of overriding consideration under Section 15093.
>
> (c) The information in an EIR may constitute substantial evidence in the record to support the agency's action on the project if its decision is later challenged in court.

Program EIR

Pursuant to CEQA Guidelines Section 15168, a Program EIR is an EIR which may be prepared on a series of actions that may be characterized as one large project. The actions to be taken on this project include site acquisition, preparation of a detailed site plan for the educational center, annexation of the project site to the City of Fresno, and ultimately, the construction and operation of the facilities.

Although acquisition of the project site is planned to occur in the near future, construction of the project would not commence for at least five to seven years, depending on enrollment

growth and funding availability. The duration of construction is typically about two years; therefore, the facilities would not be completed and operational for at least seven to nine years.

No site plan exists for the proposed educational center. Since project construction will not occur for at least five to seven years, site plan preparation would be premature at this time. Detailed site planning for school facilities normally does not occur until educational specifications for the facility are developed. This involves defining the desired education program for the project and translating the program into a design of the facilities and improvements on the site to best facilitate the desired educational program.

Independent Judgment

As required by Public Resources Code Section 21082.1, the District has reviewed and analyzed this Draft EIR and has determined that it reflects the District's independent judgment.

Scope and Content of Environmental Impact Report

Introduction

The EIR for the Fourth Educational Center Project will be comprised of two documents: this Draft EIR and a Final EIR. The scope and contents for the Draft EIR are described below. The Final EIR will be completed after the public review period for the Draft EIR. It will include the Draft EIR (as a separate document); comments and recommendations received on the Draft EIR during the public review period; a list of persons, organizations, and public agencies commenting on the Draft EIR; the responses of the District to significant environmental issues identified in the review process; and any other information added by the District.

Draft EIR

This Draft EIR is divided into 24 chapters. Chapter 1 presents a summary of the findings of the Draft EIR. Chapter 2 provides a description of the project and its location. Chapters 3 through 20 present the existing setting, potential impacts, and mitigation measures for the project. Chapter 21 discusses the potential for the project to induce growth in its vicinity. Chapter 22 discusses cumulative impacts. Chapter 23 summarizes the significant irreversible environmental changes that may result from the project, and Chapter 24 addresses alternatives to the project.

The Draft EIR includes several appendices providing background information for resources and conditions addressed in the EIR and listing the EIR authors. The appendices are listed in the Table of Contents.

Site Selection Study

The District identified the site evaluated in this EIR as the preferred site for the Fourth Education Center based on the *Fourth Educational Center Site Selection Study (revised)* prepared by Paoli & Odell, Inc. and Blair, Church & Flynn Consulting Engineers. The report, which was completed in December 2006, evaluated possible sites for the project based on District goals, objectives, and criteria. The report is presented in Appendix I-1 of this EIR.

EIR Authors

The environmental consulting firms that prepared this EIR are listed in Appendix I-2.

Chapter 1

Summary

Introduction

This chapter presents a summary description of the proposed Clovis Unified Fourth Educational Center Project and its environmental consequences, including the following:

- Each significant effect of the project with proposed mitigation measures and alternatives that would reduce or avoid that effect;
- Areas of controversy known to the lead agency including issues raised by agencies and the public; and
- Issues to be resolved including the choice among alternatives and whether or how to mitigate the significant effects.

Summary Project Description

Project Location and Description

The Clovis Unified School District (District) is proposing to undertake the Clovis Unified Fourth Educational Center project, which includes acquisition of a site, and the construction and operation of a high school, intermediate school, elementary school and related athletic/recreational facilities.

The 160.46-acre project site is located between N. Leonard and N. Highland Avenues on the north and south sides of the E. Clinton Avenue alignment, Fresno County, California (see Figures 2-1, 2-2, and 2-3). The site is located within Section 25, Township 13 South, Range 21 East, Mount Diablo Base and Meridian, as shown on the *Clovis, Calif.* 7.5 Minute Series USGS Quadrangle (1964). The Fresno County Assessor's Parcel Numbers for the site are 310-310-14T, 310-310-39, 310-052-10T, and 310-320-01S through 08S.

The project consists of the acquisition of 160.46 gross acres by the District and the development and operation of an educational center on the site. The educational center will include a high school (2,900-student capacity), intermediate school (1,400-student capacity), elementary school (700-student capacity) and related athletic/recreational facilities. The project will also include an 8,000-seat football stadium.

The buildings to be included on the site will include classrooms, administrative offices, food service facilities, library/media facilities, gymnasiums, locker/shower facilities, shop buildings and a maintenance area. The project could potentially include a

performing arts center. Adequate off-street parking for students, faculty and visitors will be provided.

In addition, to the football stadium, the outdoor recreational/athletic facilities on the site may include baseball and softball stadiums and fields, , soccer fields, basketball courts, tennis courts and a swimming pool complex. All of these facilities may be lighted.

The project includes various street, water, sewer, and storm drainage improvements necessary to serve the site and eventual annexation of the site to the City of Fresno.

Construction of the facilities is expected to begin in approximately 5-7 years. The duration of construction is typically about 2 years; therefore, the facilities are anticipated to be completed and operational in approximately 7-9 years. The actual timing of construction will be dependent upon enrollment growth and funding availability.

Lead Agency

The Clovis Unified School District is the lead agency for Fourth Educational Center Project. The lead agency is the public agency that has the principal responsibility for carrying out or approving a project.

Responsible Agencies/Required Permits and Approvals

Responsible agencies and approvals required for the project are described in Chapter 2.

Significant Impacts of the Project

Impacts Presented

Listed in this section are the unavoidable and avoidable significant environmental effects of the proposed project. Impacts that were determined to be less than significant without mitigation are not listed but are discussed in the chapters of this EIR addressing specific resources and conditions.

Unavoidable Significant Environmental Impacts

The following significant environmental impacts cannot be avoided if the proposed project is implemented:

3.2 **Impact:** The project will conflict with existing surrounding agricultural land uses and could conflict with nearby rural residential uses.

Mitigation Measures: The District shall implement the mitigation measures recommended in subsequent chapters of this EIR for traffic, noise, air quality, and aesthetics.

5.1 **Impact:** The project will convert approximately 11 acres of Prime Farmland and 9 acres of Farmland of Statewide Importance to non-agricultural use.

Mitigation Measures: There are no mitigation measures that would prevent the loss of agricultural land within the project site if the project is implemented.

5.2 **Impact:** The project will conflict with existing agricultural operations, agricultural zoning and Williamson Act Contracts in its vicinity.

Existing Regulations

The following Fresno County Department of Agriculture conditions apply to the application of pesticides adjacent to school grounds (including the proposed project): (1) no pesticide application(s) are to occur within 1/8 mile of a school while school is in session or while the school grounds are occupied. (2) No pesticide with a worker safety re-entry interval greater than 48 hours shall be applied within 1/8 mile of a school during regular, summer, or night school sessions. In addition to the Department of Agriculture conditions, pesticide applicators must comply with any conditions/restrictions on the pesticide label that relate to applications(s) adjacent to school grounds.

Mitigation Measure:

5.2 Currently, all District campuses are closed, except for high school seniors in good standing. The District shall continue to operate closed campuses unless the Board determines that modifications to this practice will not cause significant off-campus problems.

8.1 **Impact:** The project will alter the existing rural and agricultural visual environment.

Discussion: Although the project site will be professionally designed and landscaped and will contain substantial open space, the alteration of the visual environment from rural to a large educational facility cannot be mitigated.

10.3 **Impact:** Long-term emissions of ozone precursor pollutants will result from project operations.

Mitigation Measures:

10.3(a) Trees shall be selected and located to protect the buildings from energy consuming environmental conditions and to shade paved areas. Trees shall be deciduous to allow shading of structures during the summer months and increased solar heating during the winter months. Structural soil should be used under paved areas to improve tree growth: for Structural Soil see http://www.hort.cornell.edu/uhl/outreach/csc and for Tree Selection see http://www.ufei.org.

10.3(b) The District shall work with the City of Fresno in designing the project site to facilitate safe and convenient pedestrian and bicycle connections to adjacent neighborhoods.

10.3(c) Energy-conserving features shall be included in the project sufficient to exceed Title 24 requirements by 20 percent. Energy conservation measures include both energy conservation through design and operational energy conservation. Examples include (but are not limited to): Increased energy

efficiency (above California Title 24 Requirements) (see http://www.energy.ca.gov/title24/); energy efficient windows (double pane and/or Low-E); high-albedo (reflecting) roofing material; energy efficient lighting, appliances, heating and cooling systems; programmable thermostat(s) for all heating and cooling systems; awnings or other shading mechanism for windows; walkway overhangs; and installation of ozone-destruction catalysts on air conditioning systems (when available).

10.3(d) Exits to adjoining streets should be designed to reduce time to re-enter traffic from the project site.

10.3(e) If public transit is provided on roadways located adjacent to the project site, transit stop improvements shall be incorporated on streets adjacent to the site to promote the use of transit to and from the project site during normal school hours, as well as during special events held at the campus. Examples of such improvements include providing information for posting of public transit schedules, benches, shelters, and lighting.

10.3(f) To reduce neighborhood vehicle travel to nearby park facilities, general-use recreational facilities at the project site shall be made available for public use during the daytime hours when school is not in session (i.e., weekends) , subject to District approval.

Discussion: A majority of the project-generated emissions would be associated with the operation of mobile sources. Although measures to reduce mobile-source emissions, such as promotion of transit use to and from the site, have been included, emissions from mobile sources (including school buses) are regulated by the ARB. Measures incorporated to promote pedestrian access and transit use would reduce mobile-source emissions by approximately 1 percent (SMAQMD 2007). Area source emissions, such as the use of natural gas appliances and landscape maintenance activities would constitute less than approximately 5 percent of the total project-generated emissions. Various mitigation measures have, however, been incorporated to reduce onsite operational emissions from area sources. Such measures would reduce total operational emissions from area sources by approximately 5 percent. However, because project-generated operational emissions would be primarily associated with on-road mobile sources, mitigated emissions would still be anticipated to exceed SJVAPCD-recommended significance thresholds of 10 tons/year. As a result, this impact is considered significant and unavoidable.

10.5 **Impact:** The project will contribute cumulatively to regional and local air quality impacts and greenhouse gas emissions.

Mitigation Measure: With implementation of the Mitigation Measures listed under 10.1, 10.2 and 10.3, the project's contribution to cumulative air quality impacts and greenhouse gas emissions would be lessened.

Discussion: Even with mitigation, operational emissions of ROG would still be anticipated to exceed the SJVAPCD's recommended significance threshold of 10 tons/year. Although localized concentrations of pollutants would not be anticipated to exceed applicable thresholds, with implementation of proposed mitigation measures, short-term construction-generated emission would still contribute, on a cumulative basis, to regional ambient concentrations of TACs, particularly diesel-PM. Given the regions existing and projected nonattainment conditions, this impact would be considered significant and unavoidable. With respect to greenhouse gas emissions, since there are currently no thresholds established under federal, state or local laws, this EIR takes a conservative approach and considers the cumulative contribution of the project to greenhouse gas emissions as a significant unavoidable impact.

11.2 **Impact:** The project will expose noise sensitive uses to on site stationary source noise.

Mitigation Measures:

11.2(a) Mechanical building equipment shall be shielded from public exposure by locating such equipment on rooftops, in equipment buildings or by the use of other methods of shielding.

11.2(b) When a site plan is prepared for the educational center, the stadium, other athletic facilities and parking areas shall be designed and oriented to minimize noise levels in relation to any existing or planned noise sensitive land uses in the area. Possible methods include (1) location on the site to maximize the distance from noise sensitive uses (within feasible and appropriate site design constraints in relation to other facilities on the site); (2) the use of intervening building or other structures between noise-sensitive receptors and onsite noise sources; and (3) for the stadium, consideration of design features including but not limited to solid berm and/or concrete seating, concrete walls, lowering of the field surface, and a state of the art PA system.

11.2(c) As part of the specific planning process for the Southeast Growth Area, the City of Fresno should plan and design land uses in the vicinity of the site in recognition of the features and characteristics of the educational center to minimize any potential noise impacts.

11.2(d) The hours of operation for facility maintenance activities that could be deemed to impact nearby land uses shall be limited to between 7:00 a.m. and 9:00 p.m., Monday through Friday, and between the hours of 7:00 a.m. and 5:00 p.m., Saturday and Sunday, excepting emergency conditions.

Discussion: Most on-site facilities should be able to be designed and mitigated such that any noise impacts are less than significant. However, it is possible that noise impacts from the football stadium or other facilities may not be able to be completely mitigated at all adjacent locations. The stadium would potentially subject nearby residences to high noise levels on a limited basis during late summer and fall evenings and limited occasions such as graduation and large

track meets. If this were to occur, the noise impact would be considered significant and unavoidable.

Avoidable Significant Environmental Impacts

The following significant environmental impacts can be avoided or reduced to a level of insignificance if the mitigation measures listed with each impact are incorporated into the project:

3.1 **Impact:** The project is inconsistent with the Fresno County General Plan agricultural land use designation for the project site.

Mitigation Measures:

3.1(a) The City of Fresno should incorporate the project in the specific plan for the Southeast Growth Area.

3.1(b) At such time as annexation is feasible, the District shall request that the City of Fresno annex the project site. "Feasible" for the purposes of this mitigation measure shall mean that the annexation will comply with applicable LAFCo policies and the City has complied with applicable requirements of the January 6, 2003 Memorandum of Understanding with the County of Fresno, including adoption of the specific plan.

6.1 **Impact:** Project construction may result in direct mortality of special status raptors, Loggerhead Shrike, non-listed raptors, and various other bird species.

Mitigation Measures:

6.1(a) A pre-construction survey will be conducted by a qualified biologist for nesting raptors within 30 days prior to the on-set of construction or tree removal, if tree removal is to occur during the nesting season (February through August) or construction activity occurs within 250 feet of onsite trees during the nesting season.

6.1(b) If pre-construction surveys undertaken during the breeding season (February through August) locate active nests within or near construction zones, these nests, and an appropriate buffer around them (as determined by a qualified biologist) would remain off-limits to construction until the breeding season is over. Construction setbacks of 250 feet (or more) from occupied nests could be required.

6.2 **Impact:** Project construction may result in direct mortality of Western Burrowing Owls.

Mitigation Measures:

6.2(a) A pre-construction survey will be conducted by a qualified biologist for burrowing owls within 30 days prior to the on-set of construction. This survey will be conducted according to methods described in the Staff Report on

Burrowing Owl Mitigation (CDFG 1995), which is standard for all burrowing owl surveys in California.

6.2(b) If pre-construction surveys undertaken during the breeding season (February through July) locate active nest burrows within or near construction zones, these nests, and an appropriate buffer around them (as determined by a qualified biologist) would remain off-limits to construction until the breeding season is over. Setbacks from occupied nest burrows of 100 meters or more could be required where construction would also result in the loss of foraging habitat.

6.2(c) During the non-breeding season (August through January), resident burrowing owls may be relocated to alternative habitat. The relocation of resident owls must be according to a relocation plan prepared by a qualified biologist. Passive relocation would be the preferred method of relocation. This plan would provide for the owls relocation to nearby lands possessing available nesting and foraging habitat. Relocation only applies to burrowing owls, which may be resident in their nest burrows after the breeding season is over.

6.3 **Impact:** Project construction may result in direct mortality of California Horned Lark.

Mitigation Measures:

6.3(a) If construction is to occur during the nesting season (March through July), a pre-construction survey will be conducted by a qualified biologist for nesting horned larks within 30 days prior to the on-set of construction. The area of this pre-construction survey will include all areas within 250 feet of construction activity.

6.3(b) If pre-construction surveys undertaken during the breeding season locate active nests within or near construction zones, these nests, and an appropriate buffer around them (as determined by a qualified biologist) will remain off-limits to construction until the breeding season is over. Construction setbacks of 250 feet (or more) from occupied nests could be required.

6.4 **Impact:** Project construction may result in direct mortality of various bat species.

Mitigation Measures:

6.4(a) A pre-construction survey will be conducted by a qualified biologist for maternal bat roosts within 30 days prior to the on-set of construction, if construction is to occur during the maternal roosting season (March through August) and would occur within 250 feet of buildings potentially used as maternal roosting sites for bats.

6.4(b) If pre-construction surveys undertaken during the breeding season (March through August) locate active maternal roosts within or near construction zones, these roosts, and an appropriate buffer around them (as determined by a qualified biologist) would remain off-limits to construction until the breeding season is

over. Construction setbacks of 250 feet (or more) from occupied roosts could be required.

7.1 **Impact:** Project construction activities could result in the loss of subsurface cultural or paleontological resources from the project site

Mitigation Measures:

7.1(a) All contractors and subcontractors for the project shall be informed, in writing, of the possibility that cultural or paleontological resources may be discovered during project activities. If any cultural or paleontological materials are uncovered during project activities, work in the area or any area reasonably suspected to overlie adjacent remains shall halt until a professional evaluation and/or data recovery excavation can be planned and implemented. Appropriate measures to protect remains from accidents, looting, and vandalism shall be implemented immediately.

7.1(b) After they have been professionally recorded in their place of discovery, archaeological or paleontological materials shall be transferred to an appropriate regional repository for preservation, research, and/or use in interpretive exhibits.

7.1(c) If human remains are discovered, the Fresno County Coroner must be notified immediately. The Coroner has two working days to examine the remains and 24 hours to notify the Native American Heritage Commission (NAHC) if the remains are Native American (Health and Safety Code Section 7050.5). Once the NAHC is notified, the procedures set forth in CEQA Guidelines Section 15064.5(d) and Public Resources Code Section 5097.98 shall be followed.

8.2 **Impact:** The project will create a potential for litter and graffiti.

Mitigation Measure:

8.2(a) The District shall properly clean and maintain the school facilities, and shall support, encourage, and facilitate programs that encourage or require students keep the campus and surrounding environs clean.

8.2(b) Currently, all District campuses are closed, except for high school seniors in good standing. The District shall continue to operate closed campuses unless the Board determines that modifications to this practice will not cause significant off-campus problems.

8.2(c) The District shall provide security personnel to patrol the site and adjacent parking areas before, during and after the football games to discourage littering, graffiti writing and other undesirable activities.

8.3 **Impact:** The project will increase light and glare in the project vicinity.

Mitigation Measure:

8.3(a) Stadium field lighting shall be designed in accordance with the Illuminating Engineering Society's Recommended Practice for Sports and Recreational Area Lighting, in effect at the time of design.

8.3(b) Stadium field lighting, recreation facility lighting and security lighting for the buildings and parking areas shall be designed and oriented to minimize any impacts on adjacent property. Light spill resulting from any project lighting shall not exceed 1.5 footcandles at the property line.

8.3(c) All parking area lighting shall be full cut-off type fixtures. A full cut-off type fixture is a luminaire or light 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.

8.3(d) 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 be shielded to prevent direct glare and/or light trespass. The lighting shall also be, as much as physically possible, contained to the target area.

8.3(e) Exterior building lighting for building or security or aesthetics shall be full cut-off or a shielded type designed to minimize any upward distribution of light.

9.1 **Impact:** The project will cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system.

Mitigation Measure:

9.1 The project shall be required to perform a project-specific traffic impact study prior to submitting improvement plans for each phase of development, including the proposed stadium, in accordance with City of Fresno and County of Fresno requirements in place at that time. The City of Fresno currently requires any project expected to generate 100 or more peak-hour trips to perform a traffic impact study. The County of Fresno currently requires a traffic impact study for all intersections at which a project will generate 10 or more peak-hour trips or 100 or more daily trips. In addition, Caltrans may require analysis of state facilities. CUSD shall consult with the City of Fresno, County of Fresno, City of Clovis, and Caltrans prior to any new construction project to determine the requirements for a traffic impact study. The project shall be required to mitigate traffic impacts to the level of service and queuing requirements of the affected agencies current at the time the traffic study is performed. The future traffic impact studies shall not be based on the trip generation data or traffic counts presented herein, but shall be based on the best and most recent data available at the time the study is performed.

9.2 **Impact:** The project may result in localized traffic, parking, safety and emergency access issues related to site driveways, loading and unloading areas, parking lot locations, internal circulation and stadium use.

Mitigation Measure:

9.2 As part of the future site planning process for the project, a traffic and parking analysis shall be prepared that (1) evaluates and addresses potential traffic congestion where driveways intersect with adjoining public streets; (2)

ensures that adequate parking is provided for students, faculty, staff, visitors, and athletic facilities, in accordance with accepted standards and practices for school facilities existing at the time of site plan preparation; (3) provides for separate off-street facilities for student drop-offs by parents and bus loading and unloading; and (4) ensures that adequate emergency access is provided to the project in accordance with local fire and law enforcement requirements. The above analysis shall be prepared in coordination with City of Fresno and County of Fresno planning and traffic engineering staffs, and City and County law enforcement and fire departments.

10.1 **Impact:** Short-term emissions of airborne particulate matter will result from project construction activity.

Mitigation Measures:

10.1(a) Demolition and construction activities shall comply with all applicable SJVAPCD Regulation VIII for the control of fugitive dust emissions. Demolition activities would also be required to comply with SJVAPCD Rule 4002 to identify the presence of asbestos-containing building materials to be removed prior to demolition. In accordance with SJVAPCD Regulation VIII, a Dust Control Plan shall be prepared and submitted to the Air Pollution Control Officer (APCO) prior to the start of construction. Written notification to the APCO shall also be provided within 10 days prior to the commencement of earthmoving activities. The Dust Control Plan shall describe all fugitive dust control measures to be implemented before, during, and after any dust generating activity. SJVAPCD-recommended dust control measures include (but are not necessarily limited to) stabilization of all disturbed areas and unpaved construction roads; covering and wetting of transported materials; removal of accumulated dirt and trackout from adjacent streets; suspension of grading and excavation activities during periods of high winds; and limitations on visible dust emissions and the maximum daily area of ground disturbance.

10.2 **Impact:** Short-term emissions of ozone precursor pollutants and diesel-exhaust particulates will result from project construction activity.

Mitigation Measures: The following SJVAPCD-recommended mitigation measures shall be implemented:

10.2(a) In accordance with SJVAPCD Indirect Source Review Rule (Rule 9510), exhaust emissions for construction equipment greater than fifty (50) horsepower used or associated with the development project shall be reduced by the following amounts from the statewide average as estimated by the ARB: (a) 20 percent of the total NOx emissions, and (b) 45 percent of the total PM_{10} exhaust emissions. For example, construction emissions may be reduced by using less-polluting construction equipment, which can be achieved by utilizing add-on controls, or by use of cleaner fuels (i.e., biodiesel, emulsified diesel), ARB-certified alternative fueled engines, or use of construction equipment that have engines that meet the current off-road engine emission standard (as certified by the ARB). Use of multiple technologies/emission reduction strategies may be required to achieve

required emissions reductions. Additional information pertaining to ARB-certified emission reduction technologies can be obtained by contacting the SJVAPCD at (559) 230-5820 or the ARB's website at: http://www.arb.ca.gov/msprog/offroad/ cert/cert.php;

10.2(b) Prior to starting construction on the project, the District shall work with the SJVAPCD institute measures to reduce NOx emissions such that the project falls within the SJVAPCD's significance threshold of 10 tons/year. These measures may include but are not limited to replacing fossil-fueled equipment with electrically driven equivalents; limiting the operational hours of heavy duty equipment and/or the amount of equipment in use at any one time; limiting the maximum daily area of ground disturbance; curtailment of construction activity during periods of high ambient pollutant concentration; and minimizing equipment idling time.

10.4 **Impact:** The project could result in local mobile-source CO concentrations.

Mitigation Measures: The following measures are recommended to reduce short-term noise impacts to nearby land uses to a less than significant level:

10.4(a) The District shall be required to perform a project-specific traffic impact study prior to submitting improvement plans for each phase of development. Based on the findings of the traffic impact study to be prepared, an analysis of localized mobile-source carbon monoxide (CO) concentrations at adversely affected intersections that are projected to operate at unacceptable levels of service (LOS E, or worse) shall be conducted. Analysis of localized mobile-source CO concentrations shall be conducted in accordance with SJVAPCD-recommended methodologies. Appropriate traffic mitigation measures shall be incorporated, as deemed necessary, to ensure that predicted localized concentrations of CO would not exceed applicable ambient air quality standards at modeled receptor locations.

11.1 **Impact:** Short-term noise will occur during project construction phases.

Mitigation Measures: The following measures are recommended to reduce short-term noise impacts to nearby land uses to a less than significant level:

11.1(a) 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.

11.1(b) When not in use, motorized construction equipment idling shall be minimized.

11.1(c) Noise-generating construction activities shall comply with applicable noise ordinance requirements. Accordingly, construction activities shall be limited to between 7:00 a.m. and 9:00 p.m., Monday through Friday, and between the hours of 7:00 a.m. and 5:00 p.m., Saturday and Sunday. Construction activities shall be prohibited on Federal/State-recognized holidays.

11.3 Impact: Noise sensitive uses/activities on the project site may be subject to high noise levels from adjacent streets

Mitigation Measure:

11.3 Proposed noise-sensitive exterior activity areas, including but not limited to patios and exterior classrooms/interpretive areas, shall not be located within the projected cumulative 60 dBA noise contours of adjacent roadways (Table 11-12), unless noise-reduction measures are incorporated sufficient to reduce noise levels within noise-sensitive exterior activity areas to below 60 dBA CNEL/L_{eq}. Noise-reduction measures may include use of setbacks or barriers.

12.1 Impact: The project will increase local demand for water.

Mitigation Measures:

12.1(a) The availability of an adequate water supply to serve the project site shall be determined by the City of Fresno. The project site will not be developed without the City of Fresno having a water supply capable of meeting the water needs of the project.

12.1(b) The District shall construct necessary City of Fresno water system improvements to ensure that the site will be adequately served in terms of water quantity and pressure. The extent of the water facilities that will need to be constructed will vary depending on the timing of the development of the Educational Center site relative to the timing of development of other land areas within the Southeast Specific Plan area. The District shall be responsible for funding its proportionate share of improvements by mutual agreement and to the extent required by law and shall be reimbursed by the City for water facilities installed by the District that have capacity to serve other developments.

12.1(c) Subject to agreement by the Fresno Irrigation District and the City of Fresno, landscape irrigation water for the project shall be obtained from Fresno Irrigation District surface water supplies. The Kutner Colony Number 329 ditch currently supplies the site with irrigation water. Arrangements will need to be made with the Fresno Irrigation District to determine the quantity of water to be used for the site and the periods of delivery.

12.1(d) If a water supply well is determined to be needed on the project site, the District will offer a well lot to the City of Fresno for purchase, sized appropriately to allow for the inclusion of well head treatment facilities.

12.1(e) The water supply at the campus shall meet City of Fresno fire flow requirements.

12.1(f) The District shall pay Water related charges as determined by Fresno Municipal Code.

12.2 **Impact:** Development of the project may damage existing Fresno Irrigation District facilities within the area of the project.

Mitigation Measure:

12.2 (a) All existing Fresno Irrigation District pipelines within the area of the project shall be removed and replaced with rubber gasket reinforced concrete pipe in accordance with FID standards and the District shall enter into an mutually acceptable agreement with FID for that purpose.

12.2(b) Should the replacement pipelines be placed in a different alignment than presently exists, the District shall dedicate an easement to FID for the pipeline as required by FID.

12.3(c) The District shall submit all project improvement plans to FID for review and approval relative to how such improvements may endanger the structural integrity of pipelines, easements or other facilities owned and operated by FID.

12.3 **Impact:** Improper destruction of existing wells on the site can allow pollutants to enter the groundwater supply.

Mitigation Measure:

12.3 Upon development of the property, any existing water well(s) not intended for use by the project, shall be properly destroyed. For those wells located in the unincorporated area of Fresno County, the applicant shall apply for and obtain a permit(s) to destroy water well(s) from the Fresno County Department of Community Health, Environmental Health System prior to commencement of work. The contractor hired to destroy any existing wells shall possess a valid C-57 license.

13.1 **Impact:** The project will result in a need for wastewater collection facilities.

Mitigation Measures:

13.1(a) The District shall extend wastewater collection facilities from the nearest City of Fresno sewer main(s) capable of accepting the wastewater flows from the project. The extent of the sewer facilities that will need to be constructed will be determined by the City of Fresno and they may vary depending on the timing, phasing and location of the educational facilities on the site and other developments in the City of Fresno's Southeast Growth Area. The District shall be responsible for funding its proportionate share of improvements by mutual agreement and to the extent required by law and shall be reimbursed by the City for sewer collection facilities installed by the District that have capacity to serve other developments.

13.1(b) The District shall pay Sewer Facility charges as determined by Fresno Municipal Code.

13.2 **Impact:** Wastewater generated by the project will require wastewater treatment and disposal service.

Mitigation Measures:

13.2(a) The availability of wastewater treatment facilities to serve the project site shall be determined by the City of Fresno. Such treatment capacity availability may vary depending on the timing and phasing of the educational facilities on the site and other developments in the City of Fresno's Southeast Growth Area. The project site will not be developed without the City of Fresno having wastewater treatment capacity available to serve the site.

13.2(b) The District shall pay Sewer Facility charges as determined by Fresno Municipal Code.

14.1 **Impact:** The project will result in increased stormwater runoff.

Mitigation Measures:

14.1(a) The District shall enter into a mutually acceptable agreement with FMFCD for the development of the master-planned storm drainage facilities. The agreement would identify storm drainage fee obligations of the District for development of the site and/or fee credits and/or future reimbursements for the District's construction of any of the master-planned storm drainage facilities. If permanent facilities are not available or feasible at the time of project construction, the District shall have the option to construct temporary on-site ponding facilities until permanent facilities are constructed or available.

14.1(b) The District shall construct the FMFCD Master Plan Storm Drainage Facilities that would connect the site to the FMFCD drainage basin DS and excavate adequate storage volume within that basin to provide for the storage of the runoff generated from the Educational Center site.

14.1(c) The District shall dedicate storm drainage easements related to the construction of any of the master-planned storm drainage pipelines that would occur on the site, outside of the street right-of-way areas.

14.2 **Impact:** Stormwater runoff from project construction activities may pollute natural watercourses and aquifers.

Mitigation Measures:

14.2(a) Project construction documents shall include (1) measures to prevent the disposal of wastes, effluent, chemicals, or other noxious substances on the project site during construction and (2) procedures to contain and properly clean up any accidental spillage or disposal.

14.2(b) The District shall comply with Environmental Protection Agency National Pollution Discharge Elimination System (NPDES) permit requirements, administered by the State Water Resources Control Board (SWRCB), as follows:

(1) File a Notice of Intent (NOI) for discharge from the project site in accordance with NPDES requirements prior to commencing construction;

(2) Require that the project contractor or District prepare a Storm Water Pollution Prevention Plan (SWPPP) in accordance with guidelines adopted by the SWRCB and institute the SWPPP during construction of the project. The SWPPP shall provide a best management plan for the source control of any pollutants that may be mobilized by runoff generated on the construction site and which may enter the public drainage system; and

(3) File a Notice of Completion of Construction for the project site identifying that pollution sources were controlled during construction and implement a closure SWPPP for the site.

14.3 Impact: Development within a flood prone area may result in a portion of the site being subject to periodic flooding.

Mitigation Measures:

14.3(a) Construction documents for the Educational Center are to include grading and drainage plans. These plans shall be prepared in a manner that specifies the filling and grading of the Zone A flood prone area such that no drainage water will be retained on the site. All grading and drainage plans shall be prepared consistent with FMFCD's drainage master plan and shall be reviewed and approved by FMFCD.

14.3(b) Based on the project's grading and drainage plan, the District shall file a Letter of Map Revision (LOMR) with FEMA. With FEMA's approval of the LOMR, the Zone A flood prone designation will be removed from the Flood Insurance Rate Maps and the project will no longer have a portion of the site designated as flood prone.

19.1 Impact: The project will consume electrical energy and natural gas.

Mitigation Measures:

19.1(a) The District shall design all on-site facilities and equipment to exceed Title 24 requirements by 20 percent.

19.1(b) The District shall incorporate an energy control and management system in the project design.

19.1(c) The District shall incorporate the following energy reducing measures in the design of the project as recommended in the LEED for Schools and Collaborative for High Performance Schools programs to the extent feasible and subject to financial limitations: optimum building orientation for energy efficiency, daylighting (designing the buildings to maximize the use of natural light); energy efficient lighting with automatic shutoff and dimming, the use of cool reflective roofing materials; and the landscaping and shading of parking, hardscape and building areas to keep ambient temperatures down.

20.1 **Impact:** Pesticide application or product disposal associated with agricultural use could have materially impacted the project site.

Mitigation Measures:

20.1 Prior to site development and in accordance with Education Code Section 17213.1, the site shall be tested for persistent agricultural chemicals, residential pesticides and other potential contaminants in accordance with the Preliminary Environmental Assessment. Should such contaminants be identified in the soil in concentrations that would be detrimental to human health, appropriate remediation of site soils, or other effective mitigation, shall take place prior to site development in accordance with Education Code Section 17213.2**.**

Cumulative Impacts

The cumulative impacts evaluation in Chapter 22 of this EIR is based upon the cumulative impacts analysis presented in the City of Fresno's *Master Environmental Impact Report No. 10130 – 2025 Fresno General Plan* (MEIR). The MEIR identified the following significant and unavoidable cumulative impacts related to implementation of the *2025 Fresno General Plan*: increased traffic congestion, increased air quality degradation, increased demand for water, loss of productive agricultural resources, and increased noise generation. The analyses presented in this EIR determined that the proposed project would not change the conclusions presented in the MEIR. No significant cumulative impacts identified in the MEIR would be increased because of the project and no new significant cumulative impacts would result from the project.

Significant Irreversible Environmental Changes

Implementation of the project would result in the use, or consumption, of nonrenewable resources including agricultural land and some construction materials and energy resources.

Summary of Alternatives Addressed

In accordance with CEQA, this EIR addresses two "no project" alternatives and three alternative site locations. The first "no project" alternative assumes the project study area would remain in agricultural use because this is the current site condition. The second "no project" alternative assumes the project study area would be developed as planned by the *2025 Fresno General Plan*. Under the general plan, the study area is conceptually planned for medium density residential development.

The evaluation of alternative locations is based on the *Fourth Educational Center Site Selection Study (revised)* (December 2006), which is incorporated in this EIR as Appendix I-1. This report identified and evaluated four possible locations for the project, including the proposed project site, all of which are addressed in Chapter 24 and summarized below:.

- The No Project/Agricultural and Rural Residential Use Alternative would achieve none of the project's objectives because the project would not be developed. It

would avoid or substantially lessen all but two of the project's significant effects and increase one (pesticide application).

- The No Project/Medium Density Residential Use Alternative would achieve none of the project's objectives because the project would not be developed. It would avoid or substantially project impacts related to land use conflicts and would not result in noise and light impacts due to a stadium. This alternative would substantially increase water consumption and the generation of wastewater.

- Development of the project on Alternative Site B would not achieve all of the project's objectives. Development on Site B would require the elementary school to be developed on a parcel separated from the main site by a major street. This would not meet the project objective of having an educational center on one site. In addition, this alternative would result in an increase in prime agricultural land conversion because the project contains substantially more prime agricultural land than the project site.

- Development of the project on Alternative Site C would not achieve all of the project objectives. Site C is too small to accommodate a stadium or elementary school. Site C is in the middle of a permanent rural residential area and the project would not be compatible in such an area. The alternative site would result in the conversion of more prime agricultural land but would have less of an impact with respect to agricultural conflicts on adjacent land.

- Development of the project on Alternative Site E would achieve all of the project's objectives. However, this alternative would result in an increase of the project's effects related to land use conflicts, prime agricultural land conversion, and agricultural conflicts. This is because the project would be within an area that is adjacent to land planned to remain in agricultural use and the site contains substantially more prime agricultural land than the project site. Site E also has very limited street access, which would not be able to handle the traffic and access needs of the project. Trip length and air quality emissions would increase due to the location of the site on the eastern edge of the planned urban area.

State CEQA Guidelines Section 15126(c)(2) requires that "if the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." As demonstrated by Table 24-7, the No Project/Agricultural Use alternative would avoid or substantially lessen all but one of the project's significant environmental effects. It is, therefore, the environmentally superior alternative, although it would achieve none of the project objectives.

Based on the alternatives analysis, none of the alternatives would be environmentally superior to the project. Therefore, notwithstanding the "no project" alternatives, the project would be the environmentally superior alternative.

Areas of Controversy and Unresolved Issues

No project-related areas of controversy or unresolved issues were identified during the preparation of this EIR.

Chapter 2

Project Description

Introduction

The Clovis Unified School District (District) is proposing to undertake the Clovis Unified Fourth Educational Center project, which includes acquisition of a site, and the construction and operation of a high school, intermediate school, elementary school and related athletic/recreational facilities. As required by State CEQA Guidelines Section 15124, this chapter describes the location and boundaries of the proposed project, the design and operational characteristics of the project, and the project objectives. This chapter also describes the agencies that are expected to use the EIR in their decision-making and the permits and other approvals required to implement the project.

Project Location

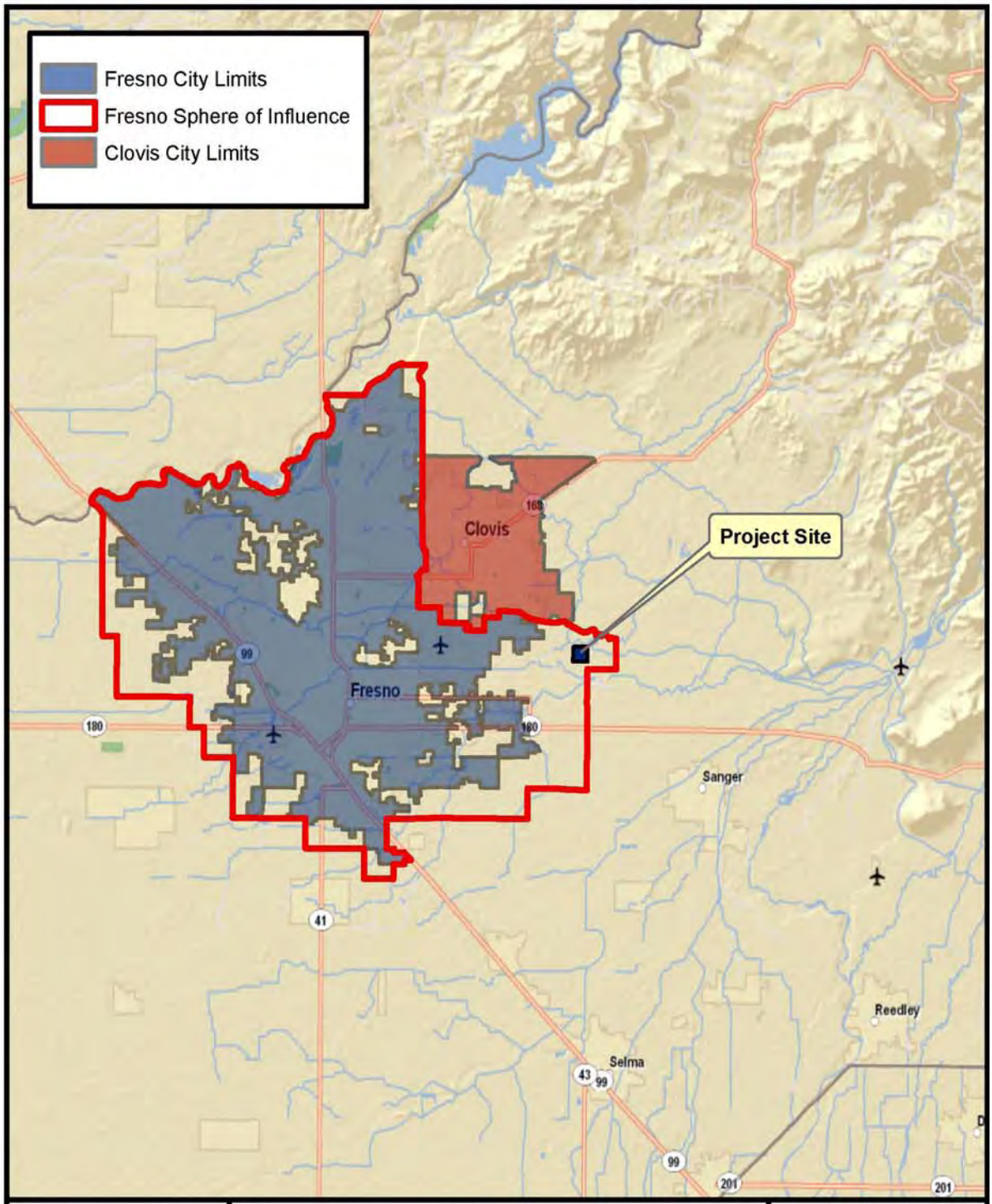
The 160.46-acre project site is located between N. Leonard and N. Highland Avenues on the north and south sides of the E. Clinton Avenue alignment, Fresno County, California (see Figures 2-1, 2-2, and 2-3). The site is located within Section 25, Township 13 South, Range 21 East, Mount Diablo Base and Meridian, as shown on the *Clovis, Calif.* 7.5 Minute Series USGS Quadrangle (1964). The Fresno County Assessor's Parcel Numbers for the site are 310-310-14T, 310-310-39, 310-052-10T, and 310-320-01S through 08S.

Project Description

The project consists of the acquisition of 160.46 gross acres by the Clovis Unified School District (District) and the development and operation of an educational center on the site. The educational center will include a high school (2,900-student capacity), intermediate school (1,400-student capacity), elementary school (700-student capacity) and related athletic/recreational facilities. The project will also include an 8,000-seat football stadium.

The buildings to be included on the site will include classrooms, administrative offices, food service facilities, library/media facilities, gymnasiums, locker/shower facilities, shop buildings and a maintenance area. The project could potentially include a performing arts center. Adequate off-street parking for students, faculty and visitors will be provided.

In addition to the football stadium, the outdoor recreational/athletic facilities on the site may include baseball and softball stadiums and fields, soccer fields, basketball courts, tennis courts and a swimming pool complex. All of these facilities may be lighted.



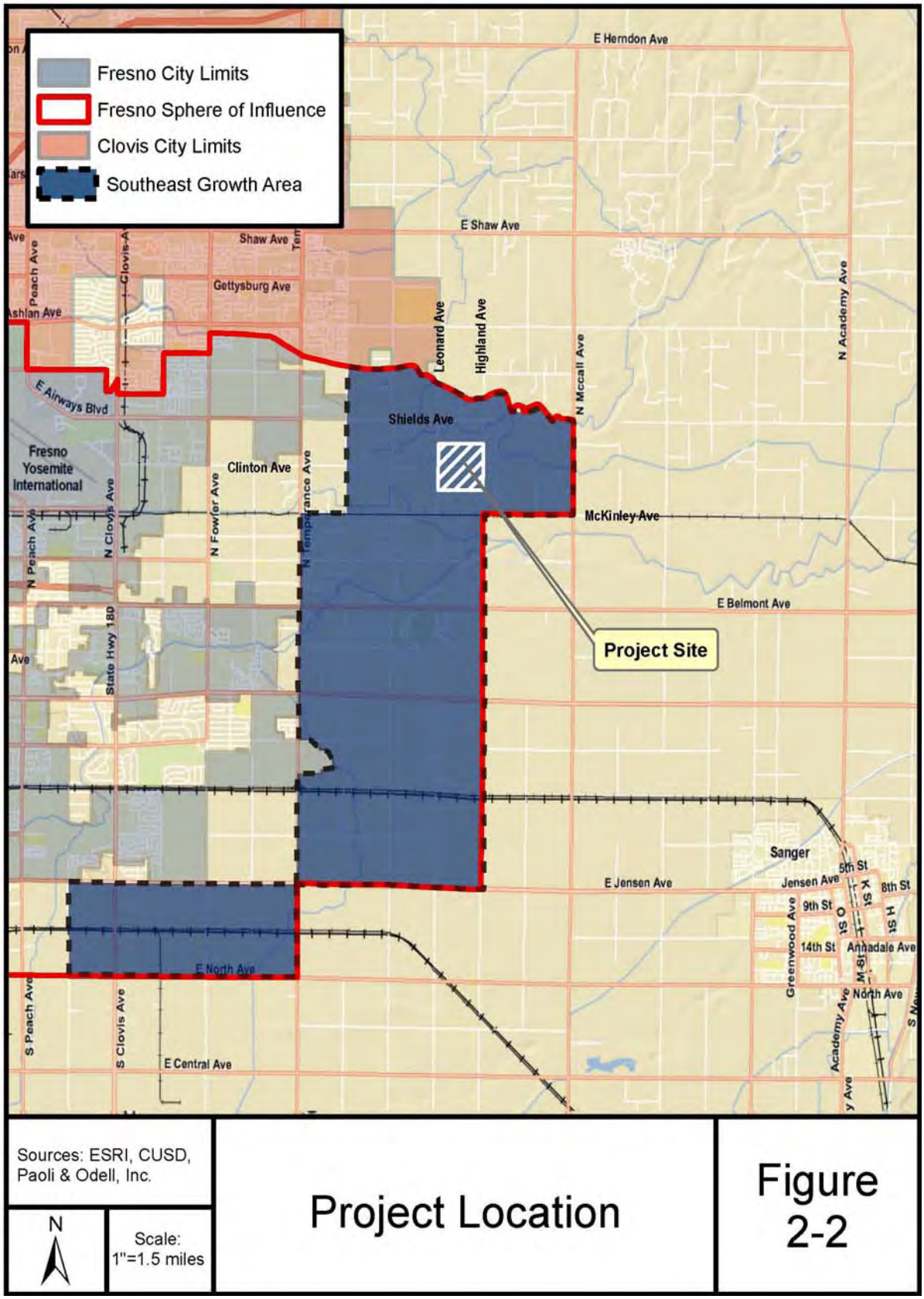
Sources: ESRI, CUSD, Paoli & Odell, Inc.

N

Scale: 1"=5 miles

Project Regional Location

Figure 2-1


Fresno City Limits
Fresno Sphere of Influence
Clovis City Limits
Southeast Growth Area
E Herndon Ave
E Shaw Ave
Shaw Ave
Gettysburg Ave
Leonard Ave
Highland Ave
N Mccall Ave
N Academy Ave
N Peach Ave
Clovis Ave
E Airways Blvd
Shields Ave
Fresno Yosemite International
Clinton Ave
N Fowler Ave
N Temperance Ave
N Clovis Ave
McKinley Ave
E Belmont Ave
Project Site
State Hwy 180
Sanger
E Jensen Ave
Jensen Ave
5th St
8th St
9th St
K St
H St
O St
14th St
Annadale Ave
Greenwood Ave
North Ave
Academy Ave
E North Ave
S Peach Ave
S Clovis Ave
E Central Ave
Sources: ESRI, CUSD, Paoli & Odell, Inc.
N
Scale: 1"=1.5 miles
Project Location
Figure 2-2

Sources: Google Earth, CUSD, Paoli & Odell, Inc.

N

Scale: Not to Scale

Project Site Aerial Photograph

Figure 2-3

The project includes various street, water, sewer, and storm drainage improvements necessary to serve the site and eventual annexation of the site to the City of Fresno.

Construction of the facilities is expected to begin in approximately 5-7 years. The duration of construction is typically about 2 years; therefore, the facilities are anticipated to be completed and operational in approximately 7-9 years. The actual timing of construction will be dependent upon enrollment growth and funding availability.

Project Objectives

The objectives of the Clovis Unified School District in proposing the project are to:

- Provide school facilities for anticipated high school, intermediate school and elementary school students within the southeast area of the District;

- Provide the facilities in the form of an educational center (high school, intermediate school, elementary school and related recreational/athletic facilities on a common site);

- Provide a stadium facility on site to accommodate and enhance the District's competitive sports education programs at a level commensurate with other schools in the Tri-River Athletic Conference.

Need and Rationale for Project

Enrollment Growth/Urban Growth Potential in the District

Clovis East High School and Reyburn Intermediate School within the Reagan Educational Center are already nearing capacity. The Reagan Educational Center was intended to serve the area south of Shaw Avenue, and was sited within the City of Clovis' Loma Vista Specific Plan area (Loma Vista). Development within the western portion of the Loma Vista area has been underway for about two years. However, most of the Loma Vista area remains to be developed. The portion of Loma Vista within the District would accommodate a population of approximately 20,000.

Within the City of Fresno's Planning Area (south of the Gould Canal), development within the existing planned urban area would result in an additional 15,000 population in the District. Numerous subdivision maps have been approved in the area and development is occurring.

With the adoption of the 2025 Fresno General Plan in 2002, the City of Fresno added a new growth area south of the Gould Canal and east of Locan Avenue. This new "Southeast Growth Area" would eventually accommodate a population of about 10,000-15,000 new residents within the District. The City of Fresno is currently preparing a specific plan for the Southeast Growth Area and is considering alternatives that will substantially increase the density and population in the plan area.

Advantages of the Educational Center Concept

There are substantial educational and financial benefits associated with constructing school facilities as educational centers (see Appendix 2-1). The educational benefits of locating elementary, intermediate and high school facilities in one geographic area include better access to specialized facilities and programs, improved articulation of curriculum and instruction, greatly enhanced cross-age and peer tutoring, improved co-curricular programs, better staff communication and interaction, and improved parental involvement.

Financially, the construction and operation of an educational center results in substantial cost savings to the District as compared to operating individual school sites. This financial benefit results from reduced costs for off-site improvements (sewer and water lines, storm drains, street improvements, etc.); equipment acquisition cost savings for communications and food service equipment; and reduced operational costs for transportation, maintenance, utilities, communications and food service.

Intended Uses of the Environmental Impact Report

Lead Agency

The Clovis Unified School District is the lead agency for this project. The lead agency is the public agency that has the principal responsibility for carrying out or approving a project. Certification of this EIR by the District would be necessary to allow the District to acquire the site and develop it with an educational center.

Responsible Agencies

A responsible agency is a public agency other than the Lead Agency that has discretionary approval power over the project. Approvals required for the project from responsible agencies are shown on Table 2-1. Additional responsible agencies and further required approvals may be identified in response to this draft EIR.

TABLE 2-1
REQUIRED APPROVALS

Responsible Agency	Approvals/Entitlements
State of California, Department of Education	• Approve site (based on program and safety considerations)
State of California, Department of Toxic Substances Control	• Approve site (based on hazardous materials considerations)
State of California, Allocation Board	• Approve project funding applications
State of California, Office of Public School Construction	• Review project funding applications • Make recommendations to State Allocation Board
Fresno Local Agency Formation Commission	• Approve annexation of project site to the City of Fresno. The project site is on unincorporated land within the County of Fresno, but is within the City of Fresno Sphere of Influence. Depending on the timing of planning activities for the City's Southeast Urban Growth Area (see Chapter 3) and of annexations in the project vicinity, development of the project may occur before the site can be annexed to the City of Fresno. The District, however, will request that the City annex the site when annexation is feasible.

TABLE 2-1 (Cont'd) REQUIRED APPROVALS	
City of Fresno	• Annex project site • Approve sewer and water connections and any street improvements in incorporated area
County of Fresno	• Approve any street improvements in unincorporated area

Sources

Fresno, City of, Planning and Development Department. *Draft Environmental Impact Report No. 10130, 2025 Fresno General Plan*. Environmental consultant: URS Corporation. May 2002.

United States Geological Service. Clovis, Calif. 7.5 Minute Series USGS Quadrangle. 1964.

Chapter
3

Land Use and Public Land Use Policy

Setting

Existing Land Use

The project site is located in a rural and agricultural area (see Figure 2-3). Approximately 100 acres of the 160 acre site is owned by the Fresno Metropolitan Flood Control District (FMFCD) and was previously used as a repository for material excavated from flood control basins. This land is used as dry pasture for grazing cattle. The northwest approximately 20 acres is an almond orchard and includes a single family home and beekeeping operation. The remaining 40 acres comprising the southeast quarter of the site consists of eight five-acre lots, each containing a rural residence.

Existing land uses surrounding the project site include vacant land, orchards, vineyards, and rural residences.

The nearest urban development to the project site is located approximately one and one-quarter mile northwest of the project site, within the Cities of Fresno and Clovis.

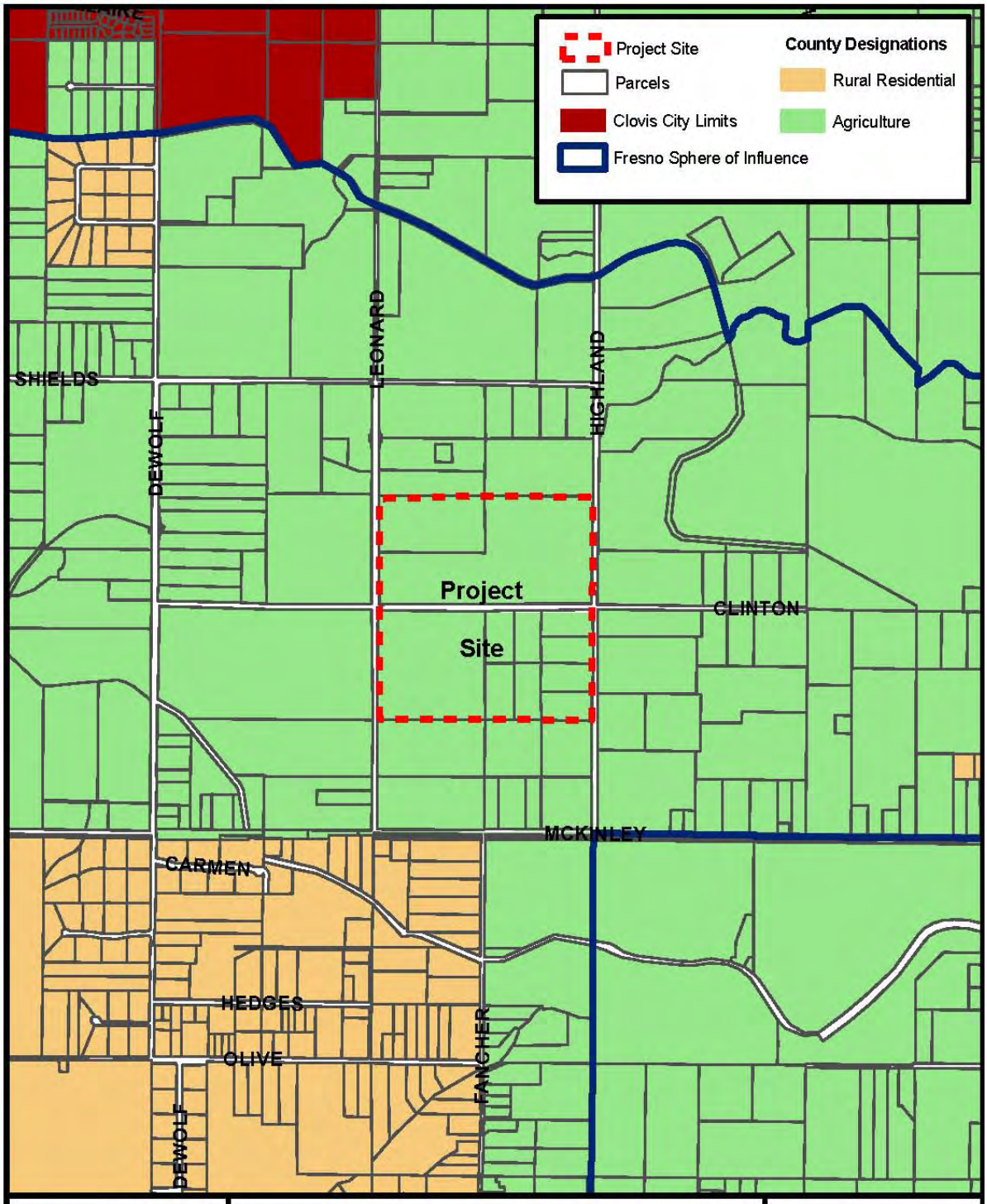
Public Land Use Policy and Zoning

County of Fresno

The project site and surrounding land are within an unincorporated portion of Fresno County. The *Fresno County General Plan* designates the project site and surrounding land for Agriculture and the County has zoned this land AE-20 (Agricultural Exclusive, 20 acre minimum) (see Figures 3-1 and 3-2). According to the County general plan, "this [Agricultural] designation provides for the production of crops and livestock, and for location of necessary agriculture commercial centers, agricultural processing facilities, and certain nonagricultural activities. (See Table LU-3 for list of typical uses)" (p. 2-4) Educational centers are not among the typical uses listed in Table LU-3.

As described in the *Fresno County Zoning Ordinance*, the AE-20 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. This district is intended 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. (sec. 816)



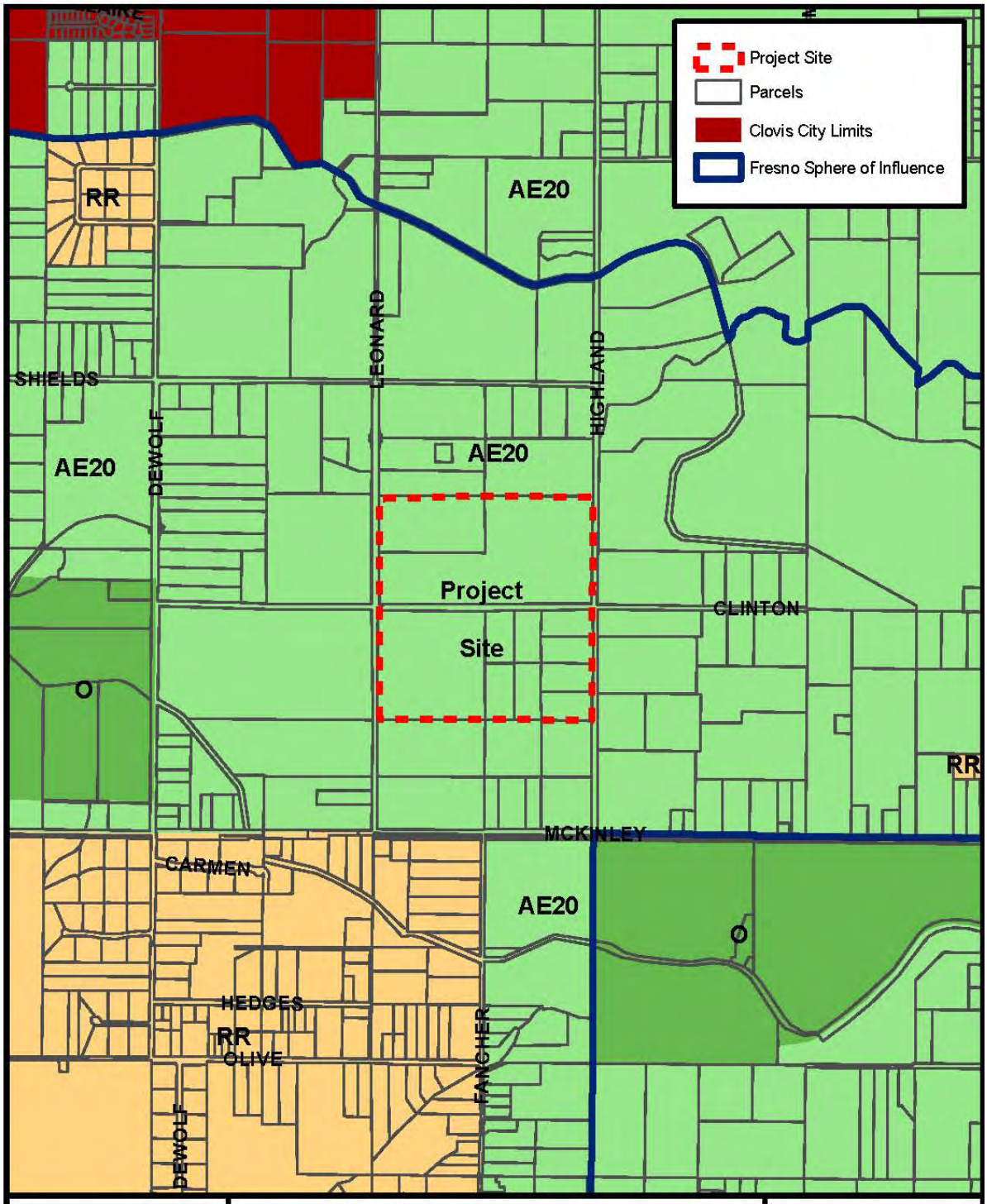
Sources: County of Fresno, CUSD, Paoli & Odell, Inc.

N

Scale: 1"= 1/3 mile

Fresno County General Plan Designations

Figure 3-1



Sources: County of Fresno, CUSD, Paoli & Odell, Inc.

N

Scale: 1"= 1/3 mile

Fresno County Zoning

Figure 3-2

Public schools are permitted in the AE-20 District subject to Director Review and Approval (sec. 816.2, H).

The *Fresno County General Plan* contains goals, policies, and implementation programs for "incorporated city, city fringe area, and unincorporated community development." The goal, policies, and implementation program applicable to the proposed project are as follows:

> Goal LU-G: To direct urban development within city spheres of influence to existing incorporated cities and to ensure that all development in city fringe areas is well planned and adequately served by necessary public facilities and infrastructure and furthers countywide economic development goals. (2-39)
>
> Policy LU-G.1: The County acknowledges that the 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. (2-40)
>
> Policy LU-G.11: The County shall not approve any discretionary permit for new urban development within a city's sphere of influence unless the development proposal has first been referred to the city for consideration of possible annexation pursuant to the policies of this section and provisions of any applicable city/county memorandum of understanding. (2-41)

City of Fresno

The project site is within the City of Fresno's Sphere of Influence[1] (see Figures 2-1 and 2-2). Therefore, although the area is not within the City, pursuant to *Fresno County General Plan* Goal LU-G and Policy LU-G.1, the City has primary responsibility for land use planning and the provision of urban services for the project site.

The *2025 Fresno General Plan* includes the project site and the surrounding land within Southeast Growth Area. The Southeast Growth Area encompasses approximately 8,863 acres, of which 7,263 acres are conceptually planned primarily for residential development and related uses and 1,600 acres are conceptually planned for light industrial uses. The project site is within the "Southeast Village I" portion of the Southeast Growth Area.

The *2025 Fresno General Plan* does not provide specific policy guidance for development within any of the residential portions of the Southeast Growth Area. Such guidance will be provided in a specific plan the City must adopt prior to pursuing any annexations within the area or allowing any development within the area. The requirement for a specific plan is contained in the "Amended and Restated Memorandum of Understanding between the County of Fresno and the City of Fresno,) (MOU) executed on January 9, 2003. The MOU specifies, among other things, that development may not proceed within the "Southeast Village I" until the City has completed a specific plan and environmental work for the entire Southeast Growth area. The plan requirement is reinforced through a condition of approval adopted by the Fresno County Local Formation Commission (LAFCo) when it approved adding the Southeast Growth Area to the City's Sphere of Influence on April 12, 2006. The condition

[1] "Sphere of influence" means a plan for the probable physical boundaries and service area of a local agency (i.e., the City of Fresno, as determined by the Local Agency Formation Commission.

specifies that prior to LAFCo approving any annexations within the area, the City must "… prepare or adopt a community or specific plan for the Southeast Growth Area." (10 & 11)

The City has begun work on the specific plan and associated EIR, which are expected to be completed in 2009. Preliminary plan alternatives show the project site as an educational center.

Significance Criteria

According to Appendix G of the State CEQA Guidelines, a project may be determined to have a significant effect on the environment if it would:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect;
- Conflict with any applicable habitat conservation plan or natural community conservation plan;
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere, or
- Displace substantial numbers of people, necessitating the construction of replace housing elsewhere.

Significant Impacts and Mitigation Measures

Impact 3.1:

The project is inconsistent with the Fresno County General Plan agricultural land use designation for the project site.

Development of an education center on the project site would not be consistent with the Fresno County General Plan agricultural land use designation for the project site. However, the project is within the Southeast Growth Area designated in the *2025 Fresno General Plan* and is within the City of Fresno Sphere of Influence, as approved by LAFCo in April 2006. A specific plan and EIR are being prepared for the Southeast Growth Area as specified in the Memorandum of Understanding between the City of Fresno and Fresno County. The plan preparers are aware of the District's intentions and need for school facilities in the area and are be taking this into consideration in the preparation of the plan. In fact, preliminary plan alternatives show the project site as an educational center.

Mitigation Measures

3.1(a) The City of Fresno should incorporate the project in the specific plan for the Southeast Growth Area.

3.1(b) At such time as annexation is feasible, the District shall request that the City of Fresno annex the project site. "Feasible" for the purposes of this mitigation measure shall mean that the annexation will comply with applicable LAFCo policies and the City has complied with applicable requirements of the January 6, 2003 Memorandum of Understanding with the County of Fresno, including adoption of the specific plan.

Level of Significance

This impact will be less than significant with the incorporation of the mitigation measures.

Impact 3.2:

The project will conflict with existing surrounding agricultural land uses and could conflict with nearby rural residential uses.

Project impacts related to surrounding agricultural land are described in Chapter 5.

The project site is surrounded by several scattered rural residences. A concentration of rural residences is located south of the project site, south of McKinley Avenue. As discussed in various other sections of this EIR, the project will result in increased traffic, noise, air pollution, and light and will change the visual environment. For residents who moved into the area for the rural environment and lifestyle, the change in the rural agricultural environment may be viewed as a significant adverse impact of the project.

Note: Construction will not begin on the project for at least 5-7 years and the schools would not open for at least 7-9 years. The area around the project site is planned for urban development as part of the City of Fresno Southeast Growth Area. Therefore, it is possible that urban development may occur around the site prior to site development, which would reduce or eliminate adjacent rural residential and agricultural uses.

Mitigation Measures

3.2(a) The District shall implement the mitigation measures recommended in subsequent chapters of this EIR for traffic, noise, air quality, and aesthetics.

Level of Significance

Nearby residents may view the change in the rural environment caused by the project as a significant unavoidable impact.

Impacts Not Found to be Significant

Impact 3.3:

The project will displace nine housing units

The nine housing units on the project site will be removed as the project develops. Five of the units are not occupied. Purchase of property by the District or acquisition by eminent domain requires payment of fair market value. Housing occupants are also provided with relocation assistance, as required by law.

Mitigation Measure

None Required

Level of Significance

This impact is less than significant.

No Impacts

As described in Table 2-1, the approvals sought for the project include annexation of the site to the City of Fresno and the provision of City water and sewer services for the project. These approvals (and Mitigation Measures 3.1(a) and (b)) are consistent with *Fresno County General Plan* fringe area goals and policies which direct urban development within city spheres of influence to existing incorporated cities.

The project would not be developed within an established community; therefore, it could not physically divide such a community.

No habitat conservation plans or natural community conservation plans are applicable to the project vicinity.

Sources

Fresno Local Agency Formation Commission (LAFCo), by Jeff Tweedie, Interim Executive Officer (2006, April 12). Executive Officer's Report: Consider Approval – Proposed Revision to the City of Fresno Sphere of Influence to include the "Southeast Growth Area" (approximately 8,863 acres) (LAFCo File no. USOI-44)

Fresno, City of (2002, February 1) *City of Fresno 2025 General Plan*.

Fresno, City of (2006, March 10). *Municipal Code and Charter of Fresno, California – Chapter 12, City Planning*.

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Fresno, County of (amended 2004, March 2). *Zoning Ordinance of the County of Fresno*.

Chapter
4

Geology, Soils, Seismic Conditions, and Mineral Resources

Setting

Introduction

This chapter evaluates the potential impacts related to geologic, soils and seismic conditions. The evaluation is based primarily upon a report prepared by Technicon Engineering Services, Inc. (*Preliminary Geotechnical Report Proposed Fourth Educational Center west of Highland and Clinton Avenues Clovis, California.* April 2, 2008).

Geologic Setting

The project site is located in the east central portion of the San Joaquin Valley. The valley is bordered on the east by the Sierra Nevada and on the west by the Coast Ranges. The valley fill consists of a sequence of marine and overlying continental sediments, Jurassic to Holocene in age, that reach a thickness of as much as 28,000 feet on the southwest side of the valley. The project site is situated on Holocene fan deposits from the Sierra Nevada mountains to the east.

Soil borings taken from the project site exposed soils consisting of surface silty sand with varying silt and clay content underlain by laterally discontinuous lenses and layers of clayey sand, sandy silt, sandy clay, and poorly graded sand with silt to the depth explored, 51.5 feet below surrounding grade (bsg). The granular soils generally had a relative consistency of medium dense to dense. The fine grained soil had a relative consistency of medium stiff to hard.

Groundwater was encountered at two boring locations at depths of 44 and 45 feet. In addition, groundwater elevation data from California Department of Water Resources were reviewed and the shallowest historical water levels in the area have occurred at a depth of 9 feet.

Surface Fault Rupture

The project site and its vicinity are located in an area traditionally characterized by relatively low seismic activity. The site is not located in an Alquist-Priolo Earthquake Fault Zone. Table 4-1 identifies the primary sources of seismic shaking for the project site and presents the fault type, distance from the site, magnitude, and ground acceleration based on published sources. Faults with the greatest potential to produce strong ground motion at the project site are: (1) the Great Valley Fault Zone (also known as the Coast Ranges Sierran Block), which produced the 1983 Coalinga Earthquake and the 1985 North Kettleman Hills Earthquake; (2)

the San Andreas Fault System, one of California's most prominent structural features, extending from Cape Mendocino to the Salton Sea; and (3) the Foothills Fault System, which is a zone of steeply dipping faults along the west flank of the Sierra Nevada, extending from Plumas County to Mariposa. Since these faults are far from the project site, the potential for fault-related surface rupture is very low.

Additionally, the project site is not located in or near a Fault-Rupture Hazard Zone as shown by California Division of Mines and Geology Special Publication 42.

Table 4-1
Primary Sources of Seismic Shaking

Fault Name		Fault Style	Distance from Site (miles)	Magnitude (Mw)	Ground Acceleration (g)
Foothills Fault System	Prairie Creek-Spenceville-Dentman	Normal	42	6.5	0.083
	Forest Hill-Melones	Normal	43	6.5	0.081
San Andreas		Strike-Slip	80	7.8	0.082
Round Valley		Right Lateral / Strike-Slip	65	7	0.076
Independence		Normal	73	7.1	0.074
Owens Valley		Right Later / Strike-Slip	79	7.6	0.074
Coast Ranges Sierran Block		Reverse Thrust	49	6.6	0.066
Ortigalita		Right Lateral / Strike-Slip	70	7.1	0.063

Seismic Shaking – Peak Ground Acceleration

According to the deterministic seismic hazard analysis prepared for the project, a review of other faults found within 100 miles of the project site indicate a low potential for generating strong ground motion at the site due either to distance or low activity of the fault. The estimated peak horizontal acceleration at the site due to earthquake ground motion is 0.18g for the Upper Bounds Earthquake[1].

[1] The Upper Bounds Earthquake (UBE) is defined by the 1998 California Building Code as the motion having a 10 percent probability of being exceeded in a 100-year period or maximum level of motion that may ever be expected at the building site within the known geological framework. The UBE applies to schools, hospitals and other critical facilities.

Seismically Induced Ground Failure

Liquefaction and Lateral Spreading

Liquefaction is a seismic phenomenon in which loose, saturated, fine-grained, granular soils subjected to high intensity ground shaking behave like a fluid, losing essentially all strength. Based on the high relative density and stiffness of the on-site soils, a high ground water depth of 10 feet, and anticipated ground motion, analysis indicates that liquefaction and associated seismically induced settlement is unlikely.

Also, given that the project site topography is flat and that there is an unlikelihood of liquefaction, the potential for lateral spreading is considered very low.

Dry Sand Settlement

Settlement of the ground surface with consequential differential movement of structures is a major cause of seismic damage for buildings founded on alluvial deposits. Vibration settlement of relatively dry and loose granular deposits beneath structures can be readily induced by the horizontal components of ground shaking associated with even moderate intensity earthquakes. Considering the age of sediments and that problematic soils were not identified in the borings drilled on the project site, seismically induced dry sand settlement is anticipated to be minimal.

Slope Stability and Potential for Slope Failure

The project site and surrounding areas are essentially flat and the potential hazard due to landslides from adjacent properties is nil.

Other Potential Hazards

In addition to ground motion, other hazards from earthquakes include tsunamis, seiche, and inundation due to dam failure. None of these items are of significant concern in relation to the project site.

Mineral Resources

The *Fresno County General Plan Background Report* indicates that there are no mineral resources or mineral resources recovery sites within or near the project site.

Significance Criteria

Based upon Appendix G of the State CEQA Guidelines, a project may be determined to have a significant effect on the environment if it would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure (including liquefaction), and landslides;
- Result in substantial soil erosion or loss of topsoil;

- Be located on a geologic unit or soil that is or 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 risks to life or property
- Expose people or property to inundation by seiche, tsunami, or mudflow; or
- 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 or of a locally important mineral resource recovery site.

Significant Impacts and Mitigation Measures

There are no significant impacts related to geology, soils, seismic conditions or mineral resources.

Impacts Not Found to be Significant

Impact 4.1:

The potential for project site related geologic or seismic hazards is low.

No known or potentially active faults cross or project across the project site and the potential for ground rupture due to faulting, or the generation of strong ground motion, at the project site is considered low. Fresno is classified in being in a moderate seismic risk zone, Category "C" or "D," depending on the soils underlying the specific location being categorized and that location's proximity to the nearest known fault lines. All new structures are required to conform to current seismic protection standards in the California Building Code (California Code of Regulations Title 24) (City of Fresno Planning & Development Department, 2008).

Estimated peak horizontal acceleration at the project site: UBE -0.18g

Because the topography of the project site is flat, potential geologic hazards resulting from steep slopes or other topographic features do not exist. Potential hazards from liquefaction, lateral spreading, seismically induced settlement, and volcanic activity are considered unlikely.

The project site is not in an area subject to hazards associated with tsunami, seiche, or catastrophic dam breach.

Existing Regulation

The project must conform to current seismic protection standards in the California Building Code (California Code of Regulations Title 24).

Level of Significance

Compliance with existing regulations will ensure that this impact will be less than significant.

Impact 4.2:

Soil conditions on the project site must be evaluated prior to construction.

Technicon has taken on-site soil borings extended to depths ranging between 11.5 and 51.5 feet. The boring analysis did not reveal any unusual soil conditions that would significantly hamper construction on the site. Once building and foundation plans are prepared, site specific geotechnical analysis must be performed and submitted to the Division of the State Architect to identify the specific construction and soil preparation measures necessary to accommodate the proposed school buildings.

Existing Regulation

The Division of the State Architect (DSA) will require the District to prepare a geotechnical investigation for the project site, which will address on-site soils conditions as they relate to proposed construction. DSA will require the District to incorporate in the project plans any measures identified in the investigation as necessary to properly prepare the site for construction.

Level of Significance

Compliance with existing regulations will ensure that this impact will be less than significant.

No Impact

The project would not 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 or of a locally important mineral resource recovery site.

Other Geologic- and Soils-Related Impacts

Existing conditions and project impacts related to erosion and flooding are addressed in Chapter 14 of the EIR.

Sources

This chapter is based on the following report:

Technicon Engineering Services, Inc. *Preliminary Geotechnical Report Proposed Fourth Educational Center West of Highland and Clinton Avenues Clovis, California*. April 2, 2008.

Other sources used:

Fresno, City of. Planning and Development Department. Draft Text for Addressing Geological and Seismic Consideration in Initial Studies (unpublished). Sandra Brock, Planner III. April 8, 2008.

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Chapter
5

Agricultural Resources

Setting

Existing Agricultural Uses

The agricultural uses within the project site and on adjoining land are shown on Figure 2-3. Approximately 100 acres of the site is owned by the Fresno Metropolitan Flood Control District (FMFCD) and has been used as a repository for material excavated from flood control basins. This land is flat and slightly elevated above surrounding land, due to the added material deposited on site, and used as dry pasture for grazing cattle. The northwest approximately 20 acres of the site is an almond orchard and includes a single family home and beekeeping operation. The remaining 40 acres comprising the southeast quarter of the site consists of eight five-acre lots with a single family dwelling on each lot.

The land surrounding the project site includes vacant land, orchards and vineyards. Rural residences and farm buildings are scattered throughout the area.

Soils

Six soil types have been identified on the project site. These soils are listed in Table 5-1 and their locations within the project site are shown on Figure 5-1.

The United States Department of Agriculture uses several methods for describing the capability of a given soil to support various uses. One description of the breadth of uses supported by a soil is its Capability Class, designated by Roman numerals I through VIII. Class I soils have few limitations that restrict their use, while Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices. Class III soils have severe limitations that reduce the choice of plants, require special conservation practices, or both. The Atwater Sandy Loam, 0 to 3 percent slopes found within the project site is a Class II soil. All of the remaining soil types found on the project site are Class III soils (USDA, 2006).

Another useful description of the suitability of a given soil for intensive agriculture is the Storie index rating. This index considers soil characteristics, texture, slope, and other limiting factors, and assigns a rating of up to 100. A rating of 100 expresses the most favorable conditions for crop production. The Storie index ratings of the on-site soils are 88 for Atwater Sandy Loam, 0 to 3 percent slopes; 70 for Atwater Loamy Sand, 0 to 3 percent slopes; 65 for Atwater Loamy Sand, 3 to 9 percent slopes; 65 for Atwater Sandy Loam, moderately deep, 0 to 3 percent slopes; 53 for Atwater Sandy Loam, clay substratum, 0 to 3 percent slopes; and 52 for Atwater Loamy Sand, moderately deep, 0 to 3 percent slopes (USDA, 2006).

TABLE 5-1

PROJECT SITE SOILS AGRICULTURAL CAPABILITIES

Soil	Approximate Site Area	Capability Class	Storie Index Rating	FMMP Rating
Atwater Sandy Loam, 0 to 3 percent slopes (ArA)	59 acres	II	88	Prime Farmland
Atwater Loamy Sand, 0 to 3 percent slopes (AoA)	33 acres	III	70	Prime Farmland
Atwater Loamy Sand, 3 to 9 percent slopes (AoB)	7 acres	III	65	Prime Farmland
Atwater Sandy Loam, moderately deep, 0 to 3 percent slopes (AtA)	48 acres	III	65	Prime Farmland
Atwater Sandy Loam, clay substratum, 0 to 3 percent slopes (AsA)	3 acres	III	53	Farmland of Statewide Importance
Atwater Loamy Sand, moderately deep, 0 to 3 percent slopes (ApA)	8 acres	III	52	Farmland of Statewide Importance

Sources: USDA, Natural Resources Conservation Service, SSJRGO Database (2002); California Department of Conservation – FMMP.

The California Department of Conservation's Farmland Mapping and Monitoring Program classifies farmland as follows: Prime Farmland is defined as having the best combination of physical and chemical features to sustain long term production of agricultural crops. Farmland of Statewide Importance is land similar to Prime Farmland, but with minor shortcomings such as greater slope or a lesser ability to hold and store moisture. Unique Farmland is land of lesser quality soils used for the production of the state's leading agricultural cash crops. (California Department of Conservation, 1994).

The Atwater Sandy Loam, 0 to 3 percent slopes, Atwater Loamy Sand, 0 to 3 percent slopes, Atwater Loamy Sand, 3 to 9 percent slopes, and Atwater Sandy Loam, moderately deep, 0 to 3 percent slopes, which comprise approximately 92 percent of the project site, are listed as Prime Farmland in the Farmland Mapping and Monitoring Program Soil Candidate Listing for Fresno County. The Atwater Sandy Loam, clay substratum, 0 to 3 percent slopes and Atwater Loamy Sand, moderately deep, 0 to 3 percent slopes covering approximately 7 percent of the project site, are listed as Farmland of Statewide Importance. The remaining approximately 2 acres or 1 percent of the site consists of an intermittent pond and is not classified as farmland (California Department of Conservation, 1995).

Important Farmlands

As indicated on Table 5-1, 147 acres of the site is classified as Prime Farmland and 11 acres is classified as Farmland of Statewide Importance. This is based on the California Department of Conservation's Farmland Mapping and Monitoring Program soil classification. The actual amount of Prime Farmland and Farmland of Statewide Importance, however, is significantly less since much of the underlying soils have been altered by the introduction of material

excavated from flood control basins and the development of rural residences on the site. As such, much of the soil on the site has been rendered unsuitable for productive agricultural use. Table 5-2 lists the Important Farmland classification, description and approximate acreage amounts found on the site. The location of these soils is shown on Figure 5-1.

TABLE 5-2

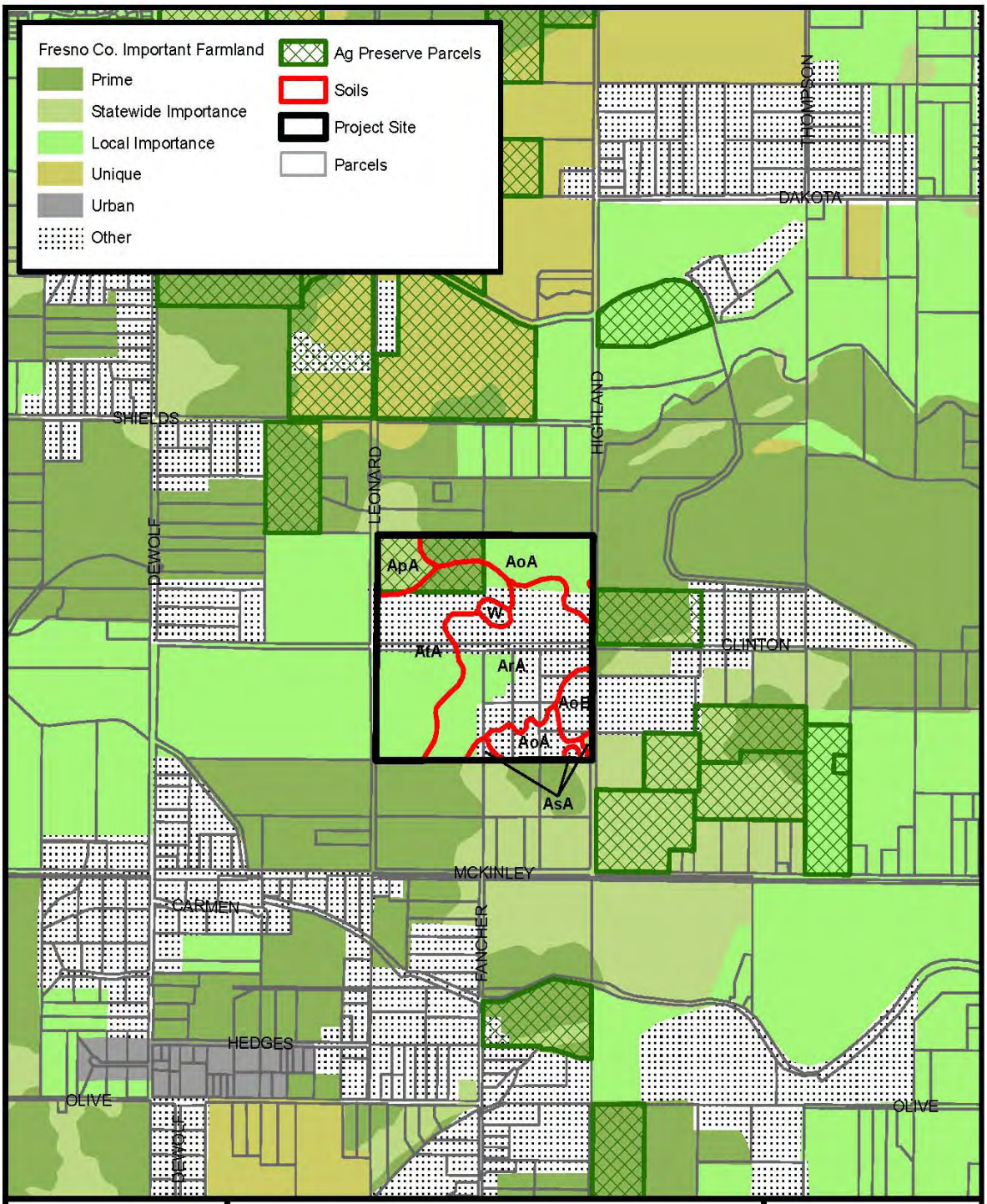
PROJECT SITE IMPORTANT FARMLANDS CLASSIFICATIONS

Classification	Description	Approximate Site Area
Prime Farmland	Irrigated land with the best combination of physical and chemical features able to sustain long term production of agricultural crops. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields.	11 acres
Farmland of Statewide Importance	Irrigated land similar to Prime Farmland that has a good combination of physical and chemical characteristics for the production of agricultural crops. This land has minor shortcomings, such as greater slopes or less ability to store soil moisture than Prime Farmland.	9 acres
Farmland of Local Importance	All farmable lands within Fresno County that do not meet the definitions of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. This includes land that is or has been used for irrigated pasture, dryland farming, confined livestock and dairy, poultry facilities, aquaculture and grazing land.	63 acres
Rural Residential	This includes residential areas of one to five structures per ten acres, farmsteads, small packing sheds, unpaved parking areas, composting facilities, firewood lots, campgrounds, and recreational water ski lakes.	35 acres
Vacant or Disturbed Land	This consists of open field areas that do not qualify for an agricultural category, mineral and oil extraction areas, and rural freeway interchanges.	42 acres

Sources: California Department of Conservation – Important Farmlands Map, 2004.

Williamson Act Contract Lands

The California Land Conservation Act of 1965, known as the Williamson Act, was created to protect agricultural and open space land from urban development. Under this program, landowners enter into contracts with participating counties and cities and agree to restrict the use of their land to agriculture or open space for a minimum of ten years. In exchange for this commitment, landowners are granted lower tax assessments based on the value of their land when used for agriculture or open space rather than the higher land values associated with urban uses (California Department of Conservation, 1989). As shown on Figure 5-1, one of the parcels within the project site is under a Williamson Act Contract. The parcel under contract consists of 20 acres and is located in the northwest quarter of the project site (APN 310-310-39).



Sources: USDA; Fresno Co. Assessor's Maps, Ca. Dept. of Conserv., CUSD, Paoli & Odell, Inc.

N

Scale: 1"=1/3 mile

Important Farmland, Ag Preserve Land & Soils

Figure 5-1

Twelve parcels within one-half mile of the project site are also under contract. Notices of non-renewal have not been filed on any of the above described parcels (Nimer, 2007). Pursuant to Government Code Section 51291(b), the Department of Conservation will be notified of the District's intent to acquire the parcel under Williamson Act Contract.

Significance Criteria

According to Appendix G of the State CEQA Guidelines, a project may be determined to have a significant effect on the environment if it would:

- Convert Prime Farmland, Farmland of Statewide Importance or Unique Farmland, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.
- Conflict with existing zoning for agricultural use, or a Williamson Act contract.
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use.

Significant Impacts and Mitigation Measures

Impact 5.1:

The project will convert approximately 11 acres of Prime Farmland and 9 acres of Farmland of Statewide Importance to non-agricultural use.

The project site consists of 160 acres, of which 11 acres have been identified as Prime Farmland and 9 acres have been identified as Farmland of Statewide Importance. This land is located in the northwest corner of the project site. Development of the project will result in the conversion of approximately 20 acres of important farmland to an educational facility use.

The project would contribute to the significant loss of Prime Farmland that has been occurring within Fresno County and throughout the San Joaquin Valley. The most recent information available from the California Department of Conservation's Farmland Mapping and Monitoring Program shows that over 12,000 acres of Prime Farmland within Fresno County alone were converted to non-agricultural uses during the period 2000-2004. The loss of this irreplaceable natural resource has continued, if not accelerated, since 2004 because of the rapid urbanization that has been occurring within the county and throughout the valley.

The project site is within the Southeast Growth Area designated in the *2025 Fresno General Plan*. The general plan EIR identified the loss of agricultural land resulting from implementation of the plan, including within the project site, as a significant and unavoidable impact. Consequently, when the general plan was approved, the City adopted findings of overriding considerations, which indicated that the significant unavoidable impacts resulting from plan implementation, including agricultural land conversion, were outweighed by the economic, social and other benefits of the plan. In essence, a land use policy decision was made that provided for conversion of the project site from agricultural to urban uses. This fact makes urban development within the project site likely regardless of whether this project is approved.

Nevertheless, the loss of Prime Farmland and Farmland of Statewide Importance that would result from the project is a significant and unavoidable impact.

Mitigation Measures

There are no mitigation measures that would prevent the loss of agricultural land within the project site if the project is implemented.

Level of Significance

This impact is considered significant and unavoidable.

Impact 5.2:

The project will conflict with existing agricultural operations, agricultural zoning and Williamson Act Contracts in its vicinity.

The project's presence would result in restrictions on the application of agricultural chemicals on adjacent farmlands; possible trespassing, littering and vandalism by students on the farmlands; and the potential for complaints about noise, dust, smoke, ash and odors generated by the agricultural operations.

The Fresno County Department of Agriculture regulates pesticide use by farmers and requires permits for the use of any restricted use pesticides. The permitting process takes into consideration the type of pesticide, the type of application, weather conditions and nearby land uses. The following Department of Agriculture conditions apply to the application of pesticides adjacent to school grounds (including the proposed project): (1) no pesticide application(s) are to occur within 1/8 mile of a school while school is in session or while the school grounds are occupied. (2) No pesticide with a worker safety re-entry interval greater than 48 hours shall be applied within 1/8 mile of a school during regular, summer, or night school sessions. In addition to the Department of Agriculture conditions, pesticide applicators must comply with any conditions/restrictions on the pesticide label that relate to applications(s) adjacent to school grounds.

The project site is within the Fresno County Department of Agriculture's "No Fly Zone," in which the aerial application of pesticides is prohibited under any circumstances (Plann, 2007).

Students have been known to trespass, litter, and commit acts of vandalism on farmland near schools. This has been more of a problem at the high school level than at other grade levels. The District currently has one high school located in an agricultural area, Clovis East High School. District administrators are not aware of any significant student-related trespassing, litter, or vandalism problems near this campus (Byrd, 2007).

Noise, dust, smoke, ash, or odors from nearby agricultural operations could result in nuisance- or health-related complaints from the project. Farmers could be forced to alter their farming practices in order to avoid such complaints.

The project site and surrounding land is agriculturally zoned and one parcel within the project site is under Williamson Act Contract. Twelve parcels within one-half mile of the project site are also under contract. Current agricultural zoning and Williamson Act contracts would be impacted to the extent the presence of the project and the potential for conflicts affects the

feasibility or desirability of continuing to farm in areas with the zoning and under contracts. However, the area is designated for urban development as part of the City of Fresno's Southeast Growth Area, and construction of the project would not occur for at least five to seven years. If the project was to be constructed prior to other anticipated urban development in the area, the project could serve as a catalyst for change in the area, both because the conflicts make continued farming less feasible and because the project's presence (including the urban services extended to serve it), make conversion of the land to an urban use more desirable.

Existing Regulations

See the description of Fresno County Department of Agriculture regulations under Impact 5.2.

Mitigation Measure

5.2 Currently, all District campuses are closed, except for high school seniors in good standing. The District shall continue to operate closed campuses unless the Board determines that modifications to this practice will not cause significant off-campus problems.

Level of Significance

The existing regulations and mitigation measures will be of benefit to the schools in terms of reducing potential nuisance or hazardous conditions, and will reduce the potential for trespassing and vandalism. However, the potential restrictions to nearby agricultural operations and the acceleration of adjacent agricultural land conversion are considered significant unavoidable impacts of the project.

Sources

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Chapter
6

Biological Resources

Setting

Introduction

This chapter describes the biotic resources of the 160.46-acre project site and evaluates likely impacts to these resources resulting from the construction of an educational center and associated facilities. This chapter is based upon a biotic evaluation prepared for the project site by Live Oak Associates, Inc. (*Biotic Evaluation, Clovis Unified Fourth Educational Center 160.46-acre parcel, Fresno County, California.* July 19, 2006, revised March 23, 2007).

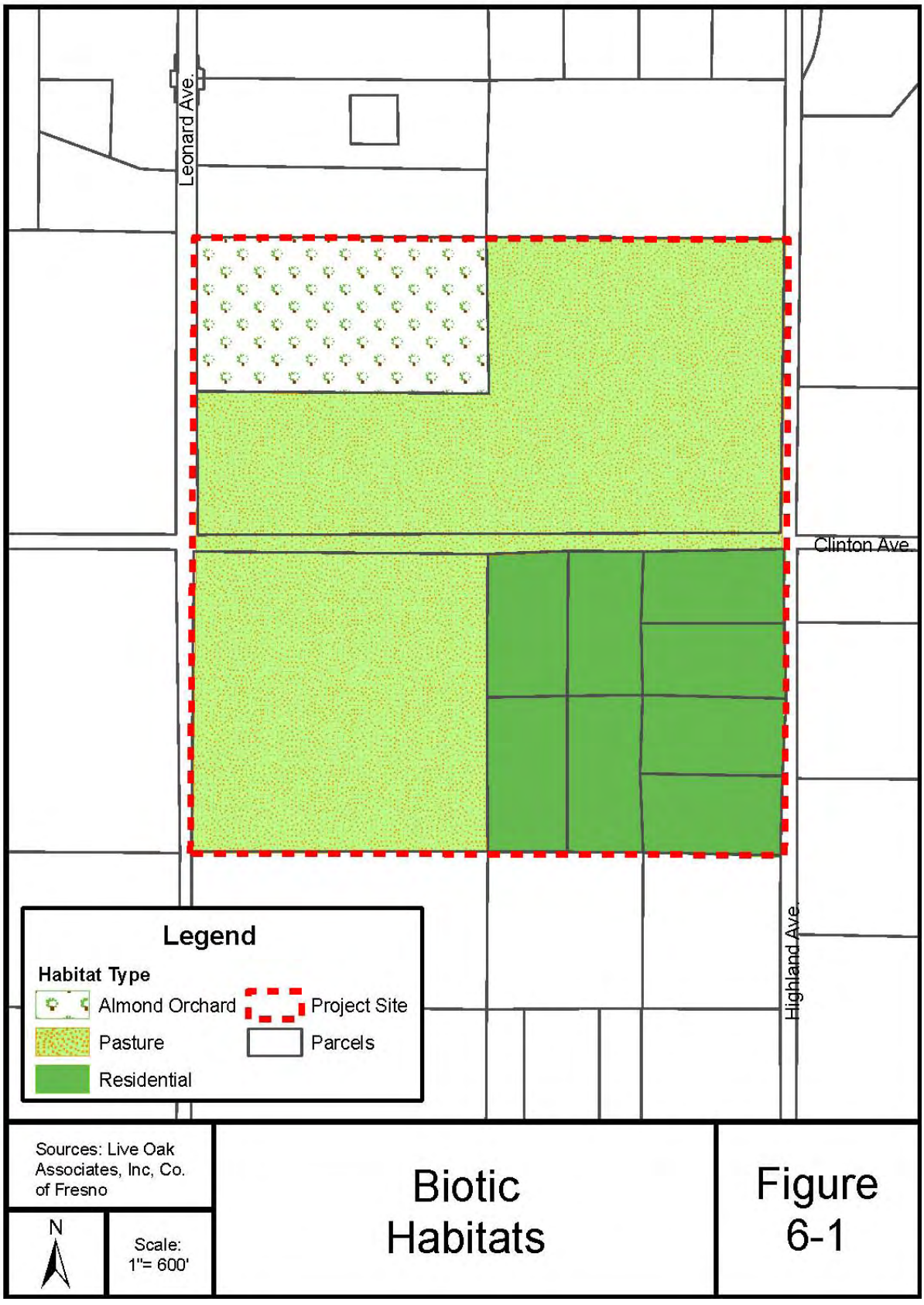
The information in this chapter is based upon a review of existing literature, interviews with individuals familiar with the flora and fauna of the project site and reconnaissance level field surveys. The existing literature reviewed for this analysis include the following: (1) the California Natural Diversity Data Base (CDFG 2006); (2) the Inventory of Rare and Endangered Vascular Plants of California (CNPS 2001); (3) miscellaneous other planning documents and biological studies from the general project vicinity. Additional information was gathered in the field by Principal and Senior Biologist, David Hartesveldt, during a field survey conducted on September 28, 2005. Additional surveys of the project site were conducted by LOA biologist Jeff Gurule on November 8, 2006 and March 21, 2007. Approximately 60 acres of the 160.46-acre site consists of a 20-acre almond orchard and single-family residence and eight 5-acre rural residential lots. Permission to enter these 60 acres in order to conduct a biological survey was not granted. Therefore, this part of the project site was observed from adjacent lands. A reconnaissance level field survey for jurisdictional waters was also completed at this time.

Biotic Habitats

Three biotic habitats/land-use types were identified on the site. These include non-native grassland pasture, an almond orchard, and residential (Figure 6-1). A list of the vascular plants observed on the site during the site visit is provided in Appendix 6-1. A list of terrestrial vertebrates using, or potentially using, the project site is provided in Appendix 6-2. Selected photographs of the project site can be found in Appendix 6-3.

Pasture

At the time of the field survey the majority of the project site consisted of unirrigated pasture for grazing cattle. This portion of the project site has historically been used as a repository for dredge tailings by the Fresno Metropolitan Flood Control District (FMFCD). However, vegetation appears to be well established in these pastures


Leonard Ave.
Clinton Ave.
Highland Ave.
Legend
Habitat Type
Almond Orchard
Pasture
Residential
Project Site
Parcels
Sources: Live Oak Associates, Inc, Co. of Fresno
N
Scale: 1"= 600'
Biotic Habitats
Figure 6-1

consisting primarily of non-native annual grasses as well as weedy native and non-native forbs. Common species included soft chess brome (*Bromus hordeaceus*), rat-tailed fescue (*Vulpia myuros*), vinegar weed (*Trichostemma lanceolata*), black mustard, (*Brassica nigra*), and rose clover (*Trifolium hirtum*). Two species of trees, Fremont cottonwood (*Populus fremontii*) and Texas umbrella tree (*Malia azerdach*) were also observed in the pasture. Each species was only represented by several individuals. The fence line supported a distinct community of annual grasses and weedy forbs. Common species along the fence line included Russian thistle (*Salsola tragus*), prickly lettuce (*Lactuca serriola*), wild oat (*Avena fatua*), smooth cats-ear (*Hypochaeris glabra*), and puncture-vine (*Tribulus terrestris*).

The pasture provides habitat for a number of animal species. Habitat for amphibians is limited due to a lack of moisture in the form of vernal pools, drainages or swales. The pasture could, however, be used by some reptile species. Common species likely to use the site include common side-blotched lizards (*Uta stansburiana*), western whiptails (*Aspidoscelis tigris*), gopher snakes (*Pituophis melanoleucus*), common kingsnakes (*Lampropeltis getulus*), and western rattlesnakes (*Crotalus viridis*).

Avian species can forage on seeds of annual grasses and weeds, and/or nest in the cover provided by tall spring grasses. Such species include house finches (*Carpodacus mexicana*), European starlings (*Sturnus vulgaris*), Brewer's blackbirds (*Euphagus cyanocephalus*) (observed), savannah sparrows (*Passerculus sandwichensis*), western meadowlarks (*Sturnella neglecta*) (observed), mourning doves (*Zenaida macroura*) (observed), American crow (*Corvus brachyrhynchos*) (observed), and common ravens (*Corvus corax*) to name just a few.

A number of raptor species (hawks and owls) may also use the pasture. Raptor species that may forage over the fields include the red-tailed hawk (*Buteo jamaicensis*) (observed), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), and American kestrel (*Falco sparverius*) (observed). Burrowing owls (*Athene cunicularia*) may also be found in pasturelands of the project site, although none were observed at the time of the field survey. These small owls commonly reside in California ground squirrel burrows observed on the site, where they could nest and seek shelter from predators. Invertebrates, reptiles, and small rodents in the pasture would provide a food supply as well.

Some small mammals may occur in the pasture of the site. Evidence of Botta's pocket gophers (*Thomomys bottae*) in the form of burrows and California ground squirrels (*Spermophilus beecheyi*) were observed on the margins of the pasture. Other small mammals using the pasture could include California voles (*Microtus californicus*), deer mice (*Peromyscus maniculatus*), and house mice (*Mus musculus*). Various species of bats may periodically forage over the pasture for flying insects, but would roost elsewhere. The pasture provides some habitat value to larger mammals known to occur regionally. Coyotes (*Canis latrans*) grey foxes (*Urocyon cinereoargenteus*), and striped skunks (Mephitis mephitis) hunt in grassland pastures of the area from time to time.

Orchard

Agricultural lands found on the project site consist of a 20-acre almond orchard. At the time of the field survey the orchard was kept fairly clear of weeds. Weedy vegetation observed in the orchard included prickly lettuce, mallow (*Malva sp.*), common sow-thistle (*Sanchus oleraceus*), common knotweed (*Polygonum arenastrum*), and puncture-vine.

The orchard provides little value to wildlife due to the sparse weedy vegetation and lack of diversity of tree species. The orchard does provide cover and limited foraging habitat for some species. Wildlife use of agricultural lands would generally be limited to a few avian species foraging in the trees or on the ground, and/or nesting in the cover provided by orchard trees. Such species include California scrub jays (*Aphelocoma californica*) (observed), house finches, European starlings, Brewer's blackbirds, and common crows, to name just a few. Although not observed, burrowing owls may be found residing in ground squirrel burrows at the margins of the orchard.

Small mammal activity in the orchard is likely diminished by regular maintenance. However, as mentioned, California ground squirrels burrows were observed in the orchard, mostly along the fence line separating the orchard from the pasture lands. The larger mammals using the pasture would be expected to occasionally make use of, or pass through the orchard.

Residential

A residence was located on the 20-acre almond farm along the middle of the northern bounds of the project site. Forty acres of residential land in the form of eight 5-acre lots was located in the southeastern quadrant of the project site. These five-acre residential lots were generally quite disturbed, either through historic agricultural practices, current small scale agriculture or animal rearing, or from the storage of junked vehicles or other debris. Although permission was not granted to survey these properties (including the almond orchard) information was gathered through a visual inspection from the property line and examination of aerial photos.

The vegetation in residential areas of the site consisted of much the same weedy non-native grasses and forbs found in other areas of the project site. However, unlike the pasture lands of the site, residential areas contained a number of well established non-native ornamental trees and shrubs as well as some native trees. Shrub species planted near residences included rhododendron (*rhododendron sp.*), juniper (*Juniperus sp.*), and rose (*Rosa sp.*). Ornamental trees have become established throughout the residential area, consisting of various eucalyptus species (*Eucalyptus sp.*), some of which are quite large, various non-native oak species (*Quercus sp.*), California sycamore (*Platanus racemosa*), coast redwood (*Sequoia sempervirens*), hemlock (*Tsuga sp.*), citrus (*Citrus sp.*), and olive (*Olea europaea*).

Residential areas of the site provide habitat for a number of animal species due to increased cover and additional moisture from irrigation of landscaped areas. Water accumulation in these areas provides likely habitat for pacific chorus frogs (*Pseudacris regilla*) and possibly western toads (*Bufo boreas*). Reptiles expected in residential areas

would be the same as those occurring in the pasture habitat, with the addition of western fence lizards (*Sceloporus occidentalis*) that would find ample habitat in various debris piles throughout this habitat. Residential landscaping was found to attract western scrub jays, northern mockingbirds (*Mimos polyglottos*), yellowrumped warblers (*Dendroica coronata*), and house finches. Many of the same mammals occurring in the rest of the project site would be expected in residential areas. In fact, given the additional cover and foraging opportunities provided by trees and shrubs in the residential areas, mammals may occur more frequently in residential areas. Small mammals typically found in rural residential areas include Botta's pocket gopher, Norway rats (*Rattus norvegicus*), and house mice. Medium size mammals expected in these areas include the striped skunk, raccoon (*Procyon lotor*), and Virginia opossum (*didelphis marsupialis*). Larger mammals such as coyotes and grey fox may also make use of residential areas. Bats of various species may roost in residential buildings and out-buildings and forage overhead.

Special Status Plants and Animals

Several species of plants and animals within the state of California have low populations, limited distributions, or the combination of the two. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully under the "Relevant Goals, Policies, and Laws" section of this chapter, state and federal laws have provided the California Department of Fish and Game (CDFG) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as threatened or endangered under state and federal endangered species legislation. Others have been designated as "candidates" for such listing. Still others have been designated as "species of special concern" by the CDFG. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened or endangered (CNPS 2001). Collectively, these plants and animals are referred to as "special status species".

A number of special status plants and animals occur in the vicinity of the project site. These species, and their potential to occur in the project site, are listed in Appendix 6-4. Sources of information for this table included *California's Wildlife, Volumes I, II, and III* (Zeiner et. al 1988), *California Natural Diversity Data Base* (CDFG 2005), *Endangered and Threatened Wildlife and Plants* (USFWS 2002), *Annual Report on the Status of California State Listed Threatened and Endangered Animals and Plants* (CDFG 2005), and *The California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2001).

Nine USGS quadrangles were searched in the California Natural Diversity Data Base, consisting of Clovis, Sanger, Malaga, Fresno South, Fresno North, Round Mountain, Academy, Friant, and Lanes Bridge. Special status species occurring within a 5-mile radius of the project site are shown in Appendix 6-5.

An expanded discussion on some special status species listed in Appendix 6-4 is in order, because of the ultimate influence their possible presence could have on future site plans.

Omitted from this expanded discussion are all the special status species that may be present on the site from time to time (or even regularly), but represent no appreciable constraint to site development, their presence notwithstanding.

California Tiger Salamander

The California Tiger Salamander (CTS) breeds in seasonal wetland pools, but spends most of the year aestivating in underground burrows provided by California ground squirrels or Botta's pocket gophers in nearby grasslands. On rainy nights from November to February adult CTS migrate from subterranean refugia to breeding pools (i.e. vernal pools) to mate and lay eggs. Human-made ponds are sometimes used for reproduction if predatory fish are absent, but flowing water in creeks is rarely used. After breeding and laying eggs adult CTS usually linger at breeding pools for a few days, but some individuals may stay a few weeks before returning to their underground refugia. After the CTS larvae mature, sometime in late spring or early summer, they disperse from shrinking breeding pools and migrate up to 1.6km to find their own aestivation sites (CDFG 2005).

The CTS is very unlikely to occur in the project site. The CTS has been documented in undisturbed grasslands containing seasonal pools six to eight miles northeast of the project site. CTS populations within this area are considered extant (CNDDB 2005). Lands surrounding the project site for a distance of several miles, however, no longer provide habitat for the CTS. These lands have been intensively farmed for many years. Possible CTS breeding and aestivation habitat have been either eliminated entirely, or degraded from grading, irrigation during the growing season, or agricultural pollutants. Redbank Creek to the site's north must be considered unlikely breeding habitat for the CTS as the species rarely uses flowing water sources for breeding. Additionally, the creek is likely home to predators such as bullfrogs and possibly fish.

The majority of the project site itself has been altered from the native terrain once present. The FMFCD has applied dredge tailings over the majority of the site. The remainder of the project site consists of an almond orchard and single-family residences. Past and on-going disturbance to the lands of the site and the surrounding area render them generally unsuitable for the CTS. This species is considered absent from the project site.

Western Spadefoot

The California Department of Fish and Game has listed the western spadefoot as a California Species of Special Concern. The western spadefoot's historic range was from Redding to northwestern Baja California. The spadefoot was found in California throughout the Central Valley, in the Coast Ranges, and in coastal lowlands from San Francisco Bay to Mexico. The spadefoot is generally found below 3,000 feet, but have been observed up to 4,500 feet (Jennings and Hayes 1994). Due to loss of habitat (vernal pools associated with chaparral, short grass plains, and coastal sage scrub) this species has been extirpated from many historic locations. Over the last 10 to 15 years, the spadefoot has been known to occur in Alameda, Butte, Calaveras, Fresno, Kern, Kings,

Los Angeles, Madera, Merced, Monterey, Orange, Placer, Riverside, Sacramento, San Benito, San Diego, San Joaquin, San Luis Obispo, Santa Barbara, Stanislaus, Tulare, Ventura and Yolo counties.

The western spadefoot typically breeds between January and May in seasonal ponds occurring in chaparral, short grass plains or coastal sage scrub. For the larvae to survive, development must be complete before the ponds dry. Mostly active at night, the spadefoot has adapted to digging in sandy soils and finding refuge in small rodent burrows to escape hot, arid daytime conditions. This species may aestivate (be inactive) for periods of eight to nine months, and may not reach maturity for two years.

For reasons stipulated in the previous section for the CTS, the western spadefoot is unlikely to occur onsite due to insufficient breeding and aestivation habitat.

Swainson's Hawk

The Swainson's hawk is a migrant species that spends much of the spring, summer, and early fall in California's Central Valley. Several years ago this species nested in a eucalyptus grove 18 miles northwest of the project site (CDFG 2005). There are no recent records of Swainson's hawks nesting near the project site. In fact, this species is rarely observed south of the San Joaquin River and east of the cities of Fresno and Clovis. Agricultural lands of the site provide limited foraging habitat for this species. While it is possible that this species occasionally forages on the project site, there is no evidence that it uses the site or surrounding lands.

Western Burrowing Owl

The western burrowing owl is a small owl that occurs in grassland habitats of the Central Valley. This owl seeks shelter in ground squirrel burrows throughout the year and breeds in these burrows from February through July. Owl populations have declined sharply in some portions of California during the past two decades (i.e. the San Francisco Bay Area, Sacramento County, San Joaquin County, etc.), but they have increased greatly in some agricultural counties (particularly Imperial). In Fresno and Madera Counties, these owls most commonly occur on the valley floor. They are not as common in foothill habitats, and are entirely absent from areas of oak woodlands and chaparral. No sign of this species were observed on the project site during the field survey. However, habitat suitable for this species in the form of ground squirrel burrows was present on the margins of the almond orchard and along fence lines.

San Joaquin Kit Fox

The San Joaquin kit fox once occurred throughout much of the San Joaquin Valley, but this species favored areas of alkali sink scrub and alkali grassland in the trough of the San Joaquin Valley and Tulare Basin, as well as areas further west. The low foothills of the Sierra Nevada found at the eastern edge of the San Joaquin Valley must at best be considered at the margin of their natural range. In fact, there is no record of anyone ever having seen a kit fox east of Highway 99 in Madera County, and only four unconfirmed sightings north and east of the cities of Fresno and Clovis in Fresno County. The nearest

confirmed record of a small kit fox population to the project site is western Madera County and the Visalia-Tulare area of Tulare County, both approximately 50 miles away.

There are four unverified sightings of kit fox in Fresno County from just south of the San Joaquin River south to Piedra (USFWS 1998). Two of these sightings are highly unlikely, since they appear to be at elevations of 1,000 to 2,000 feet in oak woodland habitat with a known brushy understory. This type of habitat is not known to be used by kit foxes. These two records must almost certainly be gray foxes (*Urocyon cinereoargenteus*). One sighting that is now 8 years old was from a location just east of Friant Road, about 10 miles from the project site. The fact that no one has reported any kit fox sightings before or since that 1994 sighting suggests that this individual, if indeed a kit fox, was a transient that had strayed far from known population centers. Another putative sighting was of kit fox pups near Piedra, but nothing is known about the circumstances of this sighting, or the ability of the observer to distinguish between kit fox pups and other canid pups (such as coyotes).

A number of kit fox surveys conducted in recent years have failed to turn up any evidence of this species in the Millerton and Friant area (the general area of the project site). Curt Uptain of the San Joaquin Valley Endangered Species Recovery team conducted a 3-day survey of the Millerton Specific Plan Area in 1997. He concluded at that time that the Specific Plan Area did not constitute good habitat for kit foxes, due to lack of suitable denning habitat and the abundance of predators (i.e. coyotes, bobcats, raptors, etc.). He reiterated his opinions during a reconnaissance field survey of the area in March of 2002 (Curt Uptain, pers. commun.). Live Oak Associates, Inc. conducted den surveys on portions of the Millerton Specific Plan Area in the spring of 2002, as well as on lands just north of the San Joaquin River in Madera County. These surveys included the use of camera stations and track plates wherever burrows were arguably of a size suitable for kit foxes. No evidence of kit foxes was detected during these surveys. Live Oak Associates, Inc. also conducted den surveys on River Ranch in Madera County without detecting any sign of kit foxes.

In October of 2003, Live Oak Associates, Inc. conducted a an extensive survey for the San Joaquin kit fox on lands fronting Friant Road in Fresno County. This study involved den surveys, photo stations, track plates, and night spotlighting. The results of these surveys persuaded the Federal Highway Administration that a kit fox population was absent from the area.

The project site provides little habitat for the San Joaquin kit fox, and there is no evidence that a kit fox population even occurs in this part of Fresno County. As previously noted, the site and surrounding lands are primarily made up of disturbed lands that provide at most marginal denning and foraging habitat.

Jurisdictional Waters

Jurisdictional waters include rivers, creeks, drainages with a defined bed and bank that may carry at most ephemeral flows, lakes, ponds, reservoirs, and wetlands. Such waters may be subject to the regulatory authority of the U.S. Army Corps of Engineers

(USACE), the California Department of Fish and Game and the California Regional Water Quality Control Board.

No wetland or drainage features that might be considered jurisdictional waters were present at the time of the field survey. Furthermore, no portion of the project site appeared to meet the vegetation, soils, or hydrology criteria of jurisdictional wetlands.

Relevant Goals, Policies, and Laws

Threatened and Endangered Species

State and federal "endangered species" legislation has provided the California Department of Fish and Game (CDFG) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Species listed as threatened or endangered under provisions of the state and federal endangered species acts, candidate species for such listing, state species of special concern, and some plants listed as endangered by the California Native Plant Society are collectively referred to as "species of special status". Permits may be required from both the CDFG and USFWS if activities associated with a proposed project will result in the "take" of a listed species. "Take" is defined by the state of California as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" (California Fish and Game Code, Section 86). "Take" is more broadly defined by the federal Endangered Species Act to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3). Furthermore, the CDFG and the USFWS are trustee agencies under the California Environmental Quality Act (CEQA). Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

Migratory Birds

Most birds are also protected by state and federal law. The Federal Migratory Bird Treaty Act (FMBTA: 16 U.S.C., scc. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

Birds of Prey

Birds of prey are also protected in California under provisions of the State Fish and Game Code (Section 3503.5, 1992), which states that it is "unlawful to take, possess, or destroy any birds in the order *Falconiformes* or *Strigiformes* (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFG.

Wetlands and Other "Jurisdictional Waters"

Natural drainage channels and wetlands are considered "Waters of the United States" (hereafter referred to as "jurisdictional waters"). The filling or grading of such waters is regulated by the U.S. Army Corps of Engineers (USACE) by authority of Section 404 of the Clean Water Act (Wetland Training Institute, Inc., 1991). The extent of jurisdiction within drainage channels is defined by "ordinary high water marks" on opposing channel banks. Wetlands are habitats with soils that are intermittently or permanently saturated, or inundated. The resulting anaerobic conditions select for plant species known as hydrophytes, which show a high degree of fidelity to such soils. Wetlands are identified by the presence of hydrophytic vegetation, hydric soils (soils saturated intermittently or permanently saturated by water), and wetland hydrology according to methodologies outlined in the 1987 Corps of Engineers Wetlands Delineation Manual (USACE, 1987).

All activities that involve the discharge of fill into jurisdictional waters are subject to the permit requirements of the USACE (Wetland Training Institute, Inc. 1991). Such permits are typically issued on the condition that the applicant agrees to provide mitigation, which results in no net loss of wetland functions or values. No permit can be issued until the Regional Water Quality Control Board (RWQCB) issues a certification (or waiver of such certification) that the proposed activity will meet state water quality standards. The RWCQB is also responsible for enforcing National Pollution Discharge Elimination System (NPDES) permits, including the General Construction Activity Storm Water Permit. All projects requiring federal money must also comply with Executive Order 11990 (Protection of Wetlands).

The California Department of Fish and Game has jurisdiction over the bed and bank of natural drainages according to provisions of Section 1601 and 1603 of the California Fish and Game Code (California Department of Fish and Game, 1995). Activities that would disturb these drainages are regulated by the CDFG via a Streambed Alteration Agreement. Such an agreement typically stipulates that certain measures will be implemented which protect the habitat values of the drainage in question.

Significance Criteria

Based upon Appendix G of the State CEQA Guidelines, a project may be determined to have a significant effect on the environment if it would:

- 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;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- 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; or

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Significant Impacts and Mitigation Measures

Impact 6.1:

Project construction may result in direct mortality of special status raptors, Loggerhead Shrike, non-listed raptors, and various other bird species.

Project construction may result in direct mortality of a number of special status animal species. Mortality could occur from grading that eliminates habitat in which these species currently reside, from construction activities that crush or bury individuals, or by nest destruction or nest abandonment caused by tree or building removal or construction activity adjacent to active nests. Possible direct mortality is discussed below:

Special status raptors, Loggerhead Shrike, non-listed raptors, and various other bird species. Most birds are protected under the Federal Migratory Bird Treaty Act or the State Fish and Game Code. Based on observations made during the field survey, it is clear that the many onsite trees provide abundant habitat for a number of bird species, including raptors. White-tailed kites, Cooper's hawks, and loggerhead shrikes could nest in onsite trees. Furthermore, these trees as well as onsite buildings provide likely breeding habitat for a number of resident and migratory birds. In the event that raptors or other migratory birds were to nest on the site immediately prior to the onset of construction, construction activities during the nesting season (typically, February through August) could result in nest abandonment and/or direct mortality to these birds. Construction activities having these effects would constitute a violation of federal and state laws. Nest destruction or abandonment and mortality of birds would be considered significant adverse impacts.

Mitigation Measures

Mitigation measures for possible project impact to nesting special status raptors and loggerhead shrikes include the following:

6.1(a) A pre-construction survey will be conducted by a qualified biologist for nesting raptors within 30 days prior to the on-set of construction or tree removal, if tree removal is to occur during the nesting season (February through August) or construction activity occurs within 250 feet of onsite trees during the nesting season.

6.1(b) If pre-construction surveys undertaken during the breeding season (February through August) locate active nests within or near construction zones, these nests, and an appropriate buffer around them (as determined by a qualified biologist) would remain off-limits to construction until the breeding season is over. Construction setbacks of 250 feet (or more) from occupied nests could be required.

Level of Significance

This impact will be less than significant with the incorporation of the mitigation measures.

Impact 6.2:

Project construction may result in direct mortality of Western Burrowing Owls.

As noted in Appendix 6-4, neither the western burrowing owl nor its sign were observed on any portion of the project site. Potential nesting habitat was present in the form of California ground squirrel burrows along the margins of the pasture and almond orchard. It is possible that burrowing owls could have occurred on site at the time of the site visit, because a focused survey for this species was not conducted. Furthermore, burrowing owls, even if not currently present, could move into ground squirrel burrows of the project site at some time in the future. Site development could result in disturbance to nest burrows established subsequent to the last site survey conducted in the spring of 2007. Such disturbance would be a violation of California Fish and Game Code and the federal Migratory Bird Treaty Act.

Mitigation Measures

6.2(a) A pre-construction survey will be conducted by a qualified biologist for burrowing owls within 30 days prior to the on-set of construction. This survey will be conducted according to methods described in the Staff Report on Burrowing Owl Mitigation (CDFG 1995), which is standard for all burrowing owl surveys in California.

6.2(b) If pre-construction surveys undertaken during the breeding season (February through July) locate active nest burrows within or near construction zones, these nests, and an appropriate buffer around them (as determined by a qualified biologist) would remain off-limits to construction until the breeding season is over. Setbacks from occupied nest burrows of 100 meters or more could be required where construction would also result in the loss of foraging habitat.

6.2(c) During the non-breeding season (August through January), resident burrowing owls may be relocated to alternative habitat. The relocation of resident owls must be according to a relocation plan prepared by a qualified biologist. Passive relocation would be the preferred method of relocation. This plan would provide for the owls relocation to nearby lands possessing available nesting and foraging habitat. Relocation only applies to burrowing owls, which may be resident in their nest burrows after the breeding season is over.

Level of Significance

This impact will be less than significant with the incorporation of the mitigation measures.

Impact 6.3:

Project construction may result in direct mortality of California Horned Lark.

The grassland pasture of the site provides suitable nesting and foraging habitat for the California horned lark. Project construction during the nesting season could result in

mortality to nestlings. Such disturbance would be a violation of California Fish and Game Code and the federal Migratory Bird Treaty Act.

Mitigation Measures

6.3(a) If construction is to occur during the nesting season (March through July), a pre-construction survey will be conducted by a qualified biologist for nesting horned larks within 30 days prior to the on-set of construction. The area of this pre-construction survey will include all areas within 250 feet of construction activity.

6.3(b) If pre-construction surveys undertaken during the breeding season locate active nests within or near construction zones, these nests, and an appropriate buffer around them (as determined by a qualified biologist) will remain off-limits to construction until the breeding season is over. Construction setbacks of 250 feet (or more) from occupied nests could be required.

Level of Significance

This impact will be less than significant with the incorporation of the mitigation measures.

Impact 6.4:

Project construction may result in direct mortality of various bat species.

Although some bat species would only forage over the site, some may establish maternal roosts in tree cavities or buildings from early March through August. One tree, an old hollowed Fremont cottonwood along the southern section of the eastern fence line, plus residential and farm buildings in the 60 acres of privately owned land may provide maternal roosting habitat for bats. If this habitat is removed during the maternal roosting season, mortality of perhaps hundreds of juvenile bats could occur. Such mortality could have a significant impact on regional populations of these species. This possibility constitutes a potentially significant adverse environmental impact as defined by CEQA and constitutes a violation of California Fish and Game Code.

Mitigation Measures

6.4(a) A pre-construction survey will be conducted by a qualified biologist for maternal bat roosts within 30 days prior to the on-set of construction, if construction is to occur during the maternal roosting season (March through August) and would occur within 250 feet of buildings potentially used as maternal roosting sites for bats.

6.4(b) If pre-construction surveys undertaken during the breeding season (March through August) locate active maternal roosts within or near construction zones, these roosts, and an appropriate buffer around them (as determined by a qualified biologist) would remain off-limits to construction until the breeding season is over. Construction setbacks of 250 feet (or more) from occupied roosts could be required.

Level of Significance

This impact will be less than significant with the incorporation of the mitigation measures.

Impacts Not Found to be Significant

Impact 6.5:

The project may result in the loss of foraging habitat for special status animal species.

Nine special status species may forage in the project site from time to time but breed or roost in offsite habitats. Breeding habitat for these species is either not present on the site, or is of marginal suitability. For example, there is no breeding habitat on site for prairie falcons, northern harriers, ferruginous hawks, tri-colored blackbirds, etc., but all these species may occasionally forage on the site. Additionally, three special status bat species could occasionally forage on the site and retreat to roosts located off site. The site does not provide regionally important foraging habitat for any of these species. Site development will result in at most the loss of a minor amount of foraging habitat. This impact is considered to be less than significant.

Mitigation Measures

Because the project would have a less than significant impact on nine special status animal species that would only forage on the site, mitigation measures are not considered warranted.

Level of Significance

This impact is considered less than significant.

Impact 6.6:

The project may result in the loss of breeding habitat for special status animal species.

The site provides possible breeding habitat for six special status species. The California horned lark may use the grasslands of the dry pasture for breeding and foraging; the western burrowing owl may use existing ground squirrel burrows for nesting and grasslands of the pasture for foraging; the white-tailed kite and loggerhead shrike may nest in an old Fremont's cottonwood on site and forage in onsite pasturelands; the pallid bat may utilize the cottonwood or onsite buildings as maternal roosting sites; and the American badger may reside in onsite pasturelands where it would breed and forage. Site development will result in at most the loss of a minor amount of regionally available breeding habitat for these species with little or no effect on regional populations. This impact is considered to be less than significant.

Mitigation Measures

Because the project would have a less than significant impact on breeding habitat for six special status animal species, mitigation measures are not considered warranted.

Level of Significance

This impact is considered less than significant.

Impact 6.7:

The project may interfere with the movement of native wildlife.

Although many species potentially move within and through the project site, the site does not appear to constitute a "movement corridor" for native wildlife or fish species. Some migratory species that now pass through the project site are birds that are likely to pass through or over the site even when it is eventually developed. However, site development will have an adverse effect on home range and dispersal movements of native wildlife currently using habitats on site. In fact, as undeveloped open space on the outskirts of Fresno and Clovis is gradually converted to residential and commercial development, wildlife movements now occurring in this area will be greatly modified. Nonetheless, the project site cannot be considered a significant wildlife movement corridor as the lands to the south, southwest, and west are already greatly modified from agricultural and residential development. The site no longer possesses the intrinsic values that would attract or facilitate significant regional wildlife movements. Thus, the project would result in a less than significant adverse impact on such movements.

Mitigation Measures

Because this project will result in a less than significant effect on regional wildlife movements, mitigation measures are not considered warranted.

Level of Significance

This impact is considered less than significant.

Impact 6.8:

The project will eliminate habitat used by wildlife and certain special status species.

Site development will eliminate no habitat utilized by any fish species but will eliminate habitat used by a number of wildlife species including certain special status species. However, the proposed project will not substantially reduce habitat used by these animal species such that their populations would drop below a self-sustaining level. Because the loss of wildlife habitat associated with site development will not threaten the survival of any fish or wildlife population nor eliminate or threaten any animal community, project impact is considered less than significant.

Mitigation Measures

Because this project will by itself have a less than significant effect on habitat for native fish and wildlife occurring in this portion of Fresno County, mitigation measure are not considered warranted.

Level of Significance

This impact is considered less than significant.

No Impacts

The project site provides unsuitable habitat for special status plant species.

Eighteen special status animals would not occur or would be unlikely to occur in the study are due to the absence of suitable habitat. For example, vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetles, Fresno kangaroo rat, etc., would not occur on the site due to the absence of suitable habitat. Eventual site development would have no effect on these 18 species, because there is little or no likelihood that they are present on the project site.

No migrant or transient special status species are expected to use the project site. The project will have no impact on these species.

No riparian or sensitive natural communities were present on the project site. The proposed project will have no impact on these habitats.

No federally protected wetlands were present on the project site. The proposed project will have no impact on federally protected wetlands.

The project appears to be consistent with General Plan Policies of Fresno County relevant to natural resource protection.

Sources

This chapter is based on the following report:

Live Oak Associates, Inc. *Biotic Evaluation, Clovis Unified Fourth Educational Center, 160.46-Acre Parcel, Fresno County, California.* July 19, 2006, revised March 23, 2007.

Sources cited by Live Oak Associates are as follows:

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Zeiner, David C., William F. Laudenslayer, Kenneth E. Mayer and Marshal White. Ed. *California's wildlife, volume III, mammals.* Department of Fish and Game. Sacramento, CA. 1988

Chapter 7

Cultural Resources

Setting

Introduction

This chapter identifies cultural resources that may be impacted by the project. This chapter is based primarily upon a report prepared for the project site by C. Kristina Roper, M.A., RPA, Sierra Valley Cultural Planning (*A Cultural Resources Assessment for Clovis Unified Fourth Educational Center, City of Clovis, Fresno County, California.* November 2005).

Record Survey Results

Prior to field inspection, a record search was conducted at the Southern San Joaquin Valley Information Center of the California Historical Resources Information System at Cal State Bakersfield to identify areas previously surveyed and identify known cultural resources present within or in close proximity to the project site. According to the Information Center records, no cultural resources have been identified within the project site, nor has the project site been previously surveyed. Six surveys have been conducted within a ½-mile radius of the present project site. No cultural resources have been identified within a ½-mile radius of the project site.

There are no known resources within or immediately adjacent to the project site that are listed on the National Register of Historic Places, California Points of Historical Interest, State Historic Landmarks, or the California Inventory of Historic Resources. A request was sent to the Native American Heritage Commission asking for a review of information on file pertaining to Native American sacred sites that may be within or in close proximity to the project site. A search of the sacred land files failed to indicate the presence of Native American cultural resources in the immediate project site.

Ethnographic Summary

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 site falls within the outlying territory of the *Pitkachi* Yokuts. 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). No village or other named sites are identified within one mile radius of the project site. 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 (1978) for additional information on pre-contact Yokuts subsistence and culture.

Historic Period Summary

The San Joaquin River area was visited in the early 1800s by Spanish expeditions exploring the interior in search of potential mission sites. The Pico (1826) and Rodriguez (1828) expeditions may have passed through Pitkachi territory. 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 San Joaquin, 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 (Phillips 1993:94).

Euro American 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 settlement of the City of Fresno in the 1870s concentrated population several miles south of the San Joaquin River.

Prior to the last decades of the twentieth century, land use in the vicinity of the project site was limited to agricultural use. The town of Clovis, founded in the 1880s, began as a lumber town, although agriculture soon came to dominate after the turn of the century. Tracts were laid out and acreage was sold. The present project site was part of the Kutner Colony, named after Fresno businessman Adolph Kutner. Clovis presently forms the eastern portion of the larger Fresno-Clovis metropolitan area. Residential uses are currently expanding into the project site vicinity.

Methods and Findings

On October 26, 2005, C. Kristina Roper, M.A., RPA, of Sierra Valley Cultural Planning conducted a cultural resources survey of the project site. A second survey was conducted on March 15, 2007 to investigate a 40-acre area that was subsequently added to the project site. The approximate 160-acre project site was intensively inspected using 25-meter-spaced transects. Surface visibility within the project site was fair to good, the ground surface being somewhat obscured by grasses, although numerous rodent excavations allowed inspection of subsurface soils. No artifacts or concentrations of prehistoric debris suggesting intensive use or occupation were identified in the project site. No structures or features of any sort other than stock-related water troughs were situated within the project site.

Based on the lack of surface evidence of cultural resources within the project site, it is unlikely that the proposed educational center will have an effect on important archaeological resources or other cultural resources. No further archaeological investigation therefore is recommended for the project site.

As a result of deposition of sediments within the project site by the Fresno Metropolitan Flood Control District, surface evidence of older living surfaces and activity areas may have been obscured and are thus not detectable through surface inspection. In the unlikely

event that unanticipated buried archaeological deposits are encountered during project-related activities, work in the immediate vicinity of the discovery should cease until the finds can be evaluated by a qualified archaeologist. Should human remains be encountered within the project site, the County Coroner should be contacted immediately; if the remains are determined to be Native American, then the Native American Heritage Commission should be contacted as well.

Significance Criteria

Based upon Appendix G of the State CEQA Guidelines, a project may be determined to have a significant effect on the environment if it would

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- Disturb any human remains, including those interred outside of formal cemeteries.

Significant Impacts and Mitigation Measures

Impact 7.1:

Project construction activities could result in the loss of subsurface cultural or paleontological resources from the project site

Although no cultural or paleontological resources were discovered on the surface of the project site, subsurface resources may be present that could be disturbed or damaged by construction activities. These resources might include tools or weapons from a gathering or hunting site, or a cache of artifacts, which could provide important time, territory, and cultural pattern markers in the reconstruction of prehistory and history. Fossilized animal remains could also be discovered.

Mitigation Measures

7.1(a) All contractors and subcontractors for the project shall be informed, in writing, of the possibility that cultural or paleontological resources may be discovered during project activities. If any cultural or paleontological materials are uncovered during project activities, work in the area or any area reasonably suspected to overlie adjacent remains shall halt until a professional evaluation and/or data recovery excavation can be planned and implemented. Appropriate measures to protect remains from accidents, looting, and vandalism shall be implemented immediately.

7.1(b) After they have been professionally recorded in their place of discovery, archaeological or paleontological materials shall be transferred to an appropriate regional repository for preservation, research, and/or use in interpretive exhibits.

7.1(c) If human remains are discovered, the Fresno County Coroner must be notified immediately. The Coroner has two working days to examine the remains and 24 hours to notify the Native American Heritage Commission (NAHC) if the remains are Native American (Health and Safety Code Section 7050.5). Once the NAHC is notified, the procedures set forth in CEQA Guidelines Section 15064.5(d) and Public Resources Code Section 5097.98 shall be followed.

Level of Significance

This impact will be less than significant with the incorporation of the mitigation measures.

No Impact

Based upon the cultural resources records and field research conducted for this EIR, the project would not directly or indirectly impact a historical resource because none were identified in the project site.

Based upon field research conducted for this EIR, the project would not directly or indirectly impact a unique geologic feature because none exist in the project site.

Sources

This chapter is based upon the following report:

Roper, C. Kristina, M.A. RPA., Sierra Valley Cultural Planning. *A Cultural Resources Assessment for Clovis Unified Fourth Educational Center, City of Clovis, Fresno County, California.* November 2005 (Amended March 2007).

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Chapter 8

Aesthetics

Setting

Visually, the project study area is in a rural, agricultural setting. This setting does not constitute a unique scenic vista because it is common throughout the central San Joaquin Valley.

No designated scenic highways exist in the project vicinity.

Existing sources of light near the project study area include traffic on the adjacent streets and the scattered rural residences in the area.

Significance Criteria

Based upon to Appendix G of the State CEQA Guidelines, a project may be determined to have a significant effect on the environment if it would:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Significant Impacts and Mitigation Measures

Impact 8.1:

The project will alter the existing rural and agricultural visual environment

Although the project will be professionally designed and landscaped and will contain substantial open space, the visual character of site will be substantially altered by the establishment of a large educational facility on the site. Instead of appearing to be agricultural and rural in character, the project site will take on a more urban appearance. Therefore, the visual impact of the project will likely be considered significant by those accustomed to the rural and agricultural visual environment.

Mitigation Measures

Although the project site will be professionally designed and landscaped and will contain substantial open space, the alteration of the visual environment from rural to a large educational facility cannot be mitigated.

Level of Significance

This impact is considered significant and unavoidable.

Impact 8.2:

The project will create a potential for litter and graffiti

As with any educational facility, the proposed project will create a potential for litter and graffiti, both on the project site and on nearby properties. Litter and graffiti can alter the visual landscape in ways normally judged unsightly by the community.

The District has been successful in maintaining the appearance of its facilities. Schools are maintained free of litter and any graffiti is painted over the same day it is found. The District also maintains closed campuses, which minimizes the potential for detrimental student activities off-campus during school hours.

Mitigation Measure

8.2(a) The District shall properly clean and maintain the school facilities, and shall support, encourage, and facilitate programs that encourage or require students keep the campus and surrounding environs clean.

8.2(b) Currently, all District campuses are closed, except for high school seniors in good standing. The District shall continue to operate closed campuses unless the Board determines that modifications to this practice will not cause significant off-campus problems.

8.2(c) The District shall provide security personnel to patrol the site and adjacent parking areas before, during and after the football games to discourage littering, graffiti writing and other undesirable activities.

Level of Significance

This impact will be less than significant with the incorporation of the mitigation measures.

Impact 8.3:

The project will increase light and glare in the project vicinity

Campus buildings and parking areas will be lighted in the evenings for the safety and security of the students and staff. In addition to the stadium, the project may include lighted recreational facilities, such as baseball and softball diamonds, multi-purpose athletics fields and play courts.

The stadium will have state of the art lighting facilities that will allow the field to be well-lighted while minimizing the effect of the lights on any adjacent area. The field will be designed per the Illuminating Engineering Society's Recommended Practice for Sports and

Recreational Area Lighting, RP-6-01. This document provides recommendations for illumination criteria and key elements in design considerations that are necessary in achieving a quality lighting design and installation for the particular activity. Through specialized knowledge of the IES Sports Lighting Committee and in concert with a number of national and professional sports organizations, this Practice is a state of the art publication in engineering practice, taking into consideration the latest technology for the lighting of sports facilities.

The system design will pay particular attention to the effects of light spill and glare, and the lighting fixtures will be specified with appropriate internal spill/glare optics and beam distribution patterns that will minimize the effects of any light that is not directed to the field itself.

Mitigation Measures

The project shall be designed to minimize potential lighting and glare impacts, as follows:

8.3(a) Stadium field lighting shall be designed in accordance with the current Illuminating Engineering Society's Recommended Practice for Sports and Recreational Area Lighting, in effect at the time of design.

8.3(b) Stadium field lighting, recreation facility lighting and security lighting for the buildings and parking areas shall be designed and oriented to minimize any impacts on adjacent property. Light spill resulting from any project lighting shall not exceed 1.5 footcandles at the property line.

8.3(c) All parking area lighting shall be full cut-off type fixtures. A full cut-off type fixture is a luminaire or light 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.

8.3(d) 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 be shielded to prevent direct glare and/or light trespass. The lighting shall also be, as much as physically possible, contained to the target area.

8.3(e) Exterior building lighting for building or security or aesthetics shall be full cut-off or a shielded type designed to minimize any upward distribution of light.

Level of Significance

This impact will be less than significant with the incorporation of the mitigation measures.

Impacts Not Found to Be Significant

No Impact

The project is not within or adjacent to a state scenic highway. Therefore, it would not damage scenic resources in relation to a scenic highway.

Sources

California State Department of Transportation, Office of State Landscape Architecture. Officially *Designated State Scenic Highways* and *Officially Designated County Scenic Highways*. [On-line], http://www.dot.ca.gov/hq/LandArch/scenic/cahisys.htm.

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Chapter 9

Traffic

Setting

Introduction

Traffic-related impacts associated with the project are identified in this chapter based upon a report prepared for this EIR by Peters Engineering Group (*Traffic Impact Study, Proposed Fourth Educational Center, Clovis Unified School District* – May 2, 2007).

Study Area and Scenarios

The study locations were determined based on the anticipated project traffic distribution and the proximity of the intersections to the site. This chapter includes analysis of the following road segments:

- Leonard Avenue between Ashlan Avenue and McKinley Avenue;
- Highland Avenue between Ashlan Avenue and McKinley Avenue;
- DeWolf Avenue between Dakota Avenue and Olive Avenue;
- Fancher Avenue between McKinley Avenue and Belmont Avenue;
- Shields Avenue between Locan Avenue and Highland Avenue;
- McKinley Avenue between Temperance Avenue and McCall Avenue;

The study time periods include the weekday a.m. and p.m. peak hours determined between 7:00 and 9:00 a.m. and between 4:00 and 6:00 p.m.

The approach agreed upon by the reviewing agencies[1] for the traffic impact study is to provide baseline information and evaluations of the project in the Program EIR and to prepare full project-specific traffic impact studies once the City of Fresno has defined the land uses and major street system for the Southeast Growth Area and once the project development phases are near initiation. As such, for purposes of the current study, the peak hours were to be analyzed for the following conditions:

[1] County of Fresno, City of Fresno, City of Clovis, Caltrans

- Existing Conditions;
- Cumulative Conditions Without Project (Year 2025); and
- Cumulative Conditions With Project (Year 2025).

For existing conditions, this chapter defines the existing street and traffic conditions in the project vicinity, the conceptually planned major street system, and existing traffic volumes.

For project impacts, this chapter provides projected trip generation and distribution information. Since the site plan for the project is not defined and the site driveway locations are not known, this chapter does not evaluate access to the project site.

Existing and Planned Lane Configurations

Table 9-1 presents the study road segments, identifies the City sphere of influence in which the road segment is located, the County and City road designation, the number of existing lanes, and the number of planned lanes. The information presented in Table 9-1 is based on Figure TR-1b of the Fresno County General Plan, Appendix G Concept Land Use and Circulation Map for the Southeast Growth Area of the City of Fresno General Plan, and the Circulation Plan of the City of Clovis General Plan.

Table 9-1 Existing and Planned Lane Configurations

Road	Segment	SOI	Designation		Number of Lanes	
			County	City	Existing	Planned
Leonard Avenue	Ashlan to Gould Canal	Clovis	n/a	Arterial	2 U	4 D
Leonard Avenue	Gould Canal to McKinley	Fresno	n/a	Arterial	2 U	4 D
Highland Avenue	Ashlan to Gould Canal	Clovis	n/a	Collector	2 U	4 U
Highland Avenue	Gould Canal to McKinley	Fresno	n/a	Collector	2 U	4 U
DeWolf Avenue	Dakota to Gould Canal	Clovis	n/a	Collector	2 U	4 U
DeWolf Avenue	Gould Canal to Olive	Fresno	n/a	Collector	2 U	4 U
Fancher Avenue	McKinley to Belmont	Fresno	n/a	Collector	2 U	4 U
Shields Avenue	Locan to Highland	Fresno	Arterial	Arterial	2 U	4 D
McKinley Avenue	Temperance to McCall	Fresno	n/a	Arterial	2 U	4 D

It is understood that City of Fresno staff does not expect that a diagonal roadway connecting Leonard Avenue and DeWolf Avenue will actually be constructed as illustrated in the City of Fresno's Concept Land Use and Circulation Map for the Southeast Growth Area. Instead, for purposes of this report it is assumed that Leonard Avenue will be designated as an arterial between Shields and McKinley Avenues.

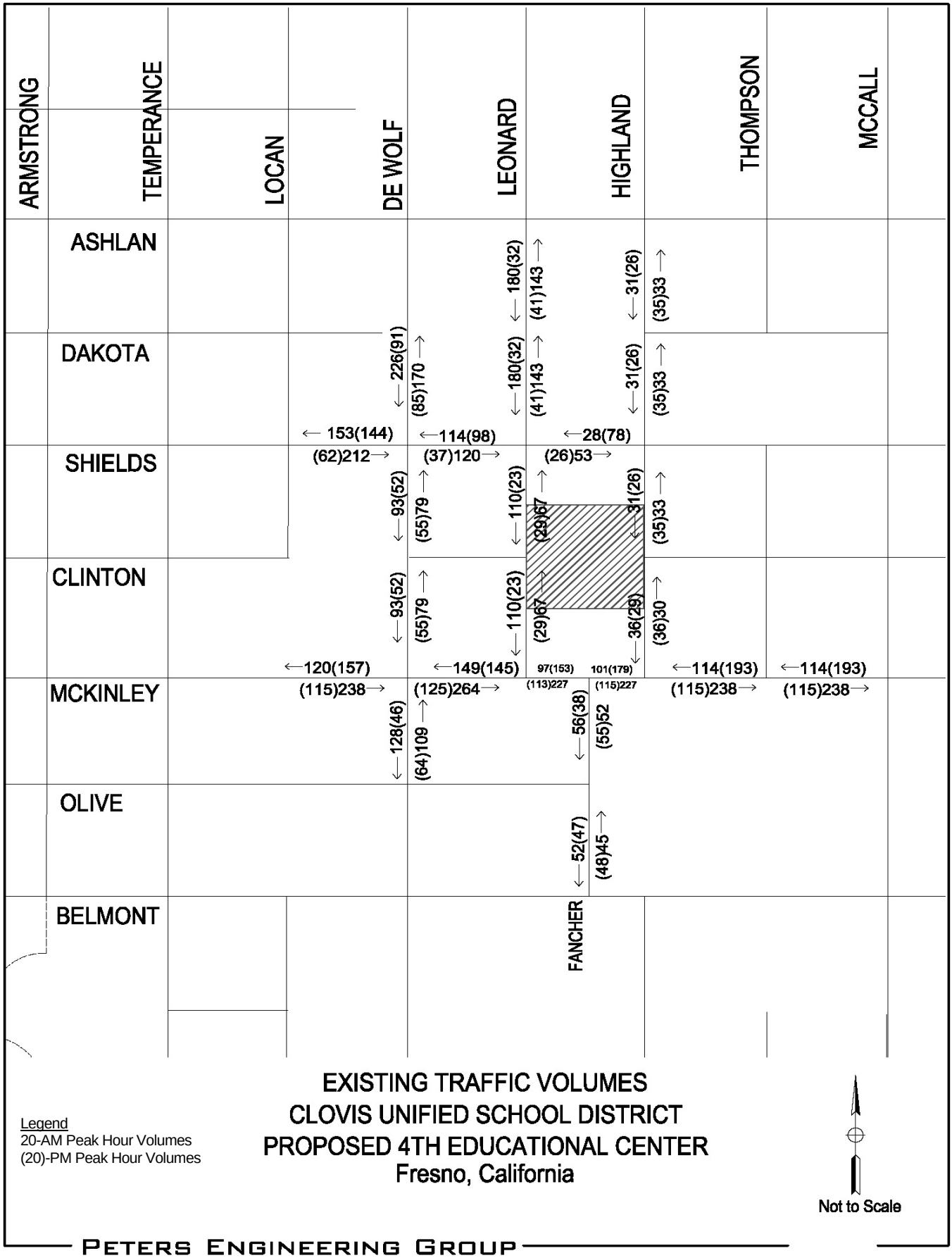
Existing Traffic Volumes

Existing traffic volumes were determined by performing 24-hour machine counts on the study road segments. The traffic counts were performed by the independent traffic counting firm of Southland Car Counters. The data sheets are presented in Appendix 9-1 and include the dates the counts were performed. The peak hour road segment volumes on each of the study road segments are presented in Figure 9-1.

Significance Criteria

Based upon Appendix G of the State CEQA Guidelines, a project may be determined to have a significant effect on the environment if it would:

- Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections);
- Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways;
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in locations that results in substantial safety risks;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access; or
- Result in inadequate parking capacity.



EXISTING TRAFFIC VOLUMES
CLOVIS UNIFIED SCHOOL DISTRICT
PROPOSED 4TH EDUCATIONAL CENTER
Fresno, California

Legend
20-AM Peak Hour Volumes
(20)-PM Peak Hour Volumes

Not to Scale

PETERS ENGINEERING GROUP

FIGURE 9-1

Significant Impacts and Mitigation Measures

Impact 9.1:

The project will cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system.

Project Trip Generation

Data provided in the Institute of Transportation Engineers (ITE) Trip Generation, 7th Edition, were used to estimate the number of trips anticipated to be generated by the project based on the number of students. The project trip generation information is presented in Table 9-2.

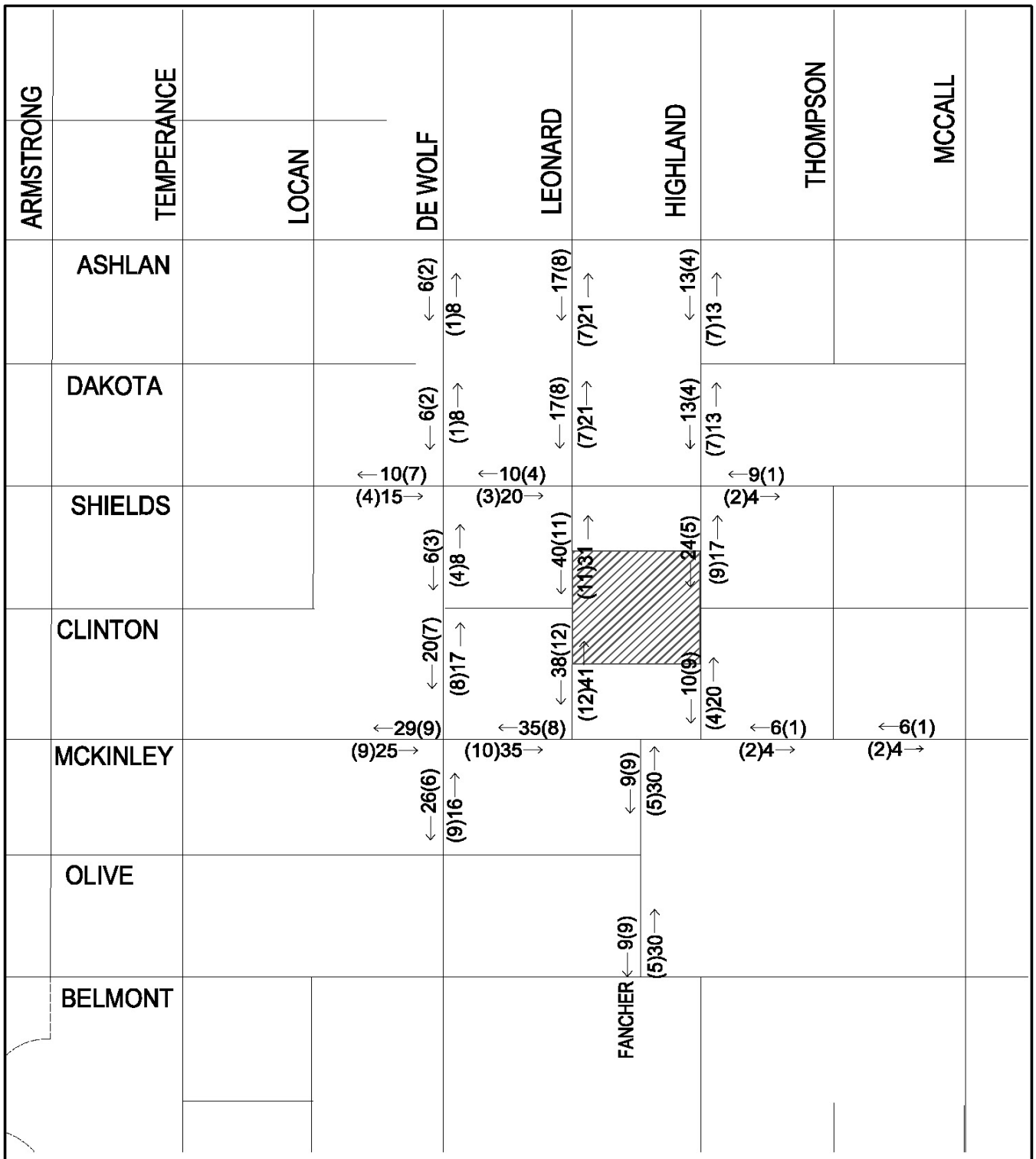
Table 9-2 Project Trip Generation

Land Use	ITE Code	Units	A.M. Peak Hour			P.M. Peak Hour			Weekday	
			Rate Split	Enter	Exit	Rate Split	Enter	Exit	Rate	Total
High School	530	2,900 Students	0.41 69/31	820	369	0.14 47/53	191	215	1.71	4,959
Intermediate School	522	1,400 Students	0.53 55/45	408	334	0.15 52/48	109	101	1.62	2,268
Elementary School	520	700 Students	0.42 55/45	162	133	0.14* 45/55	45	54	1.29	903
TOTAL				**1,390**	**836**		**345**	**370**		**8,130**

Reference: *Trip Generation, 7th Edition,* Institute of Transportation Engineers 2003
Rates are reported in trips per student. Splits are reported as Entering/Exiting as a percentage of the total

** ITE does not include data between 4:00 and 6:00 p.m. for elementary schools. As a comparison, a Middle School has a rate of 0.15 trips per student between 4:00 and 6:00 p.m. and a rate of 0.30 trips per student during the p.m. peak hour of the generator, typically occurring between 2:00 and 4:00 p.m. A High School has a rate of 0.14 trips per student between 4:00 and 6:00 p.m. and a rate of 0.28 trips per student during the p.m. peak hour of the generator (2:00 to 4:00 p.m.). In each case, the rate between 4:00 and 6:00 p.m. is half the rate between 2:00 and 4:00 p.m. Therefore it is not unreasonable to assume that the trips per student between 4:00 and 6:00 p.m. for an elementary school would be approximately half of the 0.28 rate for the p.m. peak hour of an elementary school (2:00 to 4:00 p.m.). The assumed 45/55 split was obtained from same comparison between the middle school and high school split.*

Pass-by and captured-trip reductions are negligible with respect to schools and were not applied. The conceptual trip distribution diagrams for the elementary school, middle school, and high school are attached in Figures 9-2 through 9-4. The combined trip distribution diagram (sum of the values presented in Figures 9-2 through 9-4) is presented in Figure 9-5. The trip distribution was developed using engineering judgment and is subjective, especially considering that the site plan is not yet defined and the site driveway locations are not known. The figures represent the project traffic volumes as distributed to the adjacent road network.



PROJECT TRIP DISTRIBUTION - ELEMENTARY SCHOOL
CLOVIS UNIFIED SCHOOL DISTRICT
PROPOSED 4TH EDUCATIONAL CENTER
Fresno, California

Legend
20-AM Peak Hour Volumes
(20)-PM Peak Hour Volumes

Not to Scale

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FIGURE 9-2

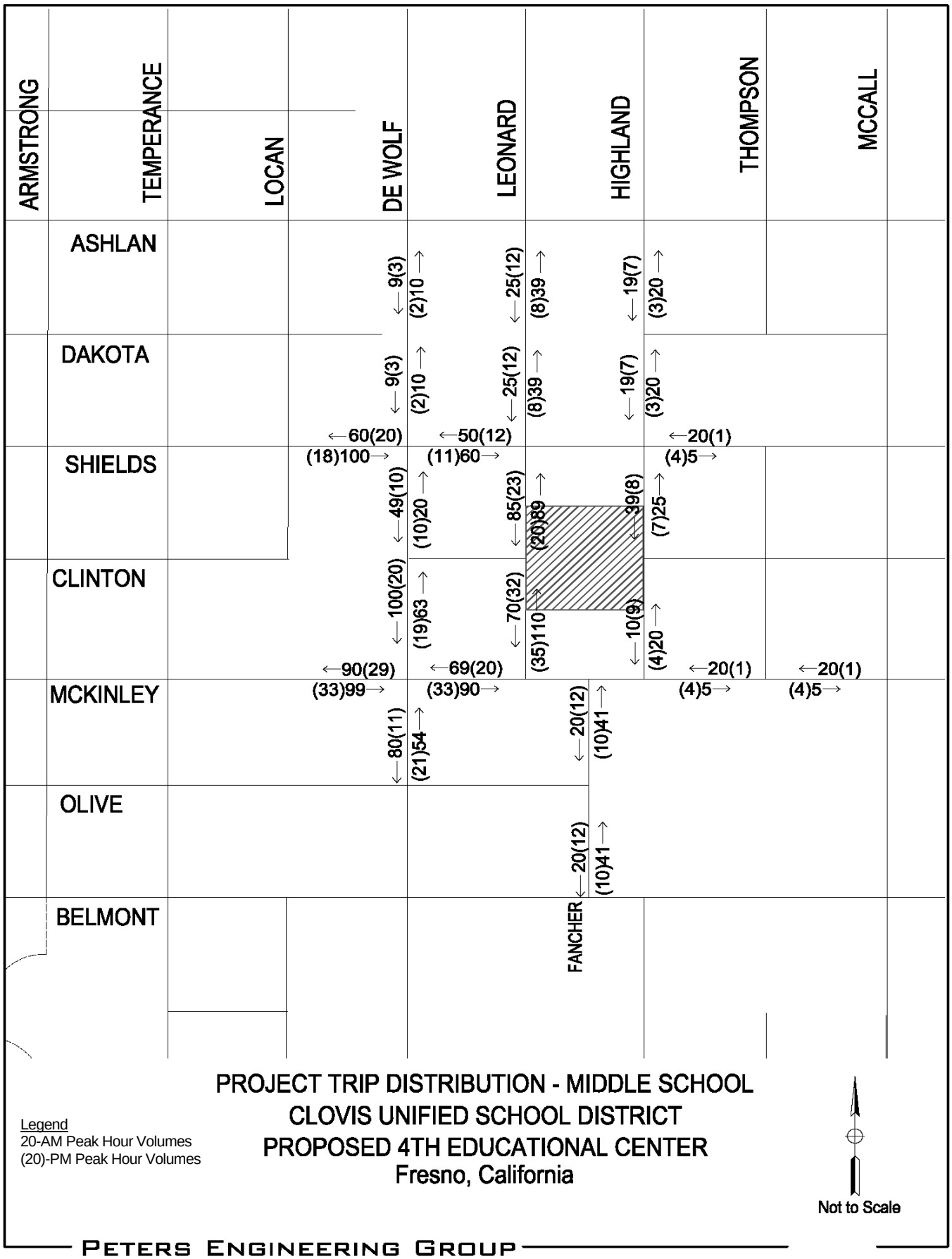

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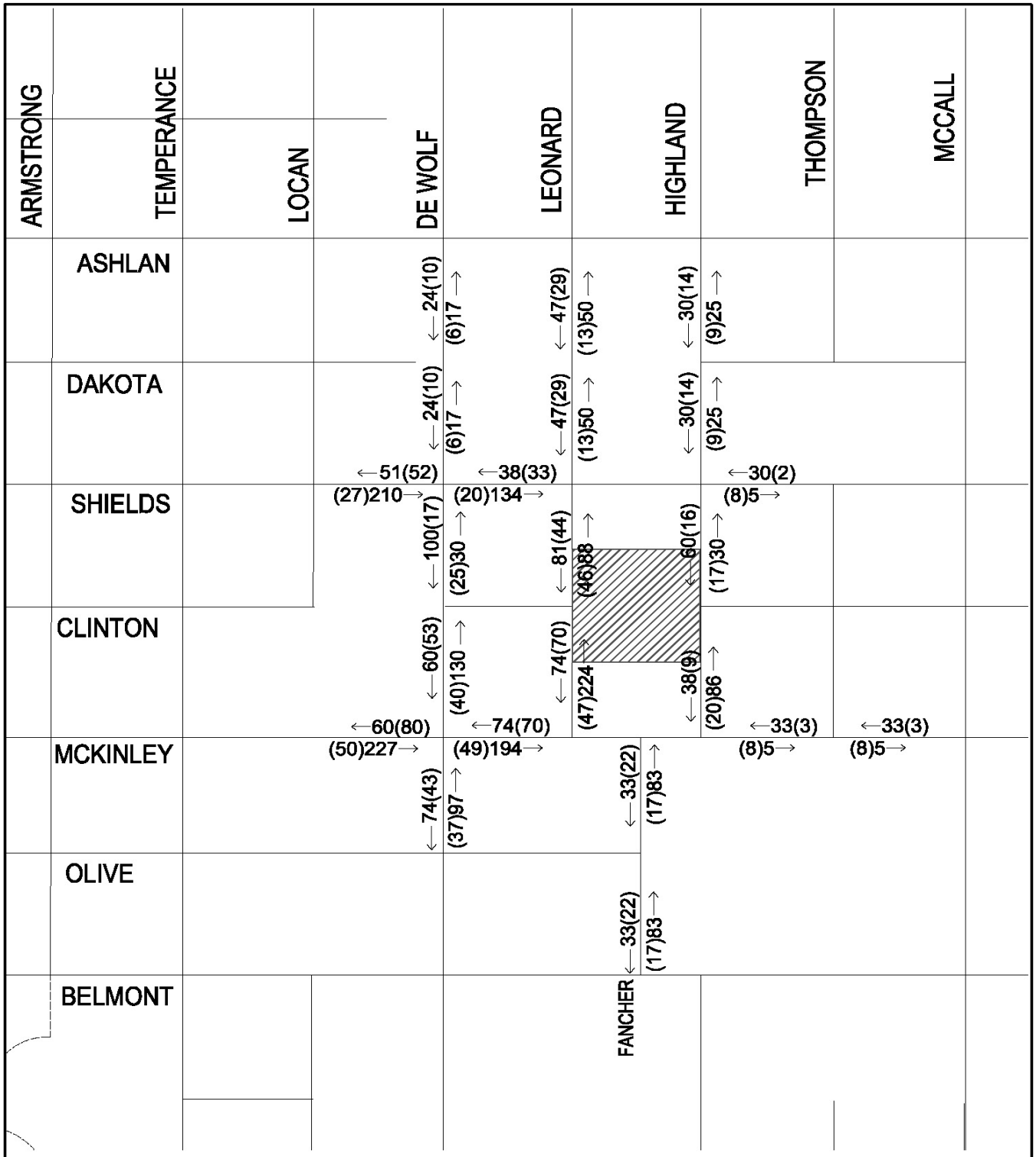
FIGURE 9-3



Legend
20-AM Peak Hour Volumes
(20)-PM Peak Hour Volumes

PROJECT TRIP DISTRIBUTION - HIGH SCHOOL
CLOVIS UNIFIED SCHOOL DISTRICT
PROPOSED 4TH EDUCATIONAL CENTER
Fresno, California

Not to Scale

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FIGURE 9-4

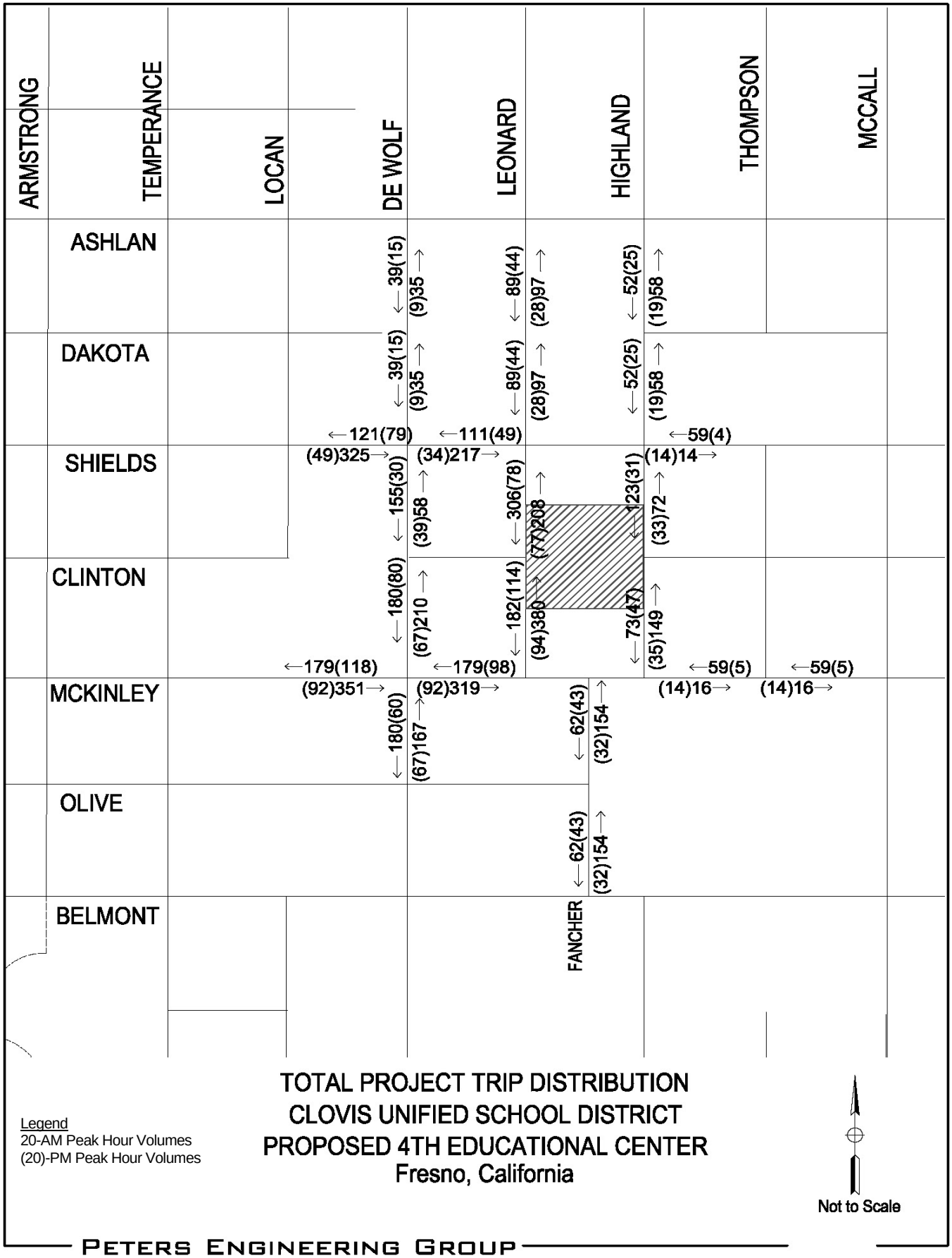

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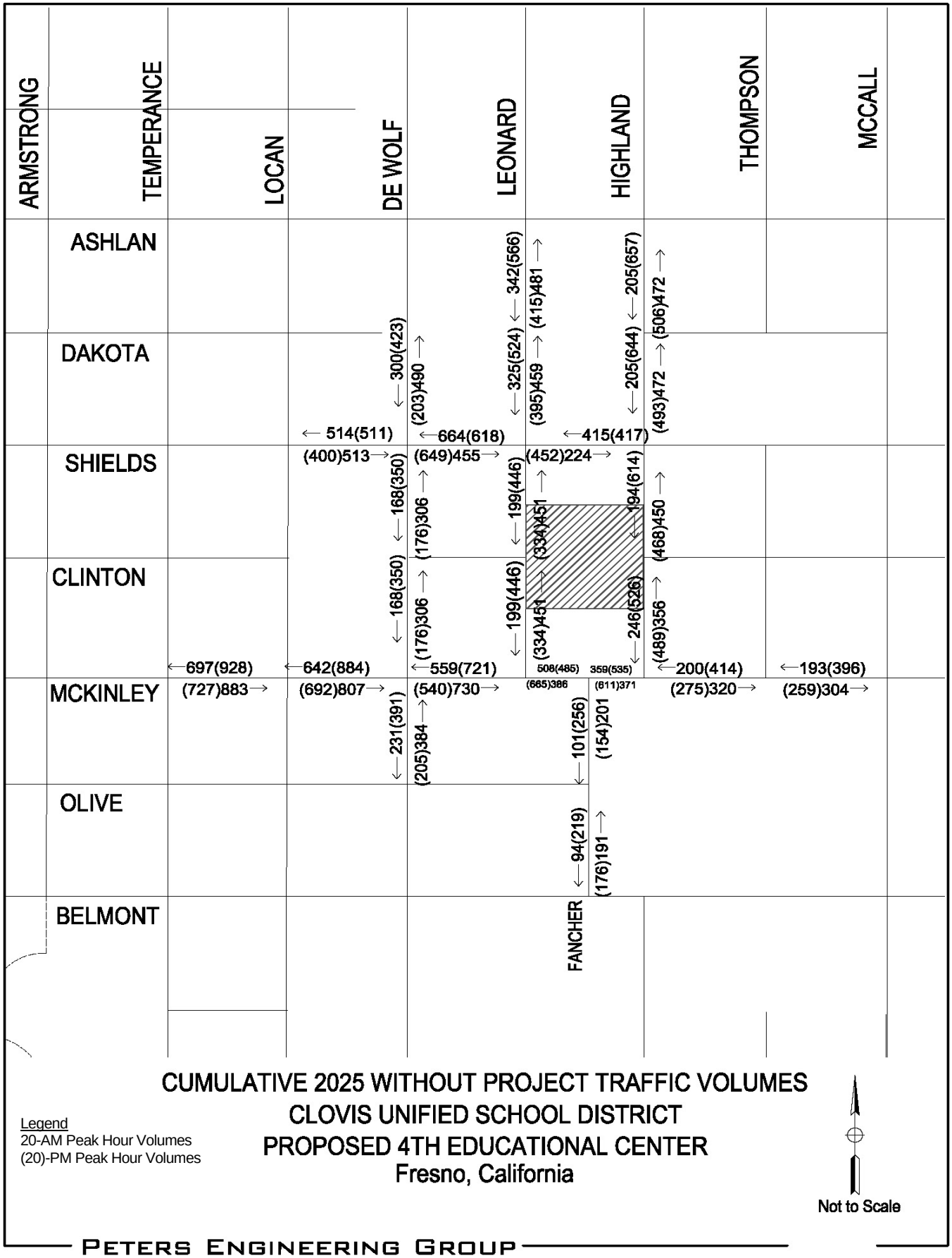
FIGURE 9-5

Trip Generation does not present data for high school stadiums. The ITE publication *Traffic Considerations for Special Events* (June 1975) presents data related to much larger stadiums. A recent draft environmental impact report for the Central Unified Educational Center (State Clearinghouse No. 2002021064) included trip generation estimates for a 10,000-seat stadium that were based in part on the ITE publication. Data suggests that the typical occupancy rate of vehicles traveling to a special event in this type of facility ranges from 2.5 to 3.5 persons per vehicle. A very conservative trip generation assumption would assume that a capacity crowd of 8,000 persons all arrive in vehicles with an occupancy of 2.5 persons per vehicle within the one-hour time period before the event and leave within the one-hour time period after the event. Based on these values it is estimated that the extreme upper limit of trip generation for the high school stadium would be on the order of 3,200 trips per hour. The actual number of trips will likely be less since typically only 75 percent to 90 percent of the trips actually occur within an hour of the event. In addition, some attendees are likely to walk to the stadium or ride a bus.

Cumulative Year 2025 Traffic Volumes

The Council of Fresno County Governments (COG) maintains a travel model that is typically used to estimate cumulative (year 2025) traffic volumes. Cumulative traffic volumes without and with the project for the year 2025 were determined using the COG Increment Method, which is described in a document available from the COG entitled "Model Steering Committee Recommended Procedures for Using Traffic Projections from the Fresno COG Travel Model dated December 2002". In general, the Increment Method estimates future traffic volumes by determining the increase in traffic volumes projected by the model between the base year and the horizon year. This increase is then added to the existing traffic volumes. The cumulative peak hour road segment volumes on each of the study road segments without and with the project are presented in Figures 9-6 and 9-7, respectively. The COG travel model data output is attached (Appendix 9-2).



CUMULATIVE 2025 WITHOUT PROJECT TRAFFIC VOLUMES
CLOVIS UNIFIED SCHOOL DISTRICT
PROPOSED 4TH EDUCATIONAL CENTER
Fresno, California

Legend
20-AM Peak Hour Volumes
(20)-PM Peak Hour Volumes

Not to Scale

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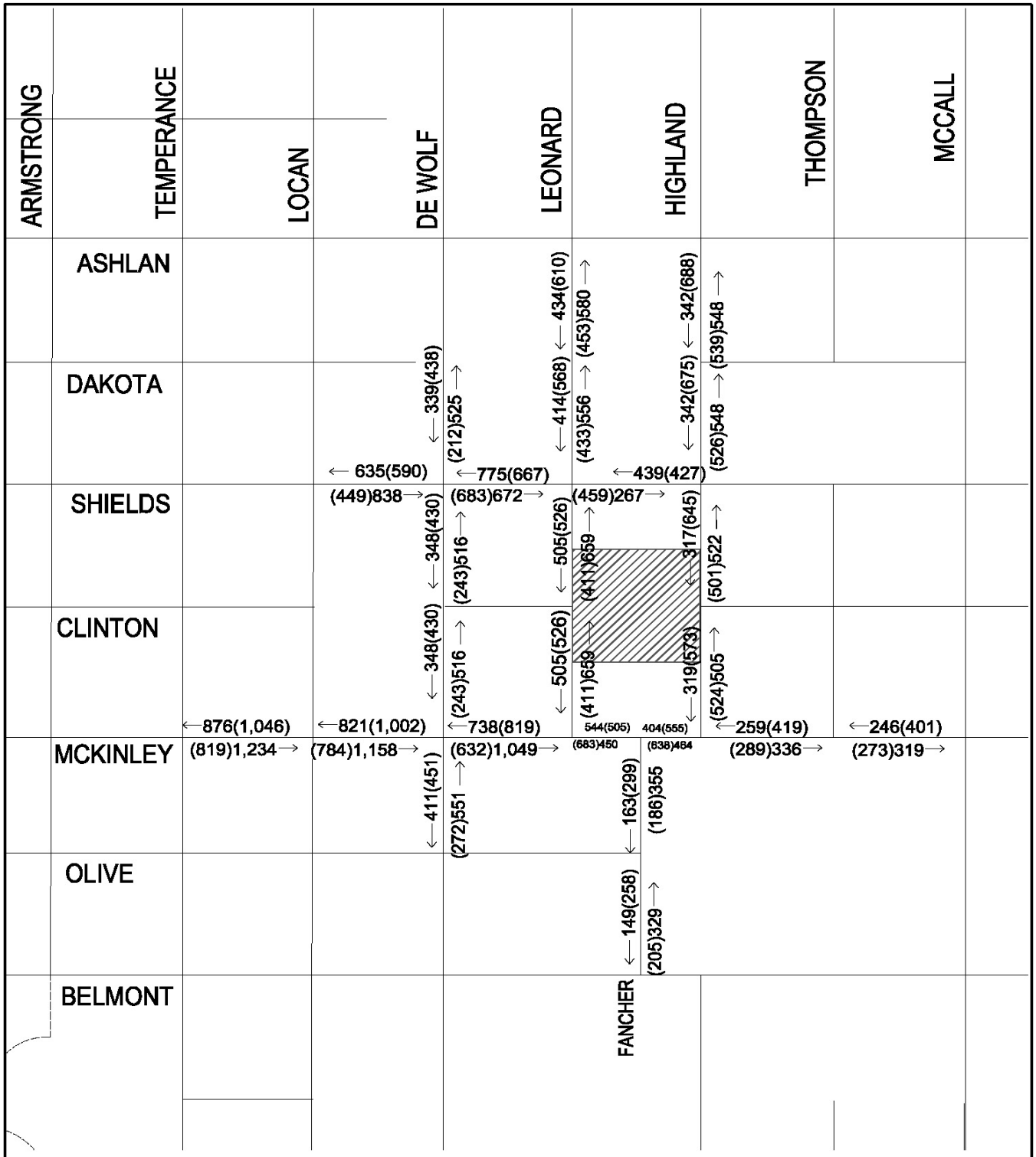
FIGURE 9-6



CUMULATIVE 2025 WITH PROJECT TRAFFIC VOLUMES
CLOVIS UNIFIED SCHOOL DISTRICT
PROPOSED 4TH EDUCATIONAL CENTER
Fresno, California

Legend
20-AM Peak Hour Volumes
(20)-PM Peak Hour Volumes

Not to Scale

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FIGURE 9-7

Road Segment Level of Service Analysis

Road segment analyses were based on the Florida Department of Transportation's Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas (Non-State Roadways, Major City/County Roadways). The table is presented in Appendix 9-3. Peak-hour level-of-service characteristics for road segments are presented in Table 9-3. Table 9-4 presents the specific peak-hour volume thresholds used in the analyses.

Table 9-3 Level of Service Characteristics for Roadways

Level of Service	Description
A	Primarily free flow operations
B	Reasonably unimpeded operations, ability to maneuver only slightly restricted
C	Stable operations, ability to maneuver and select operating speed affected
D	Unstable flow, speeds and ability to maneuver restricted
E	Significant delays, flow quite unstable
F	Extremely slow speeds

Reference: 1998 *Highway Capacity Manual*, Transportation Research Board

Table 9-4 Peak-Hour Volume Thresholds for Roadway Levels of Service

Lanes	Divided	A	B	C	D	E	F
1	Undivided	-	-	≤480	481 - 760	761 - 810	>810
1	Divided	-	-	≤504	505 - 798	799 - 850	>851
2	Undivided	-	-	≤1,064	1,065 - 1,539	1,540 - 1,634	>1,634
2	Divided	-	-	≤1,120	1,121 - 1,620	1 621 - 1,720	>1,720
3	Divided	-	-	≤1,740	1,741 - 2,450	2,451 - 2,580	>2,580

Reference: Florida Department of Transportation Table 4-7, Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas

The City of Fresno, City of Clovis, and County of Fresno require that a level of service D or better be maintained within the sphere of influence of the City of Fresno and City of Clovis to comply with the *2025 General Plan, Transportation and Streets and Highways, Policy E-1-f.* Tables 9-5 and 9-6 present the results of the peak-hour road segment analyses.

Table 9-5 Road Segment Level of Service Summary – Weekday A.M. Peak Hour

Road and Direction	Existing			Cumulative 2025 Without Project			Cumulative 2025 With Project		
Segment	L	Vol	LOS	L	Vol	LOS	L	Vol	LOS
Leonard Avenue NB									
McKinley to Clinton	1/U	67	C	2/D	451	C	2/D	659	C
Clinton to Shields	1/U	67	C	2/D	451	C	2/D	659	C
Shields to Dakota	1/U	143	C	2/D	459	C	2/D	556	C
Dakota to Ashlan	1/U	143	C	2/D	481	C	2/D	580	C
Leonard Avenue SB									
Ashlan to Dakota	1/U	180	C	2/D	342	C	2/D	434	C
Dakota to Shields	1/U	180	C	2/D	325	C	2/D	414	C
Shields to Clinton	1/U	110	C	2/D	199	C	2/D	505	C
Clinton to McKinley	1/U	110	C	2/D	199	C	2/D	505	C
Highland Avenue NB									
McKinley to Clinton	1/U	30	C	2/U	356	C	2/U	505	C
Clinton to Shields	1/U	33	C	2/U	450	C	2/U	522	C
Shields to Dakota	1/U	33	C	2/U	472	C	2/U	548	C
Dakota to Ashlan	1/U	33	C	2/U	472	C	2/U	548	C
Highland Avenue SB									
Ashlan to Dakota	1/U	31	C	2/U	205	C	2/U	342	C
Dakota to Shields	1/U	31	C	2/U	205	C	2/U	342	C
Shields to Clinton	1/U	31	C	2/U	194	C	2/U	317	C
Clinton to McKinley	1/U	36	C	2/U	246	C	2/U	319	C
DeWolf Avenue NB									
Olive to McKinley	1/U	109	C	2/U	384	C	2/U	551	C
McKinley to Clinton	1/U	79	C	2/U	306	C	2/U	516	C
Clinton to Shields	1/U	79	C	2/U	306	C	2/U	516	C
Shields to Dakota	1/U	170	C	2/U	490	C	2/U	525	C
DeWolf Avenue SB									
Dakota to Shields	1/U	226	C	2/U	300	C	2/U	339	C
Shields to Clinton	1/U	93	C	2/U	168	C	2/U	348	C
Clinton to McKinley	1/U	93	C	2/U	168	C	2/U	348	C
McKinley to Olive	1/U	128	C	2/U	231	C	2/U	411	C
Fancher Avenue NB									
Belmont to Olive	1/U	45	C	2/U	191	C	2/U	329	C
Olive to McKinley	1/U	52	C	2/U	201	C	2/U	355	C
Fancher Avenue SB									
McKinley to Olive	1/U	56	C	2/U	101	C	2/U	163	C
Olive to Belmont	1/U	52	C	2/U	94	C	2/U	149	C
Shields Avenue EB									
Locan to DeWolf	1/U	212	C	2/D	513	C	2/D	838	C
DeWolf to Leonard	1/U	120	C	2/D	455	C	2/D	672	C
Leonard to Highland	1/U	53	C	2/D	224	C	2/D	267	C
Shields Avenue WB									
Highland to Leonard	1/U	28	C	2/D	415	C	2/D	439	C
Leonard to DeWolf	1/U	114	C	2/D	664	C	2/D	775	C
DeWolf to Locan	1/U	153	C	2/D	514	C	2/D	635	C

Table 9-5 (Continued) Road Segment Level of Service Summary – Weekday A.M. Peak Hour

Road and Direction	Existing			Cumulative 2025 Without Project			Cumulative 2025 With Project		
Segment	L	Vol	LOS	L	Vol	LOS	L	Vol	LOS
McKinley Avenue EB									
Temperance to Locan	1/U	238	C	2/D	883	C	2/D	1,234	D
Locan to DeWolf	1/U	238	C	2/D	807	C	2/D	1,158	D
DeWolf to Leonard	1/U	264	C	2/D	730	C	2/D	1,049	C
Leonard to Fancher	1/U	227	C	2/D	386	C	2/D	450	C
Fancher to Highland	1/U	227	C	2/D	371	C	2/D	464	C
Highland to Thompson	1/U	238	C	2/D	320	C	2/D	336	C
Thompson to McCall	1/U	238	C	2/D	304	C	2/D	319	C
McKinley Avenue WB									
McCall to Thompson	1/U	114	C	2/D	193	C	2/D	246	C
Thompson to Highland	1/U	114	C	2/D	200	C	2/D	259	C
Highland to Fancher	1/U	101	C	2/D	359	C	2/D	404	C
Fancher to Leonard	1/U	97	C	2/D	508	C	2/D	544	C
Leonard to DeWolf	1/U	149	C	2/D	559	C	2/D	738	C
DeWolf to Locan	1/U	120	C	2/D	642	C	2/D	821	C
Locan to Temperance	1/U	120	C	2/D	697	C	2/D	876	C

L – Number of lanes Vol. – Volume U – Undivided road Dv – Divided Road
EB – Eastbound WB – Westbound NB – Northbound SB – Southbound

Table 9-6 Road Segment Level of Service Summary – Weekday P.M. Peak Hour

Road and Direction	Existing			Cumulative 2025 Without Project			Cumulative 2025 With Project		
Segment	L	Vol	LOS	L	Vol	LOS	L	Vol	LOS
Leonard Avenue NB									
McKinley to Clinton	1/U	29	C	2/D	334	C	2/D	411	C
Clinton to Shields	1/U	29	C	2/D	334	C	2/D	411	C
Shields to Dakota	1/U	41	C	2/D	395	C	2/D	433	C
Dakota to Ashlan	1/U	41	C	2/D	415	C	2/D	453	C
Leonard Avenue SB									
Ashlan to Dakota	1/U	32	C	2/D	566	C	2/D	610	C
Dakota to Shields	1/U	32	C	2/D	524	C	2/D	568	C
Shields to Clinton	1/U	23	C	2/D	446	C	2/D	526	C
Clinton to McKinley	1/U	23	C	2/D	446	C	2/D	526	C
Highland Avenue NB									
McKinley to Clinton	1/U	36	C	2/U	489	C	2/U	524	C
Clinton to Shields	1/U	35	C	2/U	468	C	2/U	501	C
Shields to Dakota	1/U	35	C	2/U	493	C	2/U	526	C
Dakota to Ashlan	1/U	35	C	2/U	506	C	2/U	539	C
Highland Avenue SB									
Ashlan to Dakota	1/U	26	C	2/U	657	C	2/U	688	C
Dakota to Shields	1/U	26	C	2/U	644	C	2/U	675	C
Shields to Clinton	1/U	26	C	2/U	614	C	2/U	645	C
Clinton to McKinley	1/U	29	C	2/U	526	C	2/U	573	C

Table 9-6 (Continued)Road Segment Level of Service Summary – Weekday P.M. Peak Hour

Road and Direction	Existing			Cumulative 2025 Without Project			Cumulative 2025 With Project		
Segment	L	Vol	LOS	L	Vol	LOS	L	Vol	LOS
DeWolf Avenue NB									
Olive to McKinley	1/U	64	C	2/U	205	C	2/U	272	C
McKinley to Clinton	1/U	55	C	2/U	176	C	2/U	243	C
Clinton to Shields	1/U	55	C	2/U	176	C	2/U	243	C
Shields to Dakota	1/U	85	C	2/U	203	C	2/U	212	C
DeWolf Avenue SB									
Dakota to Shields	1/U	91	C	2/U	423	C	2/U	438	C
Shields to Clinton	1/U	52	C	2/U	350	C	2/U	430	C
Clinton to McKinley	1/U	52	C	2/U	350	C	2/U	430	C
McKinley to Olive	1/U	46	C	2/U	391	C	2/U	451	C
Fancher Avenue NB									
Belmont to Olive	1/U	48	C	2/U	176	C	2/U	205	C
Olive to McKinley	1/U	55	C	2/U	154	C	2/U	186	C
Fancher Avenue SB									
McKinley to Olive	1/U	38	C	2/U	256	C	2/U	299	C
Olive to Belmont	1/U	47	C	2/U	219	C	2/U	258	C
Shields Avenue EB									
Locan to DeWolf	1/U	62	C	2/D	400	C	2/D	449	C
DeWolf to Leonard	1/U	37	C	2/D	649	C	2/D	683	C
Leonard to Highland	1/U	26	C	2/D	452	C	2/D	459	C
Shields Avenue WB									
Highland to Leonard	1/U	78	C	2/D	417	C	2/D	427	C
Leonard to DeWolf	1/U	98	C	2/D	618	C	2/D	667	C
DeWolf to Locan	1/U	144	C	2/D	511	C	2/D	590	C
McKinley Avenue EB									
Temperance to Locan	1/U	115	C	2/D	727	C	2/D	819	C
Locan to DeWolf	1/U	115	C	2/D	692	C	2/D	784	C
DeWolf to Leonard	1/U	125	C	2/D	540	C	2/D	632	C
Leonard to Fancher	1/U	113	C	2/D	665	C	2/D	683	C
Fancher to Highland	1/U	115	C	2/D	611	C	2/D	638	C
Highland to Thompson	1/U	115	C	2/D	275	C	2/D	289	C
Thompson to McCall	1/U	115	C	2/D	259	C	2/D	273	C
McKinley Avenue WB									
McCall to Thompson	1/U	193	C	2/D	396	C	2/D	401	C
Thompson to Highland	1/U	193	C	2/D	414	C	2/D	419	C
Highland to Fancher	1/U	179	C	2/D	535	C	2/D	555	C
Fancher to Leonard	1/U	153	C	2/D	485	C	2/D	505	C
Leonard to DeWolf	1/U	145	C	2/D	721	C	2/D	819	C
DeWolf to Locan	1/U	157	C	2/D	884	C	2/D	1,002	C
Locan to Temperance	1/U	157	C	2/D	928	C	2/D	1,046	C

L – Number of lanes Vol. – Volume U – Undivided road Dv – Divided Road
EB – Eastbound WB – Westbound NB – Northbound SB – Southbound

The results of the existing-conditions analyses indicate that the study road segments are currently operating at acceptable levels of service. The results of the cumulative year 2025 analyses indicates that, with eventual build out of the road segments in accordance with the descriptions in Table 9-1, the study road segments are expected to operate at acceptable levels in the year 2025 with or without the proposed project.

Mitigation Measure

9.1 The project shall be required to perform a project-specific traffic impact study prior to submitting improvement plans for each phase of development, including the proposed stadium, in accordance with City of Fresno and County of Fresno requirements in place at that time. The City of Fresno currently requires any project expected to generate 100 or more peak-hour trips to perform a traffic impact study. The County of Fresno currently requires a traffic impact study for all intersections at which a project will generate 10 or more peak-hour trips or 100 or more daily trips. In addition, Caltrans may require analysis of state facilities. CUSD shall consult with the City of Fresno, County of Fresno, City of Clovis, and Caltrans prior to any new construction project to determine the requirements for a traffic impact study. The project shall be required to mitigate traffic impacts to the level of service and queuing requirements of the affected agencies current at the time the traffic study is performed. The future traffic impact studies shall not be based on the trip generation data or traffic counts presented herein, but shall be based on the best and most recent data available at the time the study is performed.

Level of Significance

This impact will be less than significant with the incorporation of the mitigation measure.

Impact 9.2:

The project may result in localized traffic, parking, safety and emergency access issues related to site driveways, loading and unloading areas, parking lot locations, internal circulation and stadium use.

No site plan exists for the proposed educational center. Since project construction will not occur for at least 5-7 years, site plan preparation would be premature at this time. Detailed site planning for school facilities normally does not occur until educational specifications for the facility are developed. This involves defining the desired education program for the project and translating the program into a design of the facilities and improvements on the site to best facilitate the desired educational program.

Specific site design can have a significant influence on traffic congestion and related safety issues near site driveways, parking loading and drop-off areas, and athletic and performing arts facilities. Adequate parking and emergency access also need to be provided. The site planning process should evaluate and address site specific traffic, parking, safety and emergency access issues with appropriate City and County staff input**.**

Mitigation Measure

9.2 As part of the future site planning process for the project, a traffic and parking analysis shall be prepared that (1) evaluates and addresses potential traffic congestion where

driveways intersect with adjoining public streets; (2) ensures that adequate parking is provided for students, faculty, staff, visitors, and athletic facilities, in accordance with accepted standards and practices for school facilities existing at the time of site plan preparation; (3) provides for separate off-street facilities for student drop-offs by parents and bus loading and unloading; and (4) ensures that adequate emergency access is provided to the project in accordance with local fire and law enforcement requirements. The above analysis shall be prepared in coordination with City of Fresno and County of Fresno planning and traffic engineering staffs, and City and County law enforcement and fire departments.

Level of Significance

This impact will be less than significant with the incorporation of the mitigation measure.

No Impact

Fresno County does not have a congestion management agency. Therefore, the project cannot exceed a level of service standard established by such an agency.

The project has no design or operational characteristics that would result in a change in air traffic patterns, including either an increase in traffic levels or a change in locations that results in substantial safety risks. The project site is not within two miles of an airport.

Sources

This chapter is based upon the following report:

Peters Engineering Group (2007, May 2). *Traffic Impact Study, Proposed Fourth Educational Center, Clovis Unified School District.*[2]

Sources cited by Peters Engineering Group are as follows:

Central Unified School District (2002). *Draft Environmental Impact Report, Central Unified Educational Center*. Environmental Consultant, Michael Paoli & Associates.

Clovis, City of (1993, April 26). *The City of Clovis General Plan Program*.

Fresno, County of (2000, January). *Fresno County General Plan Public Review Draft Policy Document.*

Fresno, City of (2002, May). *Draft Master Environmental Impact Report No. 10130, 2025 Fresno General Plan.*

Institute of Transportation Engineers (1975). *Traffic Considerations for Special Events*.

Institute of Transportation Engineers. *Trip Generation, 7th Edition.*

Transportation Research Board. *1998 Highway Capacity Manual.*

[2] Traffic modeling background information is presented in Appendix 9-1 of this EIR.

Chapter
10

Air Quality

Setting

Introduction

Air-related impacts associated with the project are identified in this chapter based upon a report prepared for this EIR by Ambient Air Quality & Noise Consulting (*Air Quality Impact Analysis for the Proposed Fourth Education Center, Clovis Unified School District* – April 15, 2008).

The project site is located in the San Joaquin Valley Air Basin (SJVAB), which is under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). Existing air quality conditions in the SJVAB and the factors affecting air quality conditions in the basin are discussed below.

Topography, Meteorology, and Pollutant Dispersion

Overview

The dispersion of air pollution in an area is determined by such natural factors as topography, meteorology, and climate, coupled with atmospheric stability conditions and the presence of inversions. The factors affecting the dispersion of air pollution with respect to the SJVAB are discussed below.

Topography

The SJVAB occupies the southern half of the Central Valley. The Coast Ranges, which have an average elevation of 3,000 feet, are located on the western border of the SJVAB. The San Emigdio Mountains, which are part of the Coast Ranges, and the Tehachapi Mountains, which are part of the Sierra Nevada, are both located on the south side of the SJVAB. The Sierra Nevada forms the eastern border of the SJVAB. There is no topographic feature delineating the northern edge of the basin. The SJVAB is basically flat with a downward gradient in terrain to the northwest.

Meteorology and Climate

The climate of the SJVAB is strongly influenced by the presence of mountain ranges. The mountain ranges to the west and south induce winter storms from the Pacific Ocean to release precipitation on the western slopes producing a partial rain shadow over the valley. In addition, the mountain ranges block the free circulation of air to the east, trapping stable air in the valley for extended periods during the cooler half of the year. Winter in the SJVAB is characterized as mild and fairly humid, and the summer is typically hot, dry, and cloudless.

The climate is a result of the topography and the strength and location of a semipermanent, subtropical high-pressure cell. During summer, the Pacific high-pressure cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below to the surface as a result of the northwesterly flow produces a band of cold water off the California coast. In winter, the Pacific high-pressure cell weakens and shifts southward, resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms.

The annual temperature, humidity, precipitation, and wind patterns reflect the topography of the SJVAB and the strength and location of the semipermanent, subtropical high-pressure cell. Summer temperatures that often exceed 100°F and clear sky conditions are favorable to ozone formation. Most of the precipitation in the valley occurs as rainfall during winter storms. The winds and unstable atmospheric conditions associated with the passage of winter storms result in periods of low air pollution and excellent visibility. However, between winter storms, high pressure and light winds lead to the creation of low-level temperature inversions and stable atmospheric conditions resulting in high carbon monoxide (CO) concentrations and particulate matter (PM) accumulation. The orientation of the wind flow pattern in the SJVAB is parallel to the valley and mountain ranges. Summer wind conditions promote the transport of ozone and precursors from the San Francisco Bay Area through the Carquinez Strait, a gap in the Coast Ranges, and low-mountain passes such as Altamont Pass and Pacheco Pass.

The climate is semi-arid, with an annual average precipitation of approximately 11 inches. Temperatures in the Fresno region range from an average minimum of approximately 38 degrees Fahrenheit (°F), in January, to an average maximum of approximately 98°F, in July (WRCC 2007). The wind is predominantly from the west-northwest at 9 mph (ARB 1992).

Atmospheric Stability and Inversions

Stability describes the resistance of the atmosphere to vertical motion. The stability of the atmosphere is dependent on the vertical distribution of temperature with height. Stability categories range from "Extremely Unstable" (Class A), through Neutral (Class D), to "Stable" (Class F). Unstable conditions often occur during daytime hours when solar heating warms the lower atmospheric layers sufficiently. Under Class A stability conditions, large fluctuations in horizontal wind direction occur coupled with large vertical mixing depths. Under Class B stability conditions, wind direction fluctuations and the vertical mixing depth are less pronounced because of a decrease in the amount of solar heating. Under Class C stability conditions, solar heating is weak along with horizontal and vertical fluctuations because of a combination of thermal and mechanical turbulence. Under Class D stability conditions, vertical motions are primarily generated by mechanical turbulence. Under Class E and Class F stability conditions, air pollution emitted into the atmosphere travels downwind with poor dispersion. The dispersive power of the atmosphere decreases with progression through the categories from A to F.

With respect to the SJVAB, Classes D through F are predominant during the late fall and winter because of cool temperatures and entrapment of cold air near the surface. March and August are transition months with equally occurring percentages of Class F and Class A. During the spring months of April and May and the summer months of June and July, Class A

is predominant. The fall months of September, October, and November have comparable percentages of Class A and Class F.

An inversion is a layer of warmer air over a layer of cooler air. Inversions influence the mixing depth of the atmosphere, which is the vertical depth available for diluting air pollution near the ground, thus significantly affecting air quality conditions. The SJVAB experiences both surface-based and elevated inversions. The shallow surface-based inversions are present in the morning but are often broken by daytime heating of the air layers near the ground. The deep elevated inversions occur less frequently than the surface-based inversions but generally result in more severe stagnation. The surface-based inversions occur more frequently in the fall, and the stronger elevated inversions usually occur during December and January.

Regulatory Background

Overview

Air quality within the SJVAB is regulated by several jurisdictions including the United States Environmental Protection Agency (U.S. EPA), California Air Resources Board (ARB), and the SJVAPCD. Each of these jurisdictions develops rules, regulations, and policies to attain the goals or directives imposed upon them through legislation. Although U.S. EPA regulations may not be superseded, both state and local regulations may be more stringent.

Pollutants subject to federal ambient standards are referred to as "criteria" pollutants because the U.S. EPA publishes criteria documents to justify the choice of standards. One of the most important reasons for air quality standards is the protection of those members of the population who are most sensitive to the adverse health effects of air pollution, termed "sensitive receptors." The term “sensitive receptors” refers to specific population groups, as well as the land uses where they would reside for long periods. Commonly identified sensitive population groups are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses are residences, schools, playgrounds, childcare centers, retirement homes or convalescent homes, hospitals, and clinics. Criteria air pollutants, common sources, and associated effects are summarized in Table 10-1. The federal and state standards for the criteria pollutants and other state regulated air pollutants are shown in Table 10-2.

Table 10-1
Criteria Air Pollutants Summary of Common Sources and Effects

Pollutant	Major Man-Made Sources	Human Health & Welfare Effects	Control Measures
Particulate Matter (PM) Airborne solid particle and liquid particles. Grouped into two categories: “Course Particles” (PM10) – from 2.5 to 10 microns in diameter. “Fine Particles” (PM2.5) – less than 2.5 microns in diameter.	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).	Pollution control equipment/methods and reduction of fuel combustion

Ozone (O3) (Smog) A colorless or bluish gas.	Formed by a chemical reaction between volatile organic compounds (VOC) and nitrous oxides (NOx) in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles and dyes.	Pollution control equipment/ methods; reducing NOx emissions from power plants and industrial combustion sources; introducing low-emission cars and trucks; using "cleaner" gasoline; use of low-VOC solvents.
Sulfur Dioxide (SO2) A colorless, nonflammable gas.	Formed when fuel containing sulfur, such as coal and oil, is burned; when gasoline is extracted from oil; or when metal is extracted from ore. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, large ships, and fuel combustion in diesel engines.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel; damage crops and natural vegetation. Impairs visibility. Precursor to acid rain.	Use of low-sulfur fuels, energy conservation (reduces power plant emissions), and pollution control equipment. Ultra Low Sulfur Diesel is being phased in during 2006 and will be mandatory in 2007.
Carbon Monoxide (CO) An odorless, colorless gas.	Formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.	Transportation planning, vehicle emission testing and reduction, efficient combustion techniques, and energy conservation.
Nitrogen Dioxide (NO2) A reddish-brown gas.	Fuel combustion in motor vehicles and industrial sources. Motor vehicles; electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to global warming, and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.	Exhaust gas recirculation in motor vehicles; reduction of combustion temperatures in industrial sources; energy conservation pollution control equipment.
Lead Metallic element	Metal refineries, smelters, battery manufacturers, iron and steel producers, use of leaded fuels by racing and aircraft industries.	Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems.	Pollution control equipment/ methods; Use of unleaded fuels.
Source: ARB 2006, CAPCOA 2006			

Table 10-2
Summary of Air Quality Standards

Pollutant	Averaging Time	California Standards [a, c]	National Standards [b, c]	
			Primary [d]	Secondary [e]
Ozone (O3)	1-hour	0.09 ppm (180 µg/m3)	- -	Same as Primary
	8-hour	0.070 ppm (137 µg/m3)	0.08 ppm (157 µg/m3)	
Particulate Matter (PM10)	AAM	20 µg/m3	- -	
	24-hour	50 µg/m3	150 µg/m3	
Fine Particulate Matter (PM2.5)	AAM	12 µg/m3	15 µg/m3	
	24-hour	No Standard	35 µg/m3	
Carbon Monoxide (CO)	1-hour	20 ppm (23 mg/m3)	35 ppm (40 mg/m3)	None
	8-hour	9 ppm (10 mg/m3)	9 ppm (10 mg/m3)	
	8-hour (Lake Tahoe)	6 ppm (7 mg/m3)	–	
Nitrogen Dioxide (NO2)	AAM	0.030 ppm (56 µg/m3)	0.053 ppm (100 µg/m3)	Same as Primary
	1-hour	0.18 ppm (338 µg/m3)	–	
Sulfur Dioxide (SO2)	AAM	–	0.03 ppm (80 µg/m3)	–
	24-hour	0.04 ppm (105 µg/m3)	0.14 ppm (365 µg/m3)	–
	3-hour	–	–	0.5 ppm (1,300 µg/m3)
	1-hour	0.25 ppm (655 µg/m3)	–	–
Lead	30-day Average	1.5 µg/m3	–	–
	Calendar Quarter	–	1.5 µg/m3	Same as Primary
Sulfates	24-hour	25 µg/m3	No Federal Standards	
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m3)		
Vinyl Chloride	24-hour	0.01 ppm (26 µg/m3)		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient of 0.23 per kilometer — visibility of 10 miles or more (0.07—30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70%.		

a. California standards for O3, CO (except Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, PM (PM10 and PM2.5), and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded.
b. National standards (other than O3, PM, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The O3 standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24-hour standard is attained when 98 percent of daily concentrations, average over three years, are equal to or less than the standard.
c. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses.
d. The levels of air quality necessary to protect the public health.
e. The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
AAM = Annual Arithmetic Mean **Source: ARB 2008**

Federal Air Quality Regulations

At the federal level, the U.S. EPA has been charged with implementing national air quality programs. The U.S. EPA's air quality mandates are drawn primarily from the Federal Clean Air Act (FCAA), which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990.

The FCAA required the U.S. EPA to establish National Ambient Air Quality Standards (NAAQS), and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions.

State Air Quality Regulations

The California Clean Air Act (CCAA), 1988, requires that all air districts in the state endeavor to achieve and maintain California Ambient Air Quality Standards (CAAQS) for O_3, CO, SO_2, and nitrogen dioxide (NO_2) by the earliest practical date. Plans for attaining CAAQS were to be submitted to ARB by June 30, 1991. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a 5-percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each non-attainment pollutant or its precursors, or (2) to provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

Other ARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts, establishing CAAQS (which in many cases are more stringent than the NAAQS), and setting emissions standards for new motor vehicles. The emission standards established for motor vehicles differ depending on various factors including the model year, and the type of vehicle, fuel and engine used.

San Joaquin Valley Air Pollution Control District

The SJVAPCD is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded and that air quality conditions are maintained in the San Joaquin Valley Air Basin (SJVAB). Responsibilities of the SJVAPCD include, but are not limited to, preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing programs and regulations required by the federal Clean Air Act (CAA) and the California Clean Air Act (CCAA). In an attempt to achieve NAAQS and CAAQS and maintain air quality, the SJVAPCD has recently completed the following air quality attainment plans and reports: *2004 Extreme Ozone Attainment Demonstration Plan, 2003 PM_{10} Attainment Demonstration Plan, 2002-2005 Amended Ozone Rate of Progress Plan, 2000 Ozone Rate of Progress Report, 2001 Update to Ozone Attainment Demonstration Plan, 1997-1999 PM_{10} Progress Report, and the 2003 PM_{10} Plan*. In coordination with the ARB and other north/central

California air districts, the SJVAPCD has recently completed the development of the *2007 8-hour Ozone Attainment Demonstration Plan*. The *8-hour Ozone Plan* was adopted by the SJVAPCD on April 30, 2007. Rules and regulations most applicable to the proposed project are summarized in Appendix 10-1 of this report.

Ambient Air Quality (Criteria Air Pollutants)

Air pollutant concentrations are measured at several monitoring stations in Fresno County. The Clovis-North Villa Avenue air quality monitoring station is the closest representative monitoring site to the proposed project site with sufficient data to meet U.S. EPA and/or ARB criteria for quality assurance. The Clovis-North Villa Avenue monitoring station monitors ambient concentrations of ozone, nitrogen dioxide, and carbon monoxide, and airborne particulates. Ambient monitoring data for were obtained for the last three years of available measurement data (i.e., 2003 through 2005) and are summarized in Table 10-3. As depicted, the state (1-hour) and federal (1-hour/8-hour) ozone standards were exceeded several times during the past 3 years. The state standards for suspended particulates (i.e., PM_{10} $PM_{2..5}$) have also been exceeded on various occasions during the past 3 years.

Attainment Status

Under the CCAA, the ARB is required to designate areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data do not support either an attainment or nonattainment status. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The U.S. EPA designates areas for ozone, CO, and NO_2 as "does not meet the primary standards," "cannot be classified," or "better than national standards." For SO_2, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, the ARB terminology of attainment, nonattainment, and unclassified is more frequently used. The sub-categories for nonattainment status; serious, severe, and extreme; are also used by U.S. EPA. In 1991, new nonattainment designations were assigned to areas that had previously been classified as Group I, II, or III for PM_{10} based on the likelihood that they would violate national PM_{10} standards. All other areas are designated "unclassified."

The state and national attainment status designations pertaining to the SJVAB are summarized in Table 10-4. The SJVAB is currently designated as a nonattainment area with respect to the state PM_{10} and 1-hour ozone standards. The SJVAB is also designated nonattainment for the national 8-hour ozone standard and the national $PM_{2.5}$ standard. The SJVAB was recently redesignated attainment for the national PM_{10} standard. However, despite noteworthy air

Table 10-3
Summary of Ambient Air Quality Monitoring Data [1]

Pollutant/AAQS	2004	2005	2006
OZONE			
State standard: 1-hour average, 0.09 ppm			
National standard: 1-hour/8-hour average, 0.12/0.08 ppm			
Maximum concentration (1-hour/8-hour average)	0.126/0.103	0.127/0.096	0.127/0.096
Number of days state/national 1-hour standard exceeded	18/1	32/2	37/2
Number of days national 8-hour standard exceeded	4	15	20
CARBON MONOXIDE (CO)			
State standard: 1-hour/8-hour average, 20/9.1 ppm			
National standard: 1-hour/8-hour average, 35/9 ppm			
Maximum concentration (1-hour/8-hour average)	--/1.70	--/2.30	--/2.23
Number of days state 1-hour/8-hour standard exceeded	0/0	0/0	0/0
Number of days national 1-hour/8-hour standard exceeded	0/0	0/0	0/0
NITROGEN DIOXIDE (NO_2)			
State standard: 1-hour average, 0.25 ppm			
National standard: Annual average, 0.053 ppm			
Maximum concentration (1-hour average)	0.069	0.079	0.069
Annual average	0.014	0.014	0.014
Number of days state standard exceeded	0	0	0
SUSPENDED PARTICULATE MATTER (PM_{10})			
State standard: 24-hour average, 50µg/m^3			
National standard: 24-hour average, 150µg/m^3			
Maximum concentration (state/national)	61.0/63.0	90.0/87.0	106.0/104.0
Number of days state standard exceeded (measured/calculated[2])	5/NA	11/67.2	12/73.0
Number of days national standard exceeded (measured/calculated[2])	0/0	0/0	0/0
SUSPENDED PARTICULATE MATTER ($PM_{2.5}$)			
No separate state standard			
National standard: 24-hour average, 65 µg/m^3			
Maximum concentration (state/national)	62.5/62.5	77.0/77.0	65.8/65.8
Number of days national standard exceeded	0	2	1

[1] Based on ambient concentrations obtained from the Clovis-North Villa Avenue ambient air quality monitoring station.

ppm = parts per million by volume

µg/m3 = micrograms per cubic meter

NA = Insufficient Data Available

[2] Measured days are those days that an actual measurement was greater than the level of the state daily standard or the national daily standard. Measurements are typically collected every six days. Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year.

Sources: California Air Resources Board 2006

quality improvements over the past decade, the San Joaquin Valley failed to meet the previous federal ozone standard deadline and thus was downgraded from serious nonattainment to severe nonattainment designation by the U.S. EPA. To avoid being faced with sanctions, the SJVAB was voluntarily redesignated from severe nonattainment to extreme nonattainment, the federal government's worst air quality designation for ground-level ozone. An extreme nonattainment designation is not a delay in implementing air pollution controls, but allows the valley the opportunity to benefit from improved pollution controls for industry, as well as mobile-source controls being implemented by other agencies, without incurring immediate sanctions (SJVAPCD 2006).

Table 10-4
SJVAB Attainment Status Designations

Pollutant	National Designation	State Designation
Ozone, 1 hour	No Standard	Nonattainment/Severe
Ozone, 8 hour	Nonattainment/Serious[a]	Nonattainment
PM_{10}	Nonattainment/Serious[b]	Nonattainment
$PM_{2.5}$	Nonattainment[c]	Nonattainment
CO – Fresno Urbanized Area	Unclassified/Attainment	Unclassified/Attainment
Nitrogen dioxide	Unclassified/Attainment	Attainment
Sulfur dioxide	Unclassified/Attainment	Attainment
Lead (particulate)	No designation	Attainment
Hydrogen sulfide	No federal standard	Unclassified
Sulfates	No federal standard	Attainment
Visibility-reducing particulates	No federal standard	Unclassified

A On April 30, 2007 the Governing Board of the San Joaquin Valley Air Pollution Control District voted to request EPA to reclassify the San Joaquin Valley Air Basin as extreme nonattainment for the federal 8-hour ozone standards. The California Air Resources Board, on June 14, 2007, approved this request. This request must be forwarded to EPA by the California Air Resources Board and would become effective upon EPA final rulemaking after a notice and comment process; it is not yet in effect..

B Although EPA has determined that the San Joaquin Valley Air Basin has attained the federal PM 10 standards, their determination does not constitute a redesignation to attainment per section 107(d)(3) of the Federal Clean Air Act. The Valley will continue to be designated nonattainment until all of the Section 107(d)(3) requirements are met..

C The Valley is designated nonattainment for the 1997 PM 2.5 federal standards. EPA designations for the 2006 PM 2.5 standards will be finalized in December 2009. The District has determined, as of the 2004-06 PM 2.5 data, that the Valley has attained the 1997 24-Hour PM 2.5 standard.

Source: SJVAPCD 2008

Toxic Air Contaminants

Toxic air contaminants (TACs) are regulated through implementation of federal and state laws. Federal law uses the term "hazardous air pollutants" (HAPs) to refer to the same types of compounds considered as TACs under state law. Both terms encompass essentially the same compounds. For purposes of this report, the term "TACs" will be used when referring to these pollutants. It is important to note that TACs are not considered criteria pollutants in that the federal and California Clean Air Acts do not address them specifically through the setting of NAAQS or CAAQS. However, enforcement of the NAAQS and CAAQS for the control of criteria pollutants, such as ozone and PM, can result in reducing airborne emissions of

TACs. For example, controls on volatile organic compound emissions to attain the ozone standard can significantly reduce emissions of TACs from stationary sources. The following is a summary of the major current federal and state regulations and programs for controlling TACs.

Federal HAP/TAC Program

Title III of the CAA requires the U.S. EPA to promulgate National Emissions Standards for Hazardous Air Pollutants (NESHAP) for certain categories of sources that emit one or more pollutants identified as HAPs/TACs. Emission standards may differ between "major sources" and "area sources" of TACs. Major sources are defined as stationary sources with the potential to emit more than 10 tons per year (TPY) of any TAC or more than 25 TPY of any combination of TACs; all other sources are considered area sources. Promulgation of the emission standards involves two phases. In the first phase (1992–2000), the U.S. EPA developed technology-based emission standards designed to produce the maximum emission reduction achievable. These standards are generally referred to as requiring Maximum Achievable Control Technology. For area sources, the standards may be different, based on generally available control technology. In the second phase (2001–2008), the U.S. EPA is required to promulgate health risk–based emissions standards where such standards are deemed necessary to address risks remaining after implementation of the technology-based NESHAP standards.

The 1990 amendments to the CAA required the U.S. EPA to promulgate vehicle or fuel standards containing reasonable requirements to control toxic emissions, applying at a minimum to benzene and formaldehyde. Performance criteria were established to limit mobile-source emissions of toxics, including benzene, formaldehyde, and 1,3-butadiene. In addition, Section 219 of the CAA also required the use of reformulated gasolines in selected U.S. cities (those with the most severe ozone nonattainment conditions) to further reduce mobile-source emissions, including toxics.

State and Local TAC Programs

The ARB works in partnership with the local air districts to enforce regulations that reduce TACs in the state. It has authority for motor vehicles, fuels, and consumer products. The ARB identifies the TACs, researches prevention or reduction methods, adopts standards for control, and enforces the standards. The local air districts have the authority over stationary or industrial type sources. SJVAPCD Rule 2010 requires permits for all source operations that may emit TACs. All projects that require air quality permits from the SJVAPCD are evaluated for TAC emissions (SJVAPCD 1998). The SJVAPCD limits emissions and public exposure to TACs through a number of programs. The SJVAPCD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. It requires a comprehensive health risk assessment for facilities that are put in the significant risk category under the Assembly Bill (AB) 2588 Program (Air Toxics "Hot Spot" Information and Assessment Act of 1987).

The ARB identified particulate emissions from diesel-fueled engines (diesel PM) as a TAC in August 1998. Diesel PM is currently the ARB's primary TAC of concern for mobile sources, in part because, of all controlled TACs, diesel PM emissions are estimated to be responsible

for approximately 70% of the total ambient TAC risk (ARB 2000). In 2000, the ARB developed and approved the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* and the *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines*. The ARB is now implementing an aggressive plan to require cleaner diesel fuel and cleaner diesel engines and vehicles (ARB 2002) and is currently developing regulations designed to reduce diesel PM emissions from diesel-fueled engines and vehicles. The goal of each regulation is to make diesel engines as clean as possible by establishing state-of-the-art technology requirements or emission standards to reduce diesel PM emissions. These regulations require substantial reductions in diesel PM emissions beginning with the 2004 model year. Additional more stringent standards will apply to engines starting in the 2007 model year. Off-road vehicles will come under more stringent regulation beginning with the 2005 model year. Each of these sets of regulations will serve to significantly reduce diesel PM emissions and long-term human health risks attributable to diesel-fueled vehicles and equipment.

The California State Legislature has also examined TAC hazards and has adopted several bills to control TACs. Implementation of state-adopted legislation pertaining to the control of TACs is the responsibility of the ARB and local air pollution control districts. The most important legislation applicable to the proposed project is summarized below.

The Tanner Toxics Act

The Tanner Toxics Act established the California toxic air contaminant control program (AB 1807, Health and Safety Code Section 39666 et seq.) to identify and control TACs. Under the act, the ARB is required to identify a substance as a TAC based on the review of the scientific data and the recommendations by both the Office of Environmental and Health Hazard Assessment and the Scientific Review Panel. After designation, the ARB investigates appropriate measures to limit emissions of the TACs. These measures may include emission limitations, control technologies, operation and maintenance requirements, closed-system engineering, cost, or substitution of compounds. The ARB then prepares a report on the appropriate degree of regulation and adopts Air Toxics Control Measures. These control measures are the minimum regulations that must be imposed by each of the local air districts in the form of regulations. Districts must adopt rules that are at least as stringent as those of the state.

Air Toxics "Hot Spots" Information and Assessment Act

The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) is a state law enacted in 1987. The law requires certain facilities to submit information regarding emissions of more than 550 TACs to their local air pollution control districts. The act addresses public concerns that emissions from individual facilities might cause local concentration of air toxics "hot spots" at a level where individuals may be exposed to an excess risk of adverse health effects. The program requires facilities to notify all exposed persons if it is determined that there is a significant health risk. AB 2588 was amended in 1993 by Senate Bill (SB) 1731, the Facility Toxic Air Contaminant Risk Reduction Audit and Plan. In accordance with SB 1731, local air districts are required to establish a program to reduce risks from existing facilities that are deemed to pose a significant health risk.

Toxic Emissions Near Schools Program (AB 3205/SB 352)

Assembly Bill (AB) 3205 (Health and Safety Code Sections 42301.6–42301.9) addresses stationary sources of hazardous air pollutants near schools. It requires public notice to the parents or guardians of children enrolled in any school located within one-quarter mile of the source and to each address within a 1,000-foot radius of a TAC source. Senate Bill (SB) 352 (Education Code Section 17213, Public Resources Code Section 21151.8) expands previous requirements to review sources of TACs near school sites. SB 352 directs school districts to include in the school site analysis any emissions sources, including, but not limited to, freeways and other busy traffic corridors, large agricultural operations, and rail yards within one-quarter mile of a school site. SB 352 requires that any school site located within 500 feet of the edge of the closest travel lane of a freeway or other busy traffic corridor be reviewed for potential health risks.

Odors

Although offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable stress among the public and often generating citizen complaints to local governments and the SJVAPCD. The SJVAPCD has determined some common types of facilities that have been known to produce odors, including wastewater treatment facilities, chemical manufacturing plants, painting/coating operations, feed lots/dairies, composting facilities, landfills, and transfer stations. Because offensive odors rarely cause any physical harm and no requirements for their control are included in state or federal air quality regulations, the SJVAPCD has no rules or standards related to odor emissions other than its nuisance rule. Any actions related to odors are based on citizen complaints to local governments and the SJVAPCD (SJVAPCD 1998).

Two situations increase the potential for odor problems. The first occurs when a new odor source is located near existing sensitive receptors. The second occurs when new sensitive receptors are developed near existing sources of odor. In the first situation, the SJVAPCD recommends operational changes, add-on controls, process changes, or buffer zones where feasible to address odor complaints. In the second situation, the potential conflict is considered significant if the project site is at least as close as any other site that has already experienced significant odor problems related to the odor source. For projects locating near a source of odors where there is no nearby development that may have filed complaints, and for odor sources locating near existing sensitive receptors, the SJVAPCD requires the determination of potential conflict to be based on the distance and frequency at which odor complaints from the public have occurred in the vicinity of a similar facility (SJVAPCD 1998).

Greenhouse Gas Emissions & Climate Change

The earth's climate has been warming for the past century. It is believed that this warming trend is related to the release of certain gases into the atmosphere. The greenhouse gases (GHG) include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and hydrofluorocarbons. GHGs most typically associated with community development include emissions of CO_2 and, to a lesser extent, CH_4. Greenhouse gases absorb infrared energy that would otherwise escape from the earth. As the infrared energy is absorbed, the air surrounding the earth is heated. An overall warming trend has been recorded since the late 19th century,

with the most rapid warming occurring over the past two decades. The 10 warmest years of the last century all occurred within the last 15 years. It appears that the decade of the 1990s was the warmest in human history. Human activities have been attributed to an increase in the atmospheric abundance of greenhouse gases. There are uncertainties as to exactly what the climate changes will be in various local areas of the earth, and what the effects of clouds will have in determining the rate at which the mean temperature will increase. There are also uncertainties associated with the magnitude and timing of other consequences of a warmer planet: sea level rise, spread of certain diseases out of their usual geographic range, the effect on agricultural production, water supply, sustainability of ecosystems, increased strength and frequency of storms, extreme heat events, air pollution episodes, and the consequence of these effects on the economy (ARB 2005, 2006).

Emissions of GHGs contributing to global climate change are largely attributable to human activities associated with industrial/manufacturing, utility, transportation, residential, and agricultural sectors. About three-quarters of human emissions of CO_2 to the global atmosphere during the past 20 years are due to fossil fuel burning. Atmospheric concentrations of CO_2, CH_4, and N_2O have increased 31 percent, 151 percent, and 17 percent respectively since the year 1750 (CEC 2008). GHG emissions are typically expressed in Carbon dioxide-equivalents (CO_2e), based on the GHG's Global Warming Potential (GWP). The GWP is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. For example, one ton of CH_4 has the same contribution to the greenhouse effect as approximately 21 tons of CO_2. Therefore, CH_4 is a much more potent GHG than CO_2.

Worldwide, California is ranked as the 12th largest emitter of GHGs (CEC 2008). Based on the most recent GHG emissions inventory, California's gross annual emissions of GHGs in 2004 totaled approximately 497 million metric tons (MMT) of CO_2e. Most of California's emissions, approximately 81 percent, consist of carbon dioxide produced from fossil fuel combustion (CEC 2006, 2007). The transportation sector is the single largest category of California's GHG emissions, accounting for approximately 39 percent of the state's total GHG emissions, followed by electricity consumption (from both in-state and out-of-state providers), which accounts for a total of roughly 28 percent of the state's total GHG emissions. The contribution from each of the various other use sectors contribute roughly 6 to 10 percent each to the total GHG emissions inventory (CEC 2008).

International and National Efforts

International and Federal legislation have been enacted to deal with climate change issues. The Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change (IPCC) to assess the scientific, technical and socioeconomic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation. The most recent reports of the IPCC have emphasized the scientific consensus around the evidence that real and measurable changes to the climate are occurring, that they are caused by human activity, and that significant adverse impacts on the environment, the economy, and human health and welfare are unavoidable (CAPCOA 2008).

In October 1993, President Clinton announced his Climate Change Action Plan, which had a goal to return greenhouse gas emissions to 1990 levels by the year 2000. This was to be accomplished through 50 initiatives that relied on innovative voluntary partnerships between the private sector and government aimed at producing cost-effective reductions in greenhouse gas emissions. On March 21, 1994, the United States joined a number of countries around the world in signing the United Nations Framework Convention on Climate Change. Under the Convention, governments agreed to gather and share information on greenhouse gas emissions, national policies, and best practices; launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change. These efforts have been largely policy oriented. In addition to the national and international efforts described above, many local jurisdictions have adopted climate change policies and programs. However, thus far little has been done to assess the significance of the affects new development projects may have on climate change (CAPCOA 2008).

State of California

The State of California has been studying the impacts of climate change since 1988, when AB4420 was approved. This legislation directed the CEC, in consultation with the CARB and other agencies, to study the implications of global warming on California's environment, economy, and water supply. The CEC was also directed to prepare and maintain the state's inventory of GHG emissions. That bill directed the CARB to adopt regulations to achieve the maximum feasible and cost-effective reduction of greenhouse gas emissions from motor vehicles. CARB staff's proposal implementing these regulations was approved by the Air Resources Board in September, 2004. With implementation, the average reduction of greenhouse gases from new California cars and light trucks will be about 22 percent in 2012 and about 30 percent in 2016, compared to today's vehicles (CARB 2006).

Senate Bill 1771

Senate Bill 1771, chaptered in September of 2000, specified the creation of the non-profit organization, the California Climate Action Registry. The Registry helps various California entities' to establish GHG emissions baselines. Also, the Registry enables participating entities to voluntarily record their annual GHG emissions inventories.

Executive Order S-3-05

On June 1, 2005, Governor Schwarzenegger issued Executive Order S-3-05. It included the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels. To meet the targets, the Governor directed the Secretary of the California Environmental Protection Agency (CalEPA) to coordinate with the Secretary of the Business, Transportation and Housing Agency, Secretary of the Department of Food and Agriculture, Secretary of the Resources Agency, Chairperson of the CARB, Chairperson of the CEC and President of the Public Utilities Commission on development of a Climate Action Plan. The Secretary of CalEPA leads a Climate Action Team (CAT) made up of representatives from the agencies listed above to implement global warming emission reduction programs identified in the Climate Action Plan and report on the progress made

toward meeting the statewide greenhouse gas targets that were established in the Executive Order (CAPCOA 2008).

California Global Warming Solutions Act of 2006 (AB 32)

In 2006, the California State Legislature adopted Assembly Bill 32 (AB32), California Global Warming Solutions Act of 2006. AB32 establishes a cap on statewide greenhouse gas emissions and sets forth the regulatory framework to achieve the corresponding reduction in statewide emissions levels. AB32 charges the CARB, the state agency charged with regulating statewide air quality, with implementation of the act. The regulatory steps laid out in AB32 require CARB to: 1) adopt early action measures to reduce GHGs; 2) to establish a statewide greenhouse gas emissions cap for 2020 based on 1990 emissions; 3) to adopt mandatory reporting rules for significant source of greenhouse gases; and to adopt a scoping plan indicating how emission reductions will be achieved via regulations, market mechanisms and other actions; and 4) to adopt the regulations needed to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gases. In addition, AB32 requires that by January 1, 2008, the State Board shall determine what the statewide greenhouse gas emissions inventory was in 1990, and approve a statewide greenhouse gas emissions limit that is equivalent to that level, to be achieved by 2020. While the level of 1990 GHG emissions has not yet been approved, ARB's most recent emission inventory indicates that California had annual emissions of 436 million metric tons (MMT) of CO2*e* in 1990 and 497 MMT CO2*e* in 2004 (CAPCOA 2008).

The regulatory timeline laid out in AB32 requires that by July 1, 2007, CARB adopt a list of discrete early action measures, or regulations, to be adopted and implemented by January 1, 2010. These actions will form part of the State's comprehensive plan for achieving greenhouse gas emission reductions. In June 2007, CARB adopted three discrete early action measures. These three new proposed regulations meet the definition of "discrete early action greenhouse gas reduction measures," which include the following: a low carbon fuel standard; reduction of HFC-134a emissions from non-professional servicing of motor vehicle air conditioning systems; and improved landfill methane capture. CARB estimates that by 2020, the reductions from those three discrete early action measures would be approximately 13 to 26 MMT CO_2e. CARB evaluated over 100 possible measures identified by the CAT for inclusion in the list of discrete early action measures. On October 25, 2007 CARB gave final approval to the list of Early Action Measures, which includes nine discrete measures and 35 additional measures, all of which are to be enforceable by January 1, 2010. AB32 requires that by January 1, 2009, CARB adopt a scoping plan indicating how emission reductions will be achieved via regulations, market mechanisms and other actions (CAPCOA 2008).

Senate Bill 97

Senate Bill 97, signed in August 2007, acknowledges that climate change is an important environmental issue that requires analysis under CEQA. This bill directs the Governor's Office of Planning and Research to prepare, develop, and transmit to the Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, by July 1, 2009. The Resources Agency is required to certify or adopt those guidelines by January 1, 2010. This bill also protects projects funded by the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006, or the Disaster Preparedness and

Flood Protection Bond Act of 2006 (Proposition 1B or 1E) from claims of inadequate analysis of GHG as a legitimate cause of action. This latter provision will be repealed on January 1, 2010. Thus, this "protection" is highly limited to a handful of projects and for a short time period (CAPCOA 2008).

Significance Criteria

The following thresholds of significance, obtained from the SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts* (SJVAPCD 2002), are used to determine whether implementation of the proposed project would result in a significant air quality impact:

- Short-term Emissions of Particulate Matter (PM)—Construction impacts associated with the proposed project would be considered significant if the feasible control measures for construction in compliance with Regulation VIII as listed in the SJVAPCD guidelines are not incorporated or implemented.
- Short-term Emissions of Ozone Precursors (ROG and NO_x)—Construction impacts associated with the proposed project would be considered significant if the project generates emissions of ROG or NO_X that exceeds 10 TPY.
- Long-term Emissions of Ozone Precursors (ROG and NO_x)—Operational impacts associated with the proposed project would be considered significant if the project generates emissions of ROG or NO_X that exceeds 10 TPY.
- Hazardous Air Pollutants—Exposure to HAPs would be considered significant if the probability of contracting cancer for the Maximally Exposed Individual would exceed 10 in 1 million or would result in a Hazard Index greater than 1.
- Odorous Emissions—Odor impacts associated with the proposed project would be considered significant if the project has the potential to frequently expose members of the public to objectionable odors.
- Local Mobile-Source CO Concentrations—Local mobile source impacts associated with the proposed project would be considered significant if the project contributes to CO concentrations at receptor locations in excess of the CAAQS (i.e., 9.0 ppm for 8 hours or 20 ppm for 1 hour).

Significant Impacts and Mitigation Measures

Impact 10.1:

Short-term emissions of airborne particulate matter will result from project construction activity.

The SJVAPCD emphasizes implementation of effective and comprehensive control measures rather than requiring a detailed quantification of construction emissions. Construction generated emissions are "short-term", temporary in duration, and posses the potential to represent a significant air quality impact, particularly PM_{10} emissions. Construction emissions may potentially result in substantial increases in localized PM concentrations, adverse health

effects, and nuisance concerns such as reduced visibility and soiling of exposed surfaces. PM emissions are typically greatest during initial site preparation, including grading and excavation activities, as well as vehicle travel on unpaved roadways and surfaces.

The proposed project does not include SJVAPCD-recommended measures for the control of PM emissions for construction-related activities. Because the significance of short-term PM emissions is dependent on whether or not SJVAPCD-recommended control measures are implemented, short-term construction-generated PM emissions resulting from implementation of the proposed project would be considered a potentially significant air quality impact.

Mitigation Measures

10.1(a) Demolition and construction activities shall comply with all applicable SJVAPCD Regulation VIII for the control of fugitive dust emissions. Demolition activities would also be required to comply with SJVAPCD Rule 4002 to identify the presence of asbestos-containing building materials to be removed prior to demolition. In accordance with SJVAPCD Regulation VIII, a Dust Control Plan shall be prepared and submitted to the Air Pollution Control Officer (APCO) prior to the start of construction. Written notification to the APCO shall also be provided within 10 days prior to the commencement of earthmoving activities. The Dust Control Plan shall describe all fugitive dust control measures to be implemented before, during, and after any dust generating activity. SJVAPCD-recommended dust control measures include (but are not necessarily limited to): stabilization of all disturbed areas and unpaved construction roads; covering and wetting of transported materials; removal of accumulated dirt and trackout from adjacent streets; suspension of grading and excavation activities during periods of high winds; and limitations on visible dust emissions and the maximum daily area of ground disturbance.

Level of Significance

Implementation of the above mitigation measure would reduce airborne particulate emissions by approximately 75 percent. With implementation of recommended mitigation measures, the SJVAPCD considers short-term air quality impacts to be less-than-significant.

Impact 10.2:

Short-term emissions of ozone precursor pollutants and diesel-exhaust particulates will result from project construction activity.

Construction activities are also a source of ozone-precursor pollutants (i.e., ROG and NO_x), as well as diesel-exhaust PM, generated by the use of off-road construction equipment. As with construction-generated emission of PM, construction generated emissions from off-road equipment are also "short-term" and temporary in duration. Construction-generated emissions of organic gases can also result from the use of solvents in adhesives, non-waterbase paints, thinners, and some insulating and caulking materials. Asphalt use in paving also emits organic gas for a short time after its application.

Construction of the proposed facilities is expected to begin in approximately 5 to 7 years. The duration of construction is typically about 2 years; therefore, the facilities are anticipated to be completed and operational in approximately 7 to 9 years. The actual timing of construction

will be dependent upon enrollment growth and funding availability. However, for modeling purposes and to ensure a conservative analysis, construction of the proposed facilities were assumed to occur simultaneously over a 2-year period. Short-term emissions of ROG and NO_x were estimated using the Urbemis2007 (v9.2.4) computer program. Modeling was conducted, based on Urbemis2007 default equipment type/usage parameters. Construction schedules for site preparation activities (i.e., demolition, grading, and asphalt paving) were assumed to occur within the initial year of construction, based on default Urbemis2007 construction schedules, adjusted to reflect an anticipated year 2015 opening date. The building construction phase, including application of architectural coatings, was assumed to occur over the remainder of the estimated minimum two-year construction period (i.e., approximately 18 months total duration). Estimated maximum annual construction-generated emissions are summarized in Table 10-5.

Table 10-5
Construction-Generated Emissions

Construction Phase	Estimated Emissions (tons/year) [a]	
	ROG	**NOx**
Year 2013		
Demolition [b]	0.04	0.32
Site Preparation/Grading [c]	0.15	1.22
Asphalt Paving [c]	0.02	0.10
Total:	0.21	1.64
Year 2014		
Facility Construction [d]	0.50	2.29
Architectural Coatings	4.30	0.00
Total:	4.80	2.29
Year 2015		
Facility Construction [d]	0.26	1.22
Architectural Coatings	2.51	0.00
Total:	2.77	1.23
Maximum Annual Emissions [e]:	**4.80**	**2.29**
SJVAPCD-Recommended Significance Thresholds	10	10

a. Emissions were calculated using the URBEMIS2007 (v9.2.4) computer program. Assumes the simultaneous construction of all proposed facilities (i.e., elementary school, middle school, and high school) over an approximate 2 year construction period, assuming a fall year 2015 opening date.

b. Assumes demolition of nine existing structures with a total estimated cubic feet of 810,000 cubic feet over an approximate 1.2 month period (Urbemis 2002). Equipment type/usage assumptions based on Urbemis2007 default model parameters.

c. Based on a total developed area of 160.46 acres and one-quarter of the project site (i.e., 40 acres) actively disturbed per day. Based on Urbemis2007 default construction equipment type/usage requirements and schedule (adjusted to anticipated construction start year 2013).

d. Facility construction and architectural coating application assumed to occur simultaneously over the remainder of the construction period, subsequent to completion of grading and asphalt paving phases. Equipment type/usage assumptions based on Urbemis2007 default model parameters. Based on combined structural square footage of approximately 435,500 square feet.

e. Assumes that facility construction and architectural coating phases would occur simultaneously within the same year.

Refer to Appendix A for modeling assumptions and results.

Based on the modeling conducted, maximum emissions of ROG and NOx would be generated during the latter phases of construction, due to off-gassing (i.e., evaporative emissions)

anticipated to occur during the application of architectural coatings and use of off-highway construction equipment.

However, as previously discussed, the construction schedule for the proposed project has not yet been determined. Depending on the final construction schedule and equipment requirements, predicted annual emissions could potentially exceed SJVAPCD's significance thresholds, particularly if multiple facilities and onsite grading were to occur simultaneously, or if large amounts of fill/borrow material would be transported off/on site. As a result, this impact would be considered potentially significant.

Mitigation Measures

10.2(a) In accordance with SJVAPCD Indirect Source Review Rule (Rule 9510), exhaust emissions for construction equipment greater than fifty (50) horsepower used or associated with the development project shall be reduced by the following amounts from the statewide average as estimated by the ARB: (a) 20 percent of the total NOx emissions, and (b) 45 percent of the total PM_{10} exhaust emissions. For example, construction emissions may be reduced by using less-polluting construction equipment, which can be achieved by utilizing add-on controls, or by use of cleaner fuels (i.e., biodiesel, emulsified diesel), ARB-certified alternative fueled engines, or use of construction equipment that have engines that meet the current off-road engine emission standard (as certified by the ARB). Use of multiple technologies/emission reduction strategies may be required to achieve required emissions reductions. Additional information pertaining to ARB-certified emission reduction technologies can be obtained by contacting the SJVAPCD at (559) 230-5820 or the ARB's website at: http://www.arb.ca.gov/msprog/offroad/cert/cert.php;

10.2(b) Prior to starting construction on the project, the District shall work with the SJVAPCD institute measures to reduce NOx emissions such that the project falls within the SJVAPCD's significance threshold of 10 tons/year. These measures may include but are not limited to replacing fossil-fueled equipment with electrically driven equivalents; limiting the operational hours of heavy duty equipment and/or the amount of equipment in use at any one time; limiting the maximum daily area of ground disturbance; curtailment of construction activity during periods of high ambient pollutant concentration; and minimizing equipment idling time;

Impact 10.3:

Long-term emissions of ozone precursor pollutants will result from project operations.

In accordance with SJVAPCD-recommended methodologies for the analysis of long-term air quality impacts, operational emissions of ROG and NO_X attributable to the proposed project were estimated using URBEMIS2007 (Version 9.2.4) computer program, based on the default parameters contained in the model for Fresno County . The URBEMIS computer program is designed to model stationary, area, and mobile-source emissions for land use development

projects. Trip generation rates were based on data obtained from the transportation analysis prepared for this project (Peters Engineering Group 2007). Pass-by and captured-trip reductions are negligible with respect to schools and, therefore, were not applied. Estimated annual emissions are summarized in Table 10-6.

Table 10-6
Operational Emissions

Project Alternative/Source	Estimated Emissions (tons/year)	
	ROG	NOx
Natural Gas Use	0.06	0.77
Landscape Maintenance	0.03	0.01
Architectural Coatings	0.47	--
Mobile Sources	12.62	14.02
Total	13.18	14.80
SJVAPCD-Recommended Significance Thresholds	10	10

Emissions were calculated using the URBEMIS2002 (v8.7) computer program. Vehicle trip generation rates were adjusted, based on data obtained from the traffic analysis prepared for this project. Estimated emissions do not include pass-by or internally captured trips., which are considered minimal for schools. Refer to Appendix A for modeling assumptions and results.

Based on the modeling conducted, estimated operational emissions associated with buildout of the proposed project would be approximately 13.2 tons per year (tons/year) of ROG, and 14.8 tons/year of NO_X. As indicated in Table 10-6, operational emissions of ROG and NO_X could potentially exceed SJVAPCD-recommended significance threshold of 10 tons/year. As a result, this impact is considered potentially significant.

Mitigation Measures

10.3(a) Trees shall be selected and located to protect the buildings from energy consuming environmental conditions and to shade paved areas. Trees shall be deciduous to allow shading of structures during the summer months and increased solar heating during the winter months. Structural soil should be used under paved areas to improve tree growth: for Structural Soil see http://www.hort.cornell.edu/uhl/outreach/csc and for Tree Selection see http://www.ufei.org.

10.3(b) The District shall work with the City of Fresno in designing the project site to facilitate safe and convenient pedestrian and bicycle connections to adjacent neighborhoods.

10.3(c) Energy-conserving features shall be included in the project sufficient to exceed Title 24 requirements by 20 percent. Energy conservation measures include both energy conservation through design and operational energy conservation. Examples include (but are not limited to): Increased energy efficiency (above California Title 24 Requirements) (see http://www.energy.ca.gov/title24/); energy efficient windows (double pane and/or Low-E); high-albedo (reflecting) roofing material; energy efficient lighting, appliances, heating and cooling systems; programmable thermostat(s) for all heating and cooling systems; awnings or other shading mechanism for windows; walkway overhangs; and installation of ozone-destruction catalysts on air conditioning systems (when available).

10.3(d) Exits to adjoining streets should be designed to reduce time to re-enter traffic from the project site.

10.3(e) If public transit is provided on roadways located adjacent to the project site, transit stop improvements shall be incorporated on streets adjacent to the site to promote the use of transit to and from the project site during normal school hours, as well as during special events held at the campus. Examples of such improvements include providing information for posting of public transit schedules, benches, shelters, and lighting.

10.3(f) To reduce neighborhood vehicle travel to nearby park facilities, general-use recreational facilities at the project site shall be made available for public use during the daytime hours when school is not in session (i.e., weekends), subject to District approval.

Level of Significance

As noted earlier in this section, a majority of the project-generated emissions would be associated with the operation of mobile sources. Although measures to reduce mobile-source emissions, such as promotion of transit use to and from the site, have been included, emissions from mobile sources (including school buses) are regulated by the ARB. Measures incorporated to promote pedestrian access and transit use would reduce mobile-source emissions by approximately 1 percent (SMAQMD 2007). Area source emissions, such as the use of natural gas appliances and landscape maintenance activities would constitute less than approximately 5 percent of the total project-generated emissions. Various mitigation measures have, however, been incorporated to reduce onsite operational emissions from area sources. Such measures would reduce total operational emissions from area sources by approximately 5 percent. However, because project-generated operational emissions would be primarily associated with on-road mobile sources, mitigated emissions would still be anticipated to exceed SJVAPCD-recommended significance thresholds of 10 tons/year. As a result, this impact is considered significant and unavoidable.

Impact 10.4:

The project could result in local mobile-source CO concentrations.

Local mobile source CO emissions near roadway intersections are a direct function of traffic volume, speed, and delay. Carbon monoxide transport is extremely limited; it disperses rapidly with distance from the source under normal meteorological conditions. Under certain meteorological conditions, however, CO concentrations close to a congested roadway or intersection may reach unhealthy levels, affecting local sensitive receptors (residents, school children, hospital patients, the elderly, etc.). As a result, the SJVAPCD recommends analysis of CO emissions at a local rather than regional level. Local CO concentrations at intersections projected to operate at level of service (LOS) D, or better, do not typically exceed national or state ambient air quality standards. For this reason, modeling of CO concentrations is typically recommended for receptors located near signalized intersections that are projected to operate at LOS E or F.

The traffic analysis prepared for the proposed project included an analysis of predicted levels of service for roadway segments that would be primarily affected by the proposed project. Based on the analysis conducted, roadway segments in the project site would not be anticipated to operate at unacceptable levels of service (i.e., LOS E, or worse) under near-term or future cumulative conditions. Based on the findings of the traffic analysis, the planned roadway network is expected to be adequate to accommodate the proposed project. However, further traffic impact studies would be required, including intersection-level analyses, prior to development of the site. Mitigation measures have been incorporated that would require that project-specific traffic impact studies be conducted prior to submitting improvement plans for each phase of development. Given that predicted near-term and future cumulative LOS at affected intersections is unknown at this time, analysis of localized mobile-source CO concentrations at primarily affected intersections cannot be conducted at this time. For this reason, this impact is considered potentially significant.

Mitigation Measures

10.4(a) The District shall be required to perform a project-specific traffic impact study prior to submitting improvement plans for each phase of development. Based on the findings of the traffic impact study to be prepared, an analysis of localized mobile-source carbon monoxide (CO) concentrations at adversely affected intersections that are projected to operate at unacceptable levels of service (LOS E, or worse) shall be conducted. Analysis of localized mobile-source CO concentrations shall be conducted in accordance with SJVAPCD-recommended methodologies. Appropriate traffic mitigation measures shall be incorporated, as deemed necessary, to ensure that predicted localized concentrations of CO would not exceed applicable ambient air quality standards at modeled receptor locations.

Level of Significance

With implementation of the above mitigation measure, transportation improvements would be required in the event that predicted localized concentrations of CO would exceed applicable ambient air quality standards, sufficient to reduce localized concentrations from mobile sources to below applicable standards. With mitigation, this impact would be considered less than significant.

Impact 10.5:

The project will contribute cumulatively to regional and local air quality impacts and greenhouse gas emissions

In accordance with 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 (SJVAPCD 1998). As noted in Impact 10.3, implementation of the proposed project could, depending on how quickly development of the proposed facilities occurs, result in significant project-related impacts to regional air quality. Therefore, project-generated emissions would be considered to contribute, on a cumulative basis, to existing and future nonattainment conditions within the SJVAB. This impact is, therefore, considered significant.

In addition, localized increases in mobile-source CO concentrations may also occur, as noted in Impact 10.4, which could also contribute on a cumulative basis to adverse air quality conditions that could exceed applicable standards at nearby receptors. Although short-term increases in diesel-PM would be considered less than significant, increases in diesel-PM could contribute, on a cumulative basis, to existing concentrations of diesel-PM within the region. As noted earlier in this report, diesel-PM emissions are estimated to account for approximately 70 percent of the total ambient air toxic risk (ARB 1998). As a result, the project's contribution to cumulative local air quality conditions would be considered significant.

In addition to increases of regional and local air pollutants, the project would also contribute to increases of greenhouse gas (GHG) emissions that are associated with global climate change. Estimated GHG emissions attributable to future development would be primarily associated with increases of carbon dioxide (CO_2) from mobile sources. Emissions of CO_2 are anticipated to constitute more than 90 percent of total mobile-source GHGs commonly associated with community development projects. To a lesser extent, other GHG pollutants, such as Methane (CH_4) generated by natural-gas combustion would typically have a minor contribution to overall GHG emissions (EPA 1996), or are not commonly associated with typical community development projects.

Estimated emissions of GHGs were calculated based on predicted increases in vehicle miles traveled attributable to the proposed development, obtained from the URBEMIS modeling conducted for this project, as well as energy usage rates and emission factors derived from reports prepared by the California Energy Commission (CEC 2007a,b 2008), the California Climate Action Registry (CCAR 2007) and the California Air Pollution Control Officers Association (CAPCOA 2007). To account for individual pollutants contribution to global warming, predicted emissions of GHGs are presented in CO_2 equivalent units of measure (CO_2e), expressed in metric tons/year, based on the global warming potential of each pollutant. Estimated emissions are summarized in Table 10-7. As shown, implementation of the proposed project would result in a predicted increase of approximately 13,488.7 tons/year of CO_2e. Approximately 83 percent of total CO_2e would be generated by mobile sources and the remaining approximately 17 percent of emissions would be associated with energy consumption. The incorporation of recommended mitigation measures designed to reduce mobile, as well as stationary sources of emissions, such as the encouragement of pedestrian oriented features, transit use, and energy-saving features would help to reduce emissions of GHGs. However, it is important to note that there are currently no thresholds established under federal, state or local laws for the evaluation of increases in GHGs associated with urban development.

Table 10-7
Estimated Greenhouse Gas Emissions

Source	Annual Emissions of CO_2e
Motor Vehicles	11,097.8
Electricity Use	1,553.2
Natural Gas Use	837.7
Total	13,488.7

Emissions from motor vehicles based on estimated increases in VMT obtained from the URBEMIS modeling conducted for this project. Stationary equipment emissions based on estimated increases in natural gas usage obtained from the Urbemis2007computer program and electrical usage rates and emission factors derived from multiple sources, including the California Energy Commission, California Climate Action Registry, and the California Air Pollution Control Officer's Association (CEC 2007a,b,2008, CCAR 2007, CAPCOA 2007).

Mitigation Measure

Implement Mitigation Measures listed under 10.1, 10.2, and 10.3

Level of Significance

With implementation of the Mitigation Measures listed under 10.1, 10.2 and 10.3, the project's contribution to cumulative air quality impacts and greenhouse gas emissions would be lessened. However, even with mitigation, operational emissions of ROG would still be anticipated to exceed the SJVAPCD's recommended significance threshold of 10 tons/year. Although localized concentrations of pollutants would not be anticipated to exceed applicable thresholds, with implementation of proposed mitigation measures, short-term construction-generated emission would still contribute, on a cumulative basis, to regional ambient concentrations of TACs, particularly diesel-PM. Given the regions existing and projected nonattainment conditions, this impact would be considered significant and unavoidable. With respect to greenhouse gas emissions, since there are currently no thresholds established under federal, state or local laws, this EIR takes a conservative approach and considers the cumulative contribution of the project to greenhouse gas emissions as a significant unavoidable impact.

Impacts Not Found to be Significant

Impact 10.6:

Short-term emissions of airborne particulate matter will result from project construction activity.

Particulate exhaust emissions from diesel-fueled engines (diesel-exhaust PM) were identified as a TAC by the ARB in 1998. Implementation of the proposed project would result in the generation of diesel PM emissions during construction from the use of off-road diesel equipment for site grading and excavation, paving, demolition, 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. For residential land uses, the calculation of cancer risk associated with exposure of to TACs are typically calculated based on a 70-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. For this reason, diesel-exhaust PM generated by project construction, in and of itself, would not be expected to create conditions where the probability of contracting cancer is greater than 10 in 1 million for nearby receptors. Long-term health risks associated with short-term construction activities would be considered less than significant.

Implementation of the proposed project would not result in the long-term operation of any major onsite stationary sources of toxic air contaminants. In addition, no major stationary or area sources of toxic air contaminants have been identified within an approximately 2 mile radius of the proposed project site (CHAPIS 2007). As a result, long-term operation of the proposed project would not be anticipated to result in the exposure of students or staff to

elevated concentrations of TACs that would exceed applicable thresholds. As a result, this impact is considered less than significant.

Mitigation Measure

No mitigation is required.

Level of Significance

This impact will be less than significant.

Impact 10.7:

The project will result in increased exposure to objectionable odors.

The construction of the proposed project would result in diesel exhaust emissions from on-site diesel equipment and evaporative emissions associated with the use of architectural coatings. Emissions from such sources may be considered objectionable to some individuals. However, emissions associated with short-term construction activities would be intermittent and temporary and would dissipate rapidly from the source with an increase in distance. As a result, substantial reoccurring emissions of odors during construction would not be anticipated to occur. Therefore, construction activities would not be anticipated to generate odors that would affect a substantial number of people.

No existing odorous emission sources are located in the vicinity of the proposed project site. In addition, the long-term operation of the proposed project would not involve the use of any major odor emission sources. Consequently, long-term operation of the proposed project would not be anticipated to result in the creation of or frequent exposure to an objectionable odor. Increased exposure of individuals to odors would, therefore, be considered less than significant.

Mitigation Measure

No mitigation is required.

Level of Significance

This impact will be less than significant.

Impact 10.8:

The project would not be anticipated to conflict with or obstruct implementation of applicable air quality plans.

As previously discussed, the proposed project is located within the jurisdiction of the SJVAPCD, which is currently designated as a nonattainment area for the national and state ozone and PM_{10} standards. In an attempt to achieve NAAQS and CAAQS and maintain air quality, the SJVAPCD has recently completed the following air quality attainment plans and reports: *2004 Extreme Ozone Attainment Demonstration Plan, 2003 PM_{10} Attainment Demonstration Plan, 2002-2005 Amended Ozone Rate of Progress Plan, 2000 Ozone Rate of Progress Report, 2001 Update to Ozone Attainment Demonstration Plan, 1997-1999 PM_{10} Progress Report*, and the *2003 PM_{10} Plan*. In coordination with the ARB and other

north/central California air districts, the SJVAPCD has also begun development of the *8-hour Ozone Attainment Demonstration Plan*. The emissions inventories contained in these plans are based on projected population growth and vehicle miles traveled for the region based, in part, on the predicted growth identified in regional and community plans. Major stationary sources of emissions are also accounted for in these plans.

Proposed projects resulting in an increase in population or employment growth beyond that identified in local air quality attainment plans may result in an increase in vehicle miles traveled (VMT) and associated mobile source emissions, which may not be accounted for in air quality attainment plans. Consequently, an increase in VMT beyond projections in local plans would typically be considered to result in an adverse incremental effect on the region's ability to attain and/or maintain state and national ambient air quality standards.

Implementation of the proposed project would not be anticipated to result in an increase in population growth. As a result, implementation of the proposed project would not be anticipated to result in an increase in VMT beyond that already assumed and accounted for in the emissions budgets used for development of air quality attainment plans. In addition, the proposed project would not result in the construction of any major stationary sources of emissions. Thus, implementation of the proposed project would not be anticipated to conflict with or obstruct implementation of applicable air quality plans. This impact is considered less than significant.

Mitigation Measure

No mitigation is required.

Level of Significance

This impact will be less than significant.

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Chapter
11

Noise

Setting

Introduction

Noise-related impacts associated with the project are identified in this chapter based upon a report prepared for this EIR by Ambient Air Quality & Noise Consulting (*Noise Impact Analysis for Proposed Fourth Education Center, Clovis Unified School District* – May 27, 2007). (See Appendix 11-1 for noise prediction modeling background information.)

Acoustic Fundamentals

Noise is often defined as unwanted sound. Sound is a mechanical form of radiant energy transmitted by pressure waves in the air. It is characterized by two parameters: amplitude (loudness) and frequency (tone).

Amplitude

Amplitude is the difference between ambient air pressure and the peak pressure of the sound wave. Amplitude is measured in decibels (dB) on a logarithmic scale. For example, a 10 dB sound is 10 times the pressure difference of a 0 dB sound; a 20 dB sound is 100 times the pressure difference of a 0 dB sound. Another feature of the decibel scale is the way in which sound amplitudes from multiple sources add together. A 65 dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). Amplitude is interpreted by the ear as corresponding to different degrees of loudness. Laboratory measurements correlate a 10 dB increase in amplitude with a perceived doubling of loudness and establish a 3 dB change in amplitude as the minimum audible difference perceptible to the average person.

Frequency

Frequency is the number of fluctuations of the pressure wave per second. The unit of frequency is the Hertz (Hz). One Hz equals one cycle per second. The human ear is not equally sensitive to sound of different frequencies. Sound waves below 16 Hz or above 20,000 Hz cannot be heard at all, and the ear is more sensitive to sound in the higher portion of this range than in the lower. To approximate this sensitivity, environmental sound is usually measured in A-weighted decibels (dBA). On this scale, the normal range of human hearing extends from about 10 dBA to about 140 dBA. Common noise levels are depicted in Figure 11-1.

Noise Descriptors

The intensity of environmental noise fluctuates over time, and several descriptors of time-averaged noise levels are used. The three most commonly used descriptors are Leq, Ldn, and CNEL. The energy-equivalent noise level, Leq, is a measure of the average energy content (intensity) of noise over any given period. Many communities use 24-hour descriptors of noise levels to regulate noise. The day-night average noise level, Ldn, is the 24-hour average of the noise intensity, with a 10-dBA "penalty" added for nighttime noise (10 p.m. to 7 a.m.) to account for the greater sensitivity to noise during this period. CNEL, the community equivalent noise level, is similar to Ldn but adds an additional 5-dBA penalty for evening noise (7 p.m. to 10 p.m.). Noise analyses often depend on measurements of Lmax, the maximum instantaneous noise level during a specific period of time (sometimes referred to as the "peak noise level"), and Lmin, the minimum instantaneous noise level during a specific period. Common noise descriptors are summarized in Table 11-1.

Characteristics of Sound Propagation and Attenuation

Noise can be generated by a number of sources, including mobile sources, such as automobiles, trucks and airplanes, and stationary sources, such as construction sites, machinery, and industrial operations. Noise generated by mobile sources typically attenuates at a rate between 3.0 to 4.5 dBA per doubling of distance. The rate depends on the ground surface and the number or type of objects between the noise source and the receiver. Hard and flat surfaces, such as concrete or asphalt, have an attenuation rate of 3.0 dBA per doubling of distance. Soft surfaces, such as uneven or vegetated terrain, have an attenuation rate of about 4.5 dBA per doubling of distance. Noise generated by stationary sources typically attenuates at a rate of 6.0 to 7.5 dBA per doubling of distance.

Sound levels can be reduced by placing barriers between the noise source and the receiver. In general, barriers contribute to decreasing noise levels only when the structure breaks the "line of sight" between the source and the receiver. Buildings, concrete walls, and berms can all act as effective noise barriers. Wooden fences or broad areas of dense foliage can also reduce noise, but are less effective than solid barriers.

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks demanding concentration or coordination. Hearing loss can occur at the highest noise intensity levels. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases. The acceptability of noise and the threat to public well-being are the basis for land use planning policies preventing exposure to excessive community noise levels.

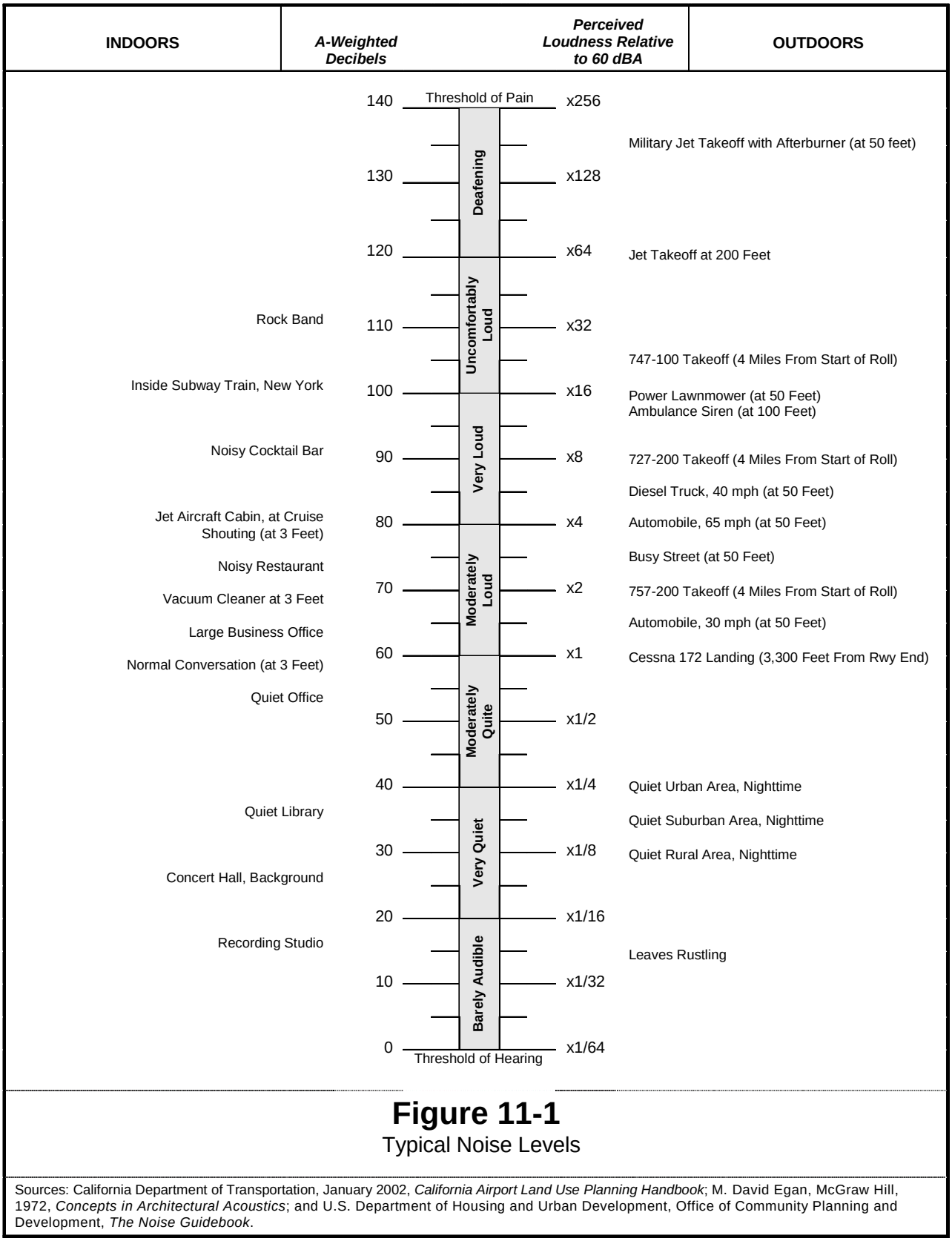


Figure 11-1

Typical Noise Levels

Sources: California Department of Transportation, January 2002, *California Airport Land Use Planning Handbook*; M. David Egan, McGraw Hill, 1972, *Concepts in Architectural Acoustics*; and U.S. Department of Housing and Urban Development, Office of Community Planning and Development, *The Noise Guidebook*.

Table 11-1 Common Acoustical Terms and Descriptors	
Descriptor	Definition
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise or sound at a given location, typically defined by the L_{eq} level.
Noise	Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
Decibel (dB)	A unit-less measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to referenced sound pressure amplitude. The reference pressure is 20 micro-pascals.
A-Weighted Decibel (dBA)	An overall frequency-weighted sound level in decibels which approximates the frequency response of the human ear.
Energy Equivalent Noise Level (Leq)	The energy mean (average) noise level. The instantaneous noise levels during a specific period of time in dBA are converted to relative energy values. From the sum of the relative energy values, an average energy value (in dBA) is calculated.
Minimum Noise Level (Lmin)	The minimum instantaneous noise level during a specific period of time.
Maximum Noise Level (Lmax)	The maximum instantaneous noise level during a specific period of time.
Day-Night Average Noise Level (DNL or Ldn)	The 24-hour Leq with a 10 dBA "penalty" for noise events that occur during the noise-sensitive hours between 10:00 p.m. and 7:00 a.m. In other words, 10 dBA is "added" to noise events that occur in the nighttime hours to account for increases sensitivity to noise during these hours.
Community Noise Equivalent Level (CNEL)	The CNEL is similar to the Ldn described above, but with an additional 5 dBA "penalty" added to noise events that occur between the hours of 7:00 p.m. to 10:00 p.m. The calculated CNEL is typically approximately 0.5 dBA higher than the calculated Ldn.
Single Event Level (SEL)	The level of sound accumulated over a given time interval or event. Technically, the sound exposure level is the level of the time-integrated mean square A-weighted sound for a stated time interval or event, with a reference time of one second. Often also referred to as the Single Event Noise Exposure Level (SENEL).

Existing Noise Environment

Noise-Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as parks, historic sites, cemeteries, and recreation areas are also considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses.

The proposed project site consists of approximately 160 acres located between N. Leonard and N. Highland Avenues on the north and south sides of the E. Clinton Avenue Alignment in Fresno County. Nearby noise-sensitive land uses consist primarily of rural residential

dwellings, the nearest of which are generally located within approximately 200 feet of the project site, along the northeastern, northern, eastern, and southeastern boundaries of the project site. Additional nearby rural residential land uses are located approximately 500 feet to the south, along Leonard Avenue, and approximately 1,500 feet to the west, along the Clinton Avenue alignment. Nearby noise-sensitive land uses are depicted in Figure 11-2.

Ambient Noise Levels

The existing noise environment within the project site is influenced primarily by surface transportation noise emanating from vehicular traffic on area roadways. To a lesser extent, nearby agricultural activities and occasional aircraft overflights also contribute to ambient noise levels.

An ambient noise survey was conducted on February 16, 2007 to document the existing daytime noise environment in the vicinity of the project site. Measurements were taken for a period of 15 minutes along adjacent roadways at the property line of the proposed project site. Measurements were conducted using a Larson Davis model 820 integrating sound level meter placed at approximately 4.5 feet above the ground surface. Measurement locations and A-weighted daytime sound levels are depicted in Figure 11-2.

Based on the measurements conducted, average daytime noise levels (measured in Leq) within the project site generally range from the low to upper 50's, dependent primarily on distance from area roadways and associated traffic volumes. Maximum intermittent noise levels ranged from the low to upper 70's associated primarily with vehicle passbys on area roadways and occasional aircraft overflights. The project site is not located within the 60 dBA CNEL noise contour of nearby airports. The nearest airport is the Fresno Yosemite International Airport located approximately 3.5 miles west of the project site.

Roadway Traffic Noise

As noted above, ambient noise measurements were influenced primarily by surface transportation noise emanating from vehicular traffic on area roadways. The FHWA Highway Traffic Noise Prediction model (FHWA-RD-77-108) was used to predict traffic noise levels along major area roadways. The FHWA model is based upon the CALVENO noise emission factors for automobiles and medium and heavy-duty trucks and is generally considered to be accurate to within 1.5 dBA. Input data used in the model included average daily traffic levels, day/night percentages of automobiles and medium and heavy trucks, vehicle speeds, ground attenuation factors, and roadway widths. Traffic data used in the analysis was obtained from the traffic analysis prepared for this project.

Predicted existing traffic noise levels for nearby roadway segments, including distances to the predicted 60, 65, and 70-dBA Ldn/CNEL noise contours, are summarized in Table 11-2. Predicted noise contours assume no natural or human-made shielding (i.e., intervening terrain, vegetation, berms, walls, buildings) and should be considered to represent bands of similar noise exposure along roadway segments, rather than absolute lines of demarcation. Predicted noise contours are useful for determining potential land-use conflicts. As indicated, predicted existing traffic noise levels along nearby roadways range from the upper 50's to the lower 60's at 50 feet from the roadway centerline. Measured average-hourly daytime noise levels along

area roadways located adjacent to the project site, Figure 11-2, were roughly equivalent to the predicted average-daily noise levels identified in Table 11-2.

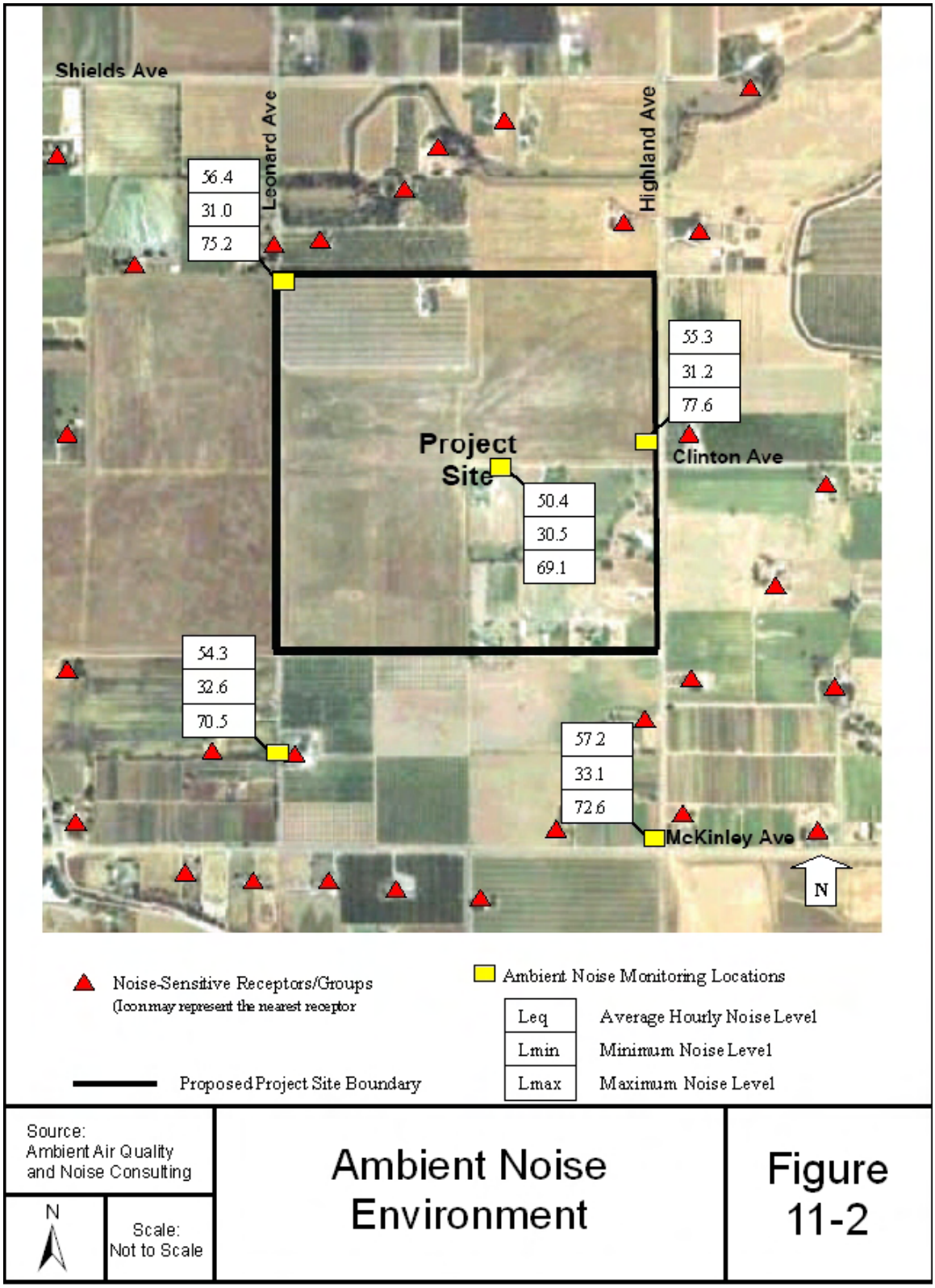


Table 11-2 Existing Traffic Noise Levels				
Roadway Segment	Predicted Noise Level at 50' from Centerline of Near Travel Lane (dBA L_{dn}/CNEL)	Distance to Noise Contour (dBA L_{dn}/CNEL)		
		60	65	70
Shields Ave., Locan Ave. to Dewolf Ave.	60.02	56.2	WR	WR
Shields Ave., Dewolf Ave. to Leonard Ave.	60.27	58.3	WR	WR
Shields Ave., Leonard Ave. to Highland Ave.	57.05	WR	WR	WR
Leonard Ave., Shields Ave. to Clinton Ave.	54.04	WR	WR	WR
Leonard Ave., Clinton Ave. to McKinley Ave.	54.04	WR	WR	WR
Highland Ave., Shields Ave. to Project Site	54.74	WR	WR	WR
Highland Ave., Project Site to McKinley Ave.	55.01	WR	WR	WR
McKinley Ave., Temperance Ave. to Dewolf Ave.	61.23	67.5	WR	WR
McKinley Ave., Dewolf Ave. to Fancher Ave.	61.20	67.2	WR	WR
McKinley Ave., Fancher Ave. to Thompson Ave.	61.77	73.3	WR	WR
Fancher Ave., McKinley Ave. to Olive Ave.	56.57	WR	WR	WR
Leonard Ave., Shields Ave. to Ashlan Ave.	55.52	WR	WR	WR
Highland Ave., Shields Ave. to Ashlan Ave.	54.74	WR	WR	WR
Dewolf Ave., Shields Ave. to Clinton Ave.	57.18	WR	WR	WR
Dewolf Ave., Clinton Ave. to McKinley Ave.	57.18	WR	WR	WR
Traffic noise levels were calculated using the FHWA roadway noise prediction model (FHWA-RD-77-108), based on data obtained from the traffic analysis prepared for this project. Assumes no natural or man-made shielding (e.g., vegetation, berms, walls, buildings). WR = Within Right-of-Way				

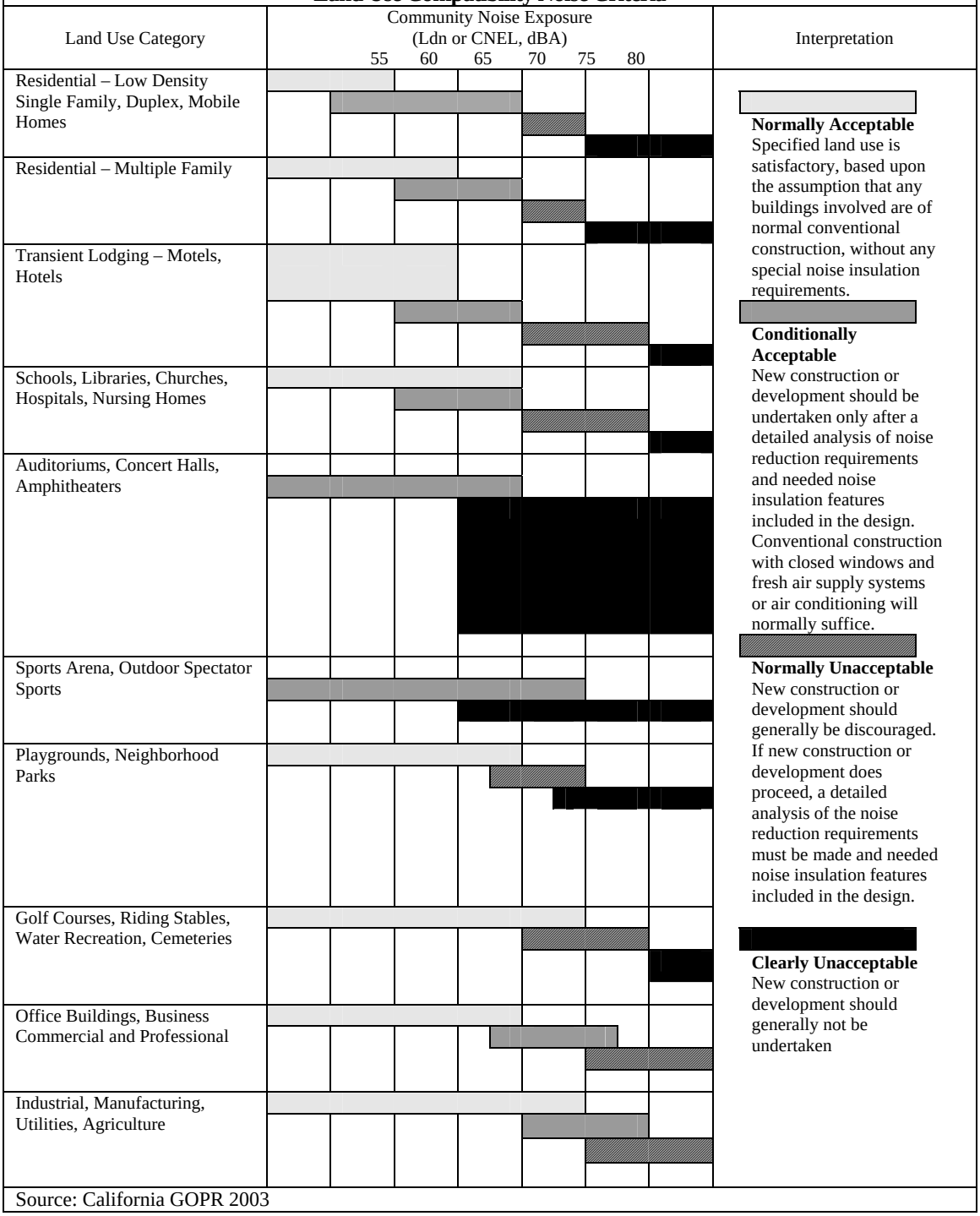
Regulatory Background

State of California

The State of California General Plan Guidelines (State of California 2002), published by the State Governor's Office of Planning and Research, provides guidance for the acceptability of projects within specific CNEL/Ldn contours. Recommended noise criteria for various land uses are summarized in Table 11-3. As depicted, school uses are considered to be "normally acceptable" in areas where exterior noise levels do not exceed 70 dBA CNEL/Ldn. However, school uses should be considered "conditionally acceptable" in areas where exterior noise levels range from 60 to 70 dBA CNEL/Ldn. A "conditionally acceptable" designation implies that new construction or development should be undertaken only after a detailed analysis of the noise reduction measures is made and needed noise insulation features incorporated. Incorporation of heating, ventilation, and air conditioning systems into the building design to facilitate the closure of windows is typically considered sufficient to mitigate interior noise levels for sites located within "conditionally acceptable" noise regions. Development is typically considered "normally unacceptable" in areas exceeding 70 dBA CNEL/Ldn. The

guidelines also present adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

Table 11-3
State of California
Land Use Compatibility Noise Criteria



Source: California GOPR 2003

County of Fresno

The Fresno County General Plan Noise Element and Noise Ordinance establish noise criteria for acceptable noise exposure for various land uses. Fresno County noise standards for noise-sensitive land uses are summarized in Table 11-4.

In general, the 24-hour average noise criteria are used for the evaluation of noise generated by transportation sources, including roadways, railways, and aircraft; whereas, the hourly and maximum noise level criteria are typically used for the evaluation of non-transportation noise sources. The County's general noise criteria for evaluation of land use compatibility of various land use designations are summarized in Table 11-5.

Table 11-4
Fresno County Noise Level Criteria

Land Use	Noise Level Criteria (dBA)				
	Ldn	Exterior Noise Level		Maximum Interior Noise Criterion	
		Daytime L50 (7 am to 10 pm)	Nighttime L50 (10 pm to 7 am)	Daytime L50 (7 am to 10 pm)	Nighttime L50 (10 pm to 7 am)
Noise-Sensitive Uses *	60	50	45	45	35

* Residences, schools, parks, churches and libraries.

Table 11-5
County of Fresno
Community Noise Criteria for Land Use Compatibility

LAND USE	COMMUNITY NOISE EXPOSURE (EXTERIOR) Ldn, dBA			
	NORMALLY ACCEPTABLE	CONDITIONALLY ACCEPTABLE	GENERALLY UNACCEPTABLE	LAND USE DISCOURAGED
Residential Low-Density Single Family, Duplex, Mobile Homes	<60	55 – 65	65 – 75	>75
Residential Multi-family	<60	55 – 65	65 – 75	>75
Transient Lodging – Motels, Hotels	<65	60 – 70	70 – 80	>80
Schools, Libraries, Churches, Hospitals, Nursing Homes	<60	55 – 65	65 – 75	>75
Auditoriums, Concert Halls, Amphitheaters	Not Specified	<70	Not Specified	>65
Sports Arena, Outdoor Spectator Sports	Not Specified	<75	Not Specified	>70
Playgrounds, Neighborhood Parks	<70	Not Specified	67.5 – 75	>72.5
Golf Courses, Riding Stables, Water Recreation, Cemeteries	<75	Not Specified	70 – 80	>80
Office Buildings, Business Commercial and Professional	<70	67.5 – 77.5	>75	Not Specified
Industrial, Manufacturing, Utilities, Agriculture	<75	70 – 80	>75	Not Specified

Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirement is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
Generally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Land Use Discouraged: New construction or development should generally not be undertaken.
Source: County of Fresno 2000

City of Fresno

The Fresno General Plan Noise Element includes noise standards for both stationary and transportation noise sources for determination of land use compatibility. In accordance with General Plan policies, new noise-sensitive land uses impacted by existing or projected future transportation or stationary noise sources shall include mitigation measures so that resulting noise levels do not exceed these standards (City of Fresno 2002). The land use compatibility noise standards for stationary and transportation noise sources are summarized in Tables 11-6 and 11-7, respectively.

Table 11-6
City of Fresno General Plan
Maximum Allowable Noise Exposure - Stationary Noise Sources

NOISE DESCRIPTOR	NOISE LEVEL STANDARDS (dBA)[1]	
	Daytime (7 am - 10 pm)	Nighttime (10 pm – 7 am)
Hourly Equivalent Sound Level (Leq)	50	45
Maximum Sound Level (Lmax)	70	65

[1] As determined at outdoor activity areas. Where the location of outdoor activity areas is unknown or not applicable, the noise exposure standard shall be applied at the property line of the receiving land use. When ambient noise levels exceed or equal the levels in this table, mitigation shall only be required to limit noise to the ambient plus five (5) dB.
Source: City of Fresno 2002

Table 11-7
City of Fresno General Plan
Maximum Allowable Noise Exposure - Transportation Noise Sources

LAND USE [4]	OUTDOOR ACTIVITY AREAS 1 (CNEL/Ldn dBA)	INTERIOR SPACES (dBA)	
		AVERAGE DAILY (CNEL/Ldn)	AVERAGE HOURLY (Leq) [2]
Residential	60 [3]	45	--
Transient Lodging	60 [3]	45	--
Hospitals, Nursing Homes	60 [3]	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls	60 [3]	--	45
Office Buildings	--	--	45
Schools, Libraries, Museums	--	--	45

[1] Where the location of outdoor activity areas is unknown or is not applicable, the exterior noise level standard shall be applied to the property line of the receiving land use.
[2] As determined for a typical worst-case hour during periods of use.
[3] Noise levels up to 65 dBA Ldn adjacent to the Burlington Northern Santa Fe and Union Pacific mainline tracks may be allowed by the project approving authority when it is determined that it is not possible to achieve 60 dB Ldn in outdoor activity areas using a practical application of the best-available noise reduction technology, and when all feasible exterior noise reduction measures have been proposed.
[4] The Planning and Development Director, on a case-by-case basis, may designate land uses other than those shown in this table to be noise-sensitive, and may require appropriate noise mitigation measures.
Source: City of Fresno 2002

The City of Fresno has also adopted a noise ordinance that contains additional noise performance standards intended to prevent noise which may create dangerous, injurious, noxious, or otherwise objectionable conditions. As opposed to the City's General Plan noise standards, the City's noise ordinance standards are primarily used for the regulation of existing uses and activities, including construction activities, and are not typically used as a basis for land use planning. The ordinance establishes maximum allowable exterior standards, for daytime, evening, and nighttime periods, based on land use designations. Construction activities occurring during the daytime hours of 7:00 a.m. to 10:00 p.m. are typically considered exempt from the City's noise ordinance standards. The Fresno City noise ordinance standards are summarized in Table 11-8.

Table 11-8 City of Fresno Noise Ordinance Maximum Allowable Exterior Noise Standards			
LAND USE	NOISE LEVEL STANDARDS (dBA)		
	DAYTIME (7 am - 7 pm)	EVENING (7 pm – 10 pm)	NIGHTTIME (10 pm – 7 am)
Residential	60	55	50
Commercial	65	65	60
Industrial	70	70	70
Source: City of Fresno 1972			

Community Ambient Noise Degradation

In addition to the guidelines and standards presented above, another consideration is the degradation of the existing ambient noise environment because of an increase in the ambient noise levels. With respect to noise levels, a 3 dBA increase is barely perceptible, a 5 dBA increase is clearly perceptible, and a 10 dBA increase is subjectively perceived as approximately twice as loud. When evaluating exposure of noise-sensitive land uses to increases in ambient noise levels, the existing noise environment also needs to be taken into consideration. For evaluation of increases in ambient noise levels, the following criteria are often used:

- Where existing noise levels are less than 60 dBA Ldn at outdoor activity areas of noise-sensitive uses, a 5 dBA Ldn increase in noise levels would be considered significant;
- Where existing noise levels are between 60 and 65 dBA Ldn at outdoor activity areas of noise-sensitive uses, a 3 dBA Ldn increase in noise levels would be considered significant;
- Where existing noise levels are greater than 65 dBA Ldn at outdoor activity areas of noise-sensitive uses, a 1.5 dBA Ldn increase in noise levels would be considered significant;

The above criteria were initially recommended by the Federal Interagency Committee on Noise (FICON) in 1972, based on noise levels at which people typically become increasingly annoyed, with respect to noise-sensitive land uses. These recommendations have since been recognized by various local, state and federal agencies and are the criteria typically used for the analysis of increases in ambient noise levels (FAA, 2000).

Significance Criteria

The City of Fresno noise standards are equivalent to or more stringent than those currently adopted by Fresno County. Accordingly, for purposes of this analysis, the City of Fresno noise standards were used, where applicable, for evaluation of project-related noise impacts.

- Short-term Exposure to Construction-Generated Noise—Construction noise impacts would be considered significant if the proposed project would result in noise levels that would exceed applicable noise standards of the City/County of Fresno (Tables 11-4 and 11-6) or result in increased levels of annoyance or

increased potential for sleep disruption during then more noise-sensitive periods of the day.

Fresno County noise ordinance limits construction activities to between the hours of 6 a.m. to 9 p.m. on weekdays and between the hours of 7 a.m. to 5 p.m. on weekends. Construction activities occurring between the hours of 7 a.m. to 10 p.m. are considered exempt from the City's noise ordinance requirements. For purposes of this analysis (based on the combined hourly limitations identified by the County and City of Fresno), noise-sensitive periods of the day are defined as between the hours of 9 p.m. to 7 a.m. on weekdays and between the hours of 5 p.m. to 7 a.m. on weekends.

- Long-term Operational Stationary Source Noise—Long-term stationary-source noise impacts would be considered significant if the proposed project would result in stationary source noise levels that would exceed applicable noise criteria of the City/County of Fresno (Tables 11-4 and 11-6) or result in a substantial increase in ambient noise levels.

- Long-term Increases in Traffic Noise—Long-term increases in traffic noise would be considered significant if implementation of the proposed project would result in a substantial increase in transportation noise levels at noise-sensitive land uses that would exceed applicable City/County land-use compatibility noise criteria; or result in a substantial increase in traffic noise levels within areas that already exceed the applicable City/County land-use compatibility noise criteria. For residential land uses, both the City and County have adopted a "normally acceptable" noise standard of 60 dBA CNEL, above which noise control measures may be required (Tables 11-5 and 11-7.)

- Groundborne Vibration—Groundborne vibration levels would be considered significant if predicted groundborne vibration levels attributable to the proposed project would exceed 0.2 inches per second (peak particle velocity) at nearby buildings; or, if predicted onsite vibration levels from offsite sources would exceed 0.2 inches per second at existing or proposed onsite structures.

For purposes of this analysis, substantial increases in ambient noise levels, as noted above, are defined as:

- Where existing noise levels are less than 60 dBA Ldn at outdoor activity areas of noise-sensitive uses, a 5 dBA Ldn increase in noise levels would be considered significant;

- Where existing noise levels are between 60 and 65 dBA Ldn at outdoor activity areas of noise-sensitive uses, a 3 dBA Ldn increase in noise levels would be considered significant;

- Where existing noise levels are greater than 65 dBA Ldn at outdoor activity areas of noise-sensitive uses, a 1.5 dBA Ldn increase in noise levels would be considered significant.

Significant Impacts and Mitigation Measures

Impact 11.1:

Short-term noise will occur during project construction phases.

Construction noise typically occurs intermittently and varies depending upon the nature or phase (e.g., demolition/land clearing, grading and excavation, erection) of construction. Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Although noise ranges were found to be similar for all construction phases, the grading phase tended to involve the most equipment. As noted in Table 11-9, noise levels generated by individual pieces of construction equipment typically range from approximately 74 dBA to 89 dBA at 50 feet (FTA 2006).

Table 11-9
Typical Construction Equipment Noise Levels

Equipment	Typical Noise Level (dBA) 50 feet from Source
Backhoe	80
Compactor	82
Dozer	85
Grader	85
Loader	85
Truck	88
Air Compressor	81
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Mobile	83
Generator	81
Impact Wrench	85
Jack Hammer	88
Caisson Drill	89
Paver	89
Pneumatic Tool	85
Pump	76
Roller	74
Saw	76
Sources: Federal Transit Administration 2006	

Typical operating cycles may involve 2 minutes of full power, followed by 3 or 4 minutes at lower settings. Average hourly noise levels at construction sites typically range from approximately 65 to 89 dBA Leq at 50 feet, depending on the activities performed (EPA 1971).

Based on these equipment noise levels presented in Table 11-9 and assuming a noise attenuation rate of 6 dBA per doubling of distance from the source, exterior noise levels at nearby residences located within approximately 1,500 feet and within line-of-sight of construction activities could exceed 60 dBA without feasible noise control. Activities occurring during the more noise-sensitive nighttime hours would be of particular concern given the potential for increased levels of annoyance and sleep disruption to occupants of nearby residential dwellings. As noted earlier in this report, residential dwellings are generally located within approximately 200 feet of the northern and eastern boundaries of the project site.

The proposed project does not include hourly restrictions for construction activities. Activities occurring during the nighttime hours (i.e., 10:00 p.m. to 7:00 a.m.) would not be exempt from noise ordinance requirements. As a result, given that construction activities could potentially occur during the more noise-sensitive periods of the day, noise-generating construction activities would be considered to have a potentially significant short-term noise impact.

Mitigation Measures

The following measures are recommended to reduce short-term noise impacts to nearby land uses to a less than significant level:

11.1(a) 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.

11.1(b) When not in use, motorized construction equipment idling shall be minimized.

11.1(c) Noise-generating construction activities shall comply with applicable noise ordinance requirements. Accordingly, construction activities shall be limited to between 7:00 a.m. and 9:00 p.m., Monday through Friday, and between the hours of 7:00 a.m. and 5:00 p.m., Saturday and Sunday. Construction activities shall be prohibited on Federal/State-recognized holidays.

Level of Significance

With implementation of the above mitigation measures, noise levels associated with individual construction equipment and resultant noise levels at nearby receptors would be substantially reduced. For example, use of equipment exhaust mufflers and enclosures can reduce equipment noise levels by as much as approximately 10 dBA. Construction activities would be restricted to the less noise-sensitive daytime hours. With implementation of the above mitigation measures, this impact would be considered less than significant.

Impact 11.2:

The project will expose noise sensitive uses to on site stationary source noise.

Operational noise associated with schools typically includes mechanical noise associated with building ventilation systems, as well as use of onsite recreational facilities and parking lots.

Typical operational hours of the proposed facility, including exterior recreational facilities, would be limited to daytime hours. The specific location and design of proposed onsite facilities have not yet been identified. Noise levels commonly associated with these sources are discussed separately, as follows:

Mechanical Building Equipment. Mechanical building equipment (e.g., heating, ventilation and air conditioning systems) for proposed buildings could result in noise levels of approximately 90 dBA at 3 feet from the source (EPA 1971). Assuming a maximum noise level of 90 dBA at 3 feet with no intervening shielding or noise control, areas located within approximately 1,500 feet of such sources could potentially exceed 50 dBA. However, mechanical equipment systems are typically shielded from direct public exposure and housed on rooftops, within equipment rooms, or within exterior enclosures.

As noted earlier in this report, the nearest residential land uses are located within approximately 200 feet of the project site boundary. Given that the design and location of proposed onsite structures is currently unknown, noise from such sources could be considered to have a potentially significant impact to occupants of nearby residential dwellings. As a result, noise generated by building mechanical equipment would be considered to have a potentially significant noise impact.

Exterior Recreational-Use Facilities. The proposed project includes construction of various recreational facilities. These recreational facilities would include a football stadium, as well as other outdoor recreational facilities, such as soccer and baseball fields, basketball courts, tennis courts and a swimming pool complex. It is anticipated that recreational facilities would be used primarily during the daytime hours; though some recreational activities including the proposed football and baseball field, could extend into the late afternoon and evening hours. Noise generated by events held at the proposed stadium would have the greatest potential for adverse noise impacts, given the potential to attract larger participant/spectator crowds. The proposed stadium would be designed with a maximum capacity of 8,000 spectators. Average attendance at most events, however, would be approximately 4,500 spectators. Crowds approaching the maximum capacity would be anticipated to occur during playoff games and during large games with league rivals (Paoli & Odell, Inc., 2007).

Based on noise measurements conducted for similar projects, average-hourly noise levels associated with recreational facilities that draw smaller spectator crowds (i.e.., soccer fields, baseball fields, basketball courts, swimming pools, etc) typically average less than 60 dBA Leq at approximately 50 feet. Intermittent noise events typically associated with such uses include the occasional sound of cheering crowds, hitting of baseballs and softballs, and bouncing of basketballs.

For larger stadiums equipped with amplified sound systems and events that draw large spectator crowds, predicted exterior noise levels can range from approximately 57 to 72 dBA Leq at approximately 500 feet. Predicted noise levels at stadiums are dependent on various factors including stadium design and orientation, the activities conducted, spectator crowd size, type of public address (PA) amplification system installed, as well as speaker placement. In general, noise from PA systems at stadiums (during recreational events) tends to dominate the noise environment and occurs on a more frequent basis then noise generated by spectators. For audibility purposes, noise levels of PA systems tend to be approximately 3 to 10 dBA

greater than spectator noise. In addition, due to decreased volume levels required to address spectators, the use of multiple speakers placed throughout the stadium tend to generate lower overall noise levels than centrally located PA systems. Other uses commonly associated with high school stadiums, such as band performances, can result in substantial increases in ambient noise levels. Band performances at similar facilities have measured approximately 57 to 76 dBA Leq at 500 feet. Maximum intermittent noise levels associated with activities conducted at stadiums can reach levels of up to approximately 90 dBA at 50 feet, for brief periods of time (LAUSD 2005, AMBIENT 2006).

As noted above, activities conducted at the stadium and associated crowd sizes would vary. Based on the above discussed noise levels, events conducted at the stadium would be anticipated to generate noise levels ranging from a low of approximately 57 dBA Leq to a high of approximately 76 dBA Leq at approximately 500 feet. Based on these noise levels and assuming an average noise attenuation rate of 6 dBA per doubling of distance from the source (with no intervening shielding), the corresponding 60 dBA Leq noise contours would extend to distances of approximately 390 feet and 3,200 feet, respectively. It is important to note that these contour distances do not account for noise reductions associated with intervening structures or terrain or design characteristics of the stadium. Substantial reductions in noise levels can be achieved through the incorporation of various design features (i.e., spectator shielding, elevation changes, PA speaker placement, stadium orientation, and berms), as well as incorporation of operational limitations.

As noted above, the nearest residential land uses are located within approximately 200 feet of the project site boundary. Given that the design and location of proposed onsite structures is currently unknown, noise associated with onsite recreational uses, particularly the proposed stadium, would be considered to have a potentially significant noise impact.

Parking Lots. Noise levels commonly associated with parking lots are generated by the starting of vehicles, the opening and closing of vehicle doors, playing of amplified music, and the occasional sound of vehicle alarms and horns. Intermittent noise levels associated with such noise events can generate sound levels of up to approximately 92 dBA at 50 feet. Overall, average-hourly noise levels associated with parking lots are largely dependent on vehicle activity and, thus, would likely be greatest during the hours preceding or upon conclusion of onsite activities, such as normal school activities or recreational events. The type of vehicle can also affect overall noise levels. The inclusion of areas designated for the parking of larger vehicles, such as buses, can result in a substantial increase in overall noise levels associated with parking lots. Depending on various factors, including the number of vehicles and buses accessing the parking area and hours of use, sensitive land uses located within approximately 225 feet could be adversely affected (FTA 2006).

Because the location and design of onsite facilities is currently unknown and given that nearby offsite receptors could be located within an area that could experience potential increases in ambient noise levels in excess of applicable noise standards, this impact would be considered potentially significant. It is noted that the educational center site will be separated from adjacent land uses by major streets (Leonard and Highland Avenues) on the east and west sides and local streets on the north and south sides. Also, since land use planning has not yet occurred adjacent to the project site as part of the specific plan for the Southeast Growth Area, design features of such land uses can be incorporated to reduce potential noise impacts.

Facility Maintenance. Exterior noise events commonly associated with school facilities are commonly associated with the operation of landscape maintenance equipment, as well as occasional waste-collection activities. Based on measurements conducted at similar facilities, landscape maintenance equipment, such as leaf blowers and gasoline-powered lawn mowers, as well as waste collection activities can result in intermittent noise levels of up to approximately 100 dBA at 3 feet (EPA 1971). Resultant exterior noise levels could reach intermittent levels of approximately 75 dBA at 50 feet. The hours during which landscape maintenance and waste collection activities would be conducted have not yet been specified, nor has the location of onsite facilities been identified. In the event landscape maintenance and waste collection activities were to occur during the more noise-sensitive nighttime hours, the intermittent noise associated with the onsite equipment could result in a noticeable increase (3 dBA) in ambient noise levels that would be detectable at nearby residential dwellings. Noticeable increases in ambient noise levels during the more noise-sensitive nighttime hours may result in increased levels of annoyance and potential sleep disruption. As a result, increases in noise associated with facility maintenance activities would be considered potentially significant.

Mitigation Measure

11.2(a) Mechanical building equipment shall be shielded from public exposure by locating such equipment on rooftops, in equipment buildings or by the use of other methods of shielding.

11.2(b) When a site plan is prepared for the educational center, the stadium, other athletic facilities and parking areas shall be designed and oriented to minimize noise levels in relation to any existing or planned noise sensitive land uses in the area. Possible methods include (1) location on the site to maximize the distance from noise sensitive uses (within feasible and appropriate site design constraints in relation to other facilities on the site); (2) the use of intervening building or other structures between noise-sensitive receptors and onsite noise sources; and (3) for the stadium, consideration of design features including but not limited to solid berm and/or concrete seating, concrete walls, lowering of the field surface, and a state of the art PA system.

11.2(c) As part of the specific planning process for the Southeast Growth Area, the City of Fresno should plan and design land uses in the vicinity of the site in recognition of the features and characteristics of the educational center to minimize any potential noise impacts.

11.2(d) The hours of operation for facility maintenance activities that could be deemed to impact nearby land uses shall be limited to between 7:00 a.m. and 9:00 p.m., Monday through Friday, and between the hours of 7:00 a.m. and 5:00 p.m., Saturday and Sunday, excepting emergency conditions.

Level of Significance

Most on-site facilities should be able to be designed and mitigated such that any noise impacts are less than significant. However, it is possible that noise impacts from the football stadium or other facilities may not be able to be completely mitigated at all adjacent locations. The

stadium would potentially subject nearby residences to high noise levels on a limited basis during late summer and fall evenings and limited occasions such as graduation and large track meets. If this were to occur, the noise impact would be considered significant and unavoidable.

Impact 11.3:

Noise sensitive uses/activities on the project site may be subject to high noise levels from adjacent streets

As previously discussed, ambient noise levels within the project site are primarily influenced by vehicle traffic on area roadways. The City's "maximum allowable" noise standard for such uses is based on an interior average-hourly noise exposure of 45 dBA Leq (Table 11-7). Assuming an average exterior-to-interior noise reduction of approximately 25 dBA for standard commercial/office building construction techniques, this interior noise standard would equate to an exterior noise level of approximately 70 dBA Leq, which generally corresponds with the "normally acceptable" noise criteria for land use compatibility recommended by the State of California, which is 70 dBA CNEL (Table 11-3). Similar to the land use compatibility noise criteria identified in Table 11-3, the County of Fresno also evaluates land use compatibility based on an exterior noise standard that corresponds to the type of land use proposed. However, for similar land uses, such as schools and libraries, the County recommends a more conservative "normally acceptable" exterior noise standard of 60 dBA CNEL. Exterior noise levels of up to 65 dBA CNEL are considered "conditionally acceptable" provided interior noise levels remain within acceptable levels.

For determination of land use compatibility, predicted traffic noise contours for adjacent roadways were modeled for future cumulative conditions, with implementation of the proposed project (Table 11-10).

Table 11-10
Predicted Future Cumulative Traffic Noise Contours

Roadway Segment	Distances from Roadway Centerline to Predicted CNEL Noise Contours (feet)[1]	
	60	65
Shields Ave., Leonard Ave. to Highland Ave.	147.8	68.8
Leonard Ave., Shields Ave. to Clinton Ave.	153.4	71.4
Leonard Ave., Clinton Ave. to McKinley Ave.	153.4	71.4
Highland Ave., Shields Ave. to Project Site	175.4	81.6
Highland Ave., Project Site to McKinley Ave.	168.4	78.4
McKinley Ave., Dewolf Ave. to Fancher Ave.	205.3	95.5
McKinley Ave., Fancher Ave. to Thompson Ave.	132.9	61.9

1. Traffic noise levels were calculated using the FHWA roadway noise prediction model (FHWA-RD-77-108), based on data obtained from the traffic analysis prepared for this project. Assumes no natural or man-made shielding (e.g., vegetation, berms, walls, buildings).

Traffic noise contours were modeled based on data obtained from the traffic analysis prepared for this project. Based on the modeling conducted, the predicted 65 dB noise contours for the nearby segments of Shields and McKinley Avenue would not extend onto the project site.

However, the 60 dB noise contours for Leonard Avenue and Highland Avenue would extend to maximum distances of approximately 153 and 175 feet, respectively, from corresponding roadway centerlines, which would extend onto the western and eastern boundaries of the project site.

Proposed onsite noise-sensitive buildings would be equipped with interior ventilation systems to allow windows to remain closed during inclement weather conditions. With windows closed, newer building construction techniques typically result in exterior-to-interior noise reductions of approximately 25 to 30 dB. Assuming a minimum exterior-to-interior noise reduction of 25 dB, predicted interior noise levels of buildings located nearest the adjacent roadways would be less than 40 dBA CNEL/L_{eq}. Interior traffic noise levels for other onsite buildings would decrease with increased distance from the roadways. As a result, predicted interior noise levels of proposed onsite noise-sensitive structures would not be anticipated to exceed applicable interior noise standards of 45 dBA CNEL/L_{eq}. However, exterior noise levels in excess of 60 dBA could result in disruption of human speech and communication. Noise-sensitive exterior activity areas, such as patios or exterior classrooms/interpretive areas, would be of particular concern. Because the specific onsite uses have not yet been identified, it is conceivable that noise-sensitive exterior activity areas could be located within the projected 60 dBA contour of the adjacent roadways, which could result in increased levels of annoyance and activity interference. This impact is, therefore, considered potentially significant.

Mitigation Measure

11.3 Proposed noise-sensitive exterior activity areas, including but not limited to patios and exterior classrooms/interpretive areas, shall not be located within the projected cumulative 60 dBA noise contours of adjacent roadways (Table 11-12), unless noise-reduction measures are incorporated sufficient to reduce noise levels within noise-sensitive exterior activity areas to below 60 dBA CNEL/L_{eq}. Noise-reduction measures may include use of setbacks or barriers.

Level of Significance

Implementation of the above mitigation measure would ensure that predicted exterior noise levels within proposed noise-sensitive exterior areas would not exceed applicable noise standards of either the City or County of Fresno. With mitigation, this impact would be considered less than significant.

Impacts Not Found to be Significant

Impact 11.4:

Traffic noise will increase because of the project.

The FHWA roadway noise prediction model was used to determine projected increases in traffic noise attributable to the proposed project. Input data used in the model included average daily traffic levels, day/night percentages of automobiles and medium and heavy trucks, vehicle speeds, ground attenuation factors, and roadway widths. Traffic data used in the analysis was obtained from the traffic analysis prepared for this project.

Predicted increases in traffic noise levels are summarized in Table 11-11. In comparison to existing traffic noise levels, the proposed project would result in predicted increases in traffic noise levels along various roadway segments, including portions of Leonard, Highland, and Dewolf avenues. Substantial increases in traffic noise levels were predicted to occur along portions of Leonard Avenue, between Shields Avenue and McKinley Avenue, due to the relatively low traffic volumes currently experienced along these roadway segments.

A total of three existing residential dwellings were identified along the northern segment of Leonard Avenue (between Shields Avenue and the Clinton Avenue alignment), the nearest of which are located approximately 100 feet, or more, from the near-travel-lane centerline of Leonard Avenue. Based on this setback distance, predicted traffic noise levels at existing residential dwellings located along the northern segment of Leonard Avenue would be approximately 56 dBA CNEL, or less, with project implementation. The nearest existing residential dwelling located along the southern portion of Leonard Avenue (between the Clinton Avenue alignment and McKinley Avenue) is located approximately 75 feet from the near-travel-lane centerline of Leonard Avenue. With implementation of the proposed project, predicted traffic noise levels at this nearest existing residential dwelling would be approximately 58 dBA CNEL. Because implementation of the proposed project would not result in substantial increases in traffic noise levels that would exceed the noise standard of 60 dBA CNEL, this impact is considered less than significant.

Table 11-11
Predicted Increases in Existing Traffic Noise Levels

Roadway Segment	Predicted Noise Level at 75 feet from Centerline of Near Travel Lane (dBA L_{dn}/CNEL)[1]			
	Existing No Project	Existing Plus Project	Difference[2]	Substantial? [3]
Shields Ave., Locan Ave. to Dewolf Ave.	57.38	59.48	2.1	No
Shields Ave., Dewolf Ave. to Leonard Ave.	57.63	59.03	1.4	No
Shields Ave., Leonard Ave. to Highland Ave.	54.41	55.77	1.4	No
Leonard Ave., Shields Ave. to Clinton Ave.	51.40	57.40	6.0	Yes
Leonard Ave., Clinton Ave. to McKinley Ave.	51.40	58.39	7.0	Yes
Highland Ave., Shields Ave. to Project Site	52.10	55.21	3.1	No
Highland Ave., Project Site to McKinley Ave.	52.37	55.92	3.6	No
McKinley Ave., Temperence Ave. to Dewolf Ave.	58.59	61.07	2.5	No
McKinley Ave., Dewolf Ave. to Fancher Ave.	58.56	60.87	2.3	No
McKinley Ave., Fancher Ave. to Thompson Ave.	59.13	59.39	0.3	No
Fancher Ave., McKinley Ave. to Olive Ave.	53.93	56.5	2.6	No
Leonard Ave., Shields Ave. to Ashlan Ave.	52.88	55.86	3.0	No
Highland Ave., Shields Ave. to Ashlan Ave.	52.10	54.46	2.4	No
Dewolf Ave., Shields Ave. to Clinton Ave.	54.54	56.7	2.2	No
Dewolf Ave., Clinton Ave. to McKinley Ave.	54.54	58.29	3.8	No

1. Traffic noise levels were calculated using the FHWA roadway noise prediction model (FHWA-RD-77-108), based on data obtained from the traffic analysis prepared for this project. Assumes no natural or man-made shielding (e.g., vegetation, berms, walls, buildings).
2. In comparison to "No Project" conditions.
3. Substantial increases in ambient noise levels are defined as:
   - Where existing noise levels are less than 60 dBA Ldn at outdoor activity areas of noise-sensitive uses, a 5 dBA Ldn

Table 11-11 Predicted Increases in Existing Traffic Noise Levels				
Roadway Segment	**Predicted Noise Level at 75 feet from Centerline of Near Travel Lane (dBA L_{dn}/CNEL)[1]**			
	Existing No Project	**Existing Plus Project**	**Difference[2]**	**Substantial? [3]**
increase in noise levels would be considered significant; ▪ Where existing noise levels are between 60 and 65 dBA Ldn at outdoor activity areas of noise-sensitive uses, a 3 dBA Ldn increase in noise levels would be considered significant; ▪ Where existing noise levels are greater than 65 dBA Ldn at outdoor activity areas of noise-sensitive uses, a 1.5 dBA Ldn increase in noise levels would be considered significant.				

Mitigation Measures

No mitigation is required.

Level of Significance

This impact will be less than significant.

Impact 11.5:

The project will result in cumulative increases in traffic noise.

Predicted future cumulative traffic noise levels were calculated using the FHWA roadway noise prediction model, based on data obtained from the traffic analysis prepared for this project. Predicted increases in future cumulative traffic noise levels are depicted in Table 11-12. As shown, implementation of the proposed project would not be anticipated to result in a substantial contribution to cumulative traffic noise levels. As a result, the proposed project's contribution to future cumulative traffic noise levels would be considered less than significant.

Table 11-12 Predicted Increases in Future Cumulative Traffic Noise Levels				
Roadway Segment	**Predicted Noise Level at 75 ft from Centerline of Near Travel Lane (dBA L_{dn}/CNEL)[1]**			
	Cumulative No Project	**Cumulative Plus Project**	**Difference[2]**	**Substantial? [3]**
Shields Ave., Locan Ave. to Dewolf Ave.	63.84	64.41	0.6	No
Shields Ave., Dewolf Ave. to Leonard Ave.	65.27	65.55	0.3	No
Shields Ave., Leonard Ave. to Highland Ave.	63.63	63.72	0.1	No
Leonard Ave., Shields Ave. to Clinton Ave.	63.17	63.96	0.8	No
Leonard Ave., Clinton Ave. to McKinley Ave.	63.17	63.96	0.8	No
Highland Ave., Shields Ave. to Project Site	64.59	64.84	0.3	No
Highland Ave., Project Site to McKinley Ave.	64.31	64.57	0.3	No
McKinley Ave., Temperence Ave. to Dewolf Ave.	66.22	66.76	0.5	No
McKinley Ave., Dewolf Ave. to Fancher Ave.	65.25	65.86	0.6	No
McKinley Ave., Fancher Ave. to Thompson Ave.	62.63	63.02	0.4	No
Fancher Ave., McKinley Ave. to Olive Ave.	60.37	61.10	0.7	No

Table 11-12 Predicted Increases in Future Cumulative Traffic Noise Levels				
Roadway Segment	**Predicted Noise Level at 75 ft from Centerline of Near Travel Lane (dBA L_{dn}/CNEL)[1]**			
	Cumulative No Project	**Cumulative Plus Project**	**Difference[2]**	**Substantial? [3]**
Leonard Ave., Shields Ave. to Ashlan Ave.	63.88	64.25	0.4	No
Highland Ave., Shields Ave. to Ashlan Ave.	64.80	65.04	0.2	No
Dewolf Ave., Shields Ave. to Clinton Ave.	61.45	62.52	1.1	No
Dewolf Ave., Clinton Ave. to McKinley Ave.	61.45	62.52	1.1	No

1. Traffic noise levels were calculated using the FHWA roadway noise prediction model (FHWA-RD-77-108), based on data obtained from the traffic analysis. Assumes no natural or man-made shielding (e.g., vegetation, berms, walls, buildings).
2. In comparison to "No Project" conditions.
3. Substantial increases in ambient noise levels are defined as:
   - Where existing noise levels are less than 60 dBA Ldn at outdoor activity areas of noise-sensitive uses, a 5 dBA Ldn increase in noise levels would be considered significant;
   - Where existing noise levels are between 60 and 65 dBA Ldn at outdoor activity areas of noise-sensitive uses, a 3 dBA Ldn increase in noise levels would be considered significant;
   - Where existing noise levels are greater than 65 dBA Ldn at outdoor activity areas of noise-sensitive uses, a 1.5 dBA Ldn increase in noise levels would be considered significant.

Mitigation Measure

No mitigation is required.

Level of Significance

This impact will be less than significant.

Impact 11.6:

The project will result in increase exposure to groundborne vibration levels.

Ground vibration generated by construction equipment and groundborne transportation sources spreads through the ground and diminishes in strength with distance. The effects of ground vibration can vary from no perceptible effects at the lowest levels, low rumbling sounds and detectable vibrations at moderate levels, and slight damage to nearby structures at the highest levels. At the highest levels of vibration, damage to structures is primarily architectural (e.g., loosening and cracking of plaster or stucco coatings) and rarely result in structural damage. For most structures, a peak particle velocity (ppv) threshold of 0.5 inches per second (in/sec) is sufficient to avoid structure damage, with the exception of fragile historic structures or ruins. At the request of the U.S. Environmental Protection Agency the Committee of Hearing, Bio-Acoustics, and Bio-Mechanics (CHABA) have developed guidelines for safe vibration limits for ruins and ancient and/or historic buildings. For fragile structures, the CHABA recommends a maximum limit of 0.25 inches per second ppv (U.S. Department of Transportation 1995). For the protection of fragile, historic, and residential structures, the California Department of Transportation recommends a more conservative threshold of 0.2 inches per second ppv. This same threshold would represent the level at which vibrations would be potentially annoying to people in buildings (Caltrans 2002).

Long-term operational activities associated with the proposed project would not involve the use of any equipment or processes that would result in potentially significant levels of ground vibration. Increases in groundborne vibration levels attributable to the proposed project would be primarily associated with short-term construction-related activities. Groundborne vibration levels associated with construction equipment are summarized in Table 11-13.

Construction activities associated with the proposed improvements would likely require the use of various tractors, trucks, and jackhammers. The use of pile drivers is not anticipated to be required for this project. Based on the vibration levels presented in Table 11-13, ground vibration generated by construction equipment would be less than 0.09 inches per second ppv at 25 feet. Predicted vibration levels at the nearest onsite and offsite structures would not be anticipated to exceed even the most conservative threshold of 0.2 inches per second ppv. Short-term groundborne vibration impacts would be considered less than significant.

Mitigation Measures

No mitigation is required.

Level of Significance

This impact will be less than significant.

Table 11-13
Representative Vibration Source Levels for Construction Equipment

EQUIPMENT		PEAK PARTICLE VELOCITY AT 25 FEET (in/sec)
Pile Driver (impact)	upper range	1.518
	typical	0.644
Pile Driver (sonic)	upper range	0.734
	typical	0.170
Large Tractors		0.089
Caisson Drilling		0.089
Loaded Trucks		0.076
Jackhammer		0.035
Small Tractors		0.003
Source: FTA 1996		

Impact 11.7:

The project is not within an area subject to significant aircraft noise.

The project site is not located within two miles of nearby airports, nor is the project site located within the 60 dBA CNEL noise contour zone or land use planning area of nearby airports. Exposure to aircraft noise would be considered less than significant.

Mitigation Measures

No mitigation is required.

Level of Significance

This impact will be less than significant.

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Chapter
12

Water Supply and Quality

Setting

This chapter was prepared based on information provided by Blair, Church & Flynn Consulting Engineers.

The City of Fresno is the water purveyor for all City of Fresno incorporated areas. With the City's planning activities for City growth areas, the City has and will plan for the expansion of their water supply and delivery system. Historically, all of the City's water supply was derived from groundwater. While groundwater has historically been an adequate and reliable water supply, increasing contamination (and consequent well closures), population growth and changing drinking water standards have made it a somewhat less reliable supply as the single source of water in the City's water supply system. Therefore, in 1997, the City of Fresno embarked on a program to add surface water supplies by means of a surface water treatment plant and water storage facility. (City of Fresno, 1997).

The City currently has one combined surface water treatment plant and water storage facility. It is located at the northeast corner of Behymer and Chestnut Avenues and it came on line towards the end of 2003. The City has also constructed a water storage reservoir adjacent to the California Avenue alignment, just east of Clovis Avenue. The City is currently working with a developer to construct a 1,500 gallon per minute (gpm) surface water treatment plant and 3 million gallon water storage reservoir on the north side of Dakota Avenue, between Armstrong and Temperance Avenues (Blair, Church & Flynn, 2007).

The City delivers water to the end users by means of transmission mains and water mains that are interconnected to the water storage facilities and supply wells. The City of Fresno water deliver system is designed to provide a minimum pressure within the system of between 35 to 40 pounds per square inch (psi) (Blair, Church & Flynn, 2007).

Presently, there are no water supply source or storage/distribution facilities available to provide a water supply to the project site. The City of Fresno is currently in the initial stages of developing a Specific Plan for the Southeast Growth Area. A critical part of the preparation of the Specific Plan will be the inclusion of a water master plan document that will define the reliable water supply that can meet the water needs of the land uses that will be identified in the Specific Plan. The water supply could be from groundwater through the use of an interconnected well system, or from surface water with new water treatment facilities. Potentially, the water supply could come from a combination of groundwater and surface water. The water master plan will also identify the storage, pumping and distribution systems

that will be necessary to support the development of the land contained within the Southeast Grow Area.

The nearest domestic water mains to the project site include a 12-inch line in Temperance Avenue between Belmont and Clinton Avenues and a 16-inch line in Shields Ave between Temperance and Locan. A City well exists on Armstrong Avenue, south of Shields Avenue. Within the next year the aforementioned water treatment plant and 3 million gallon water storage facilities will be in operation on the north side of Dakota Avenue, between Armstrong and Temperance Avenues Avenue (Blair, Church & Flynn, 2007).

Significance Criteria

According to Appendix G of the State CEQA Guidelines, a project may be determined to have a significant effect on the environment if it would (a) require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; (b) have insufficient water supplies available to serve the project from existing entitlements and resources; (c) substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level; or (d) substantially degrade water quality.

Significant Impacts and Mitigation Measures

Impact 12.1:

The project will increase local demand for water

Domestic Water Consumption

The domestic water consumption at the Educational Center would result from food preparation, dishwashing, restroom facilities, locker room showers, science laboratories and janitorial services. The average domestic water flow rate for the project has been estimated at 96 gallons per minute (gpm). This was derived by assuming that the average daily flow rate for the project will occur over a 12-hour period. Table 12-1 documents the projected water usage for the project Site.

The peak domestic water flow rate for the project has been estimated at 3.0 times the average domestic flow rate, which results in a flow rate of 287 gpm (Blair, Church & Flynn, 2007).

Table 12-1 summarizes the estimated water demand and consumption rates for the proposed project. It also compares the project's water usage to the water usage that might be expected from a proposed land use of Medium Density Residential in the area of the proposed Educational Center, as identified in the "Concept Land Use Plan for the Southeast Growth Area", in Appendix G of the City of Fresno 2025 General Plan.

TABLE 12-1
PROJECTED WATER CONSUMPTION

Water Use Area	School Capacity (students)	Faculty & Staff (persons)	Visitors (5% of staff & students)	Total Persons	Avg Flow Per Prsn (gpd) (See Note 1)	Avg Daily Flow (gpd)	Avg Daily Flow (AF/yr)	Max. Day Flow (gpd) (See Note 2)
High School - Domestic Flow	2,900	150	153	3,203.0	13.5	43,241	48.4	86,500
Intermediate School-Domestic Flow	1,400	100	75	1,575.0	13.5	21,263	23.8	42,500
Elementary School-Domestic Flow	700	45	37	782.0	5.5	4,301	4.8	8,600
Total Domestic Water Flow:						**68,804**	**77.1**	**137,600**
Overall Site Landscape Iirrigation Demand (see Table 12-2 and Note 3)						413,240	462.9	767,461
Total Site Water Demand Flow:						**482,044**	**540**	**905,061**

Comparson to Potential Land Use For The Area (See Note 4)	No. of Dwellings (EDU) (See Note 4)	Avg Flow Per Unit (gpd) (See Note 1)	Avg Daily Flow (gpd)	Avg Daily Flow (AF/yr)	Max. Day Flow (gpd) (See Note 2)
Concept land use map (Appendix G, City of Fresno 2025 General Plan) for the Southeast Growth Area shows Medium Density Residential in the area of the Educational Center	1,200	580	696,000	779.7	1,392,000

Land Use Flow Comparsons

A. Average Domestic Water Flow Rate- Campus: (Average Daily Use for 12 hour period)	96	gal/min
B. Peak Domestic Water Flow Rate- Campus: (3 Times Average Flow Rate - See Note 2)	287	gal/min
C. Average Domestic Water Flow Rate If Residential: (1200 EDU @ 2.12 GPM/EDU)	2,544	gal/min
D. Peak Domestic Water Flow Rate If Residential: (3 Times Average Flow Rate - See Note 2)	7,632	gal/min

Notes:
1. Average Daily Flow rate is taken to be 110% of the school's sewer flow rate; since the irrigation water supply will not come from the domestic water suppply system.
2. The City of Fresno uses a peaking factor of 2 times the average daily domestic flow rate and 3 times the consumption rate rate in gallons per minute. The maximum irrigation flow rate was taken from Table 12-2.
3. Landscape Irrig water will be surface water delivered by Fresno Irrigation Dist (Gould Canal & Kutner Colony No. 329 system)
4. Number of equivalent dwelling units, EDU, that could be developed within the project areas was determinded by taking the 160 acre project area and multiplying by the City of Fresno's average allowable denisty of 7.5 units per acre for Medium Density Residential property.
5. City of Fresno design criteria for water flow from each dwelling unit is twice the unit's sewer flow (2 x 290 gpd = 580 gpd).

The average daily domestic flow rate for full development of the Educational Center is estimated to be 68,804 gallons per day, gpd. Only the domestic water consumption will be supplied by the public water system. Landscape irrigation water will be supplied from surface water by means of the Fresno Irrigation District's distribution system. Domestic usage was derived by assuming that domestic water use at the site would be 110% of the wastewater flow produced at the site. For the high school and intermediate school the average daily flow per person was 13.5 gallons per day and for the elementary school the flow rate was 5.5 gallons per day. The average consumption flow rate is estimated to be 96 gpm, which was derived by assuming that the average daily flow of 68,804 gallons was used in a 12-hour period (Blair, Church & Flynn, 2007).

Table 12-1 shows an annual water use at the site of 540 acre-feet. This is a very conservative figure since it is based on using the site 365 days per year. The estimated annual domestic water demand for the project could be more reliably figured by taking the average daily flow rate and multiplying by the number of days per year that the Educational Center would be in operation. The annual use of the site is estimated at 180 days full use, 30 days summer school use at 50% of site capacity and 30 days of miscellaneous use at 10% of site capacity. Using these estimated usage times, the total volume of water used on an annual basis to meet the

domestic uses needs of the project can more accurately be estimated at 13,623,192 gallons, or 41.8 acre feet (Blair, Church & Flynn, 2007).

Landscape Irrigation Water Consumption

The landscape irrigation water consumption at the proposed Educational Center includes water used in all landscaped planter areas, landscaped turf areas and the turfed athletic fields. Since site plans for the proposed campus have not yet been prepared, the area of the campus used for the proposed buildings, parking lots, sidewalks, landscaping, and athletic fields has been estimated in the relation to the number of students and staff and the amount of parking that will be necessary, as typically found on District Educational Centers.

Table 12-2 shows the estimated volume of water necessary to irrigate the landscaping at the proposed project site. Full development of the Education Center site will require 304.4 acre-feet of water per year to meet the landscape irrigation demand (Blair, Church & Flynn, 2007).

TABLE 12-2

ESTIMATE OF IRRIGATION DEMAND

Note	Months	Dec-Jan	Feb-Mar	April-May	June-July	Aug-Sept	Oct-Nov	TOTAL
(1)	ETo, for 2 mon period	1.70	4.86	12.19	16.62	13.05	5.27	53.69
(2)	CF	0.6	0.6	0.6	0.6	0.6	0.6	3.6
(3)	ETc, in/mon	1.02	2.92	7.31	9.97	7.83	3.16	32.21
(4)	Water Need, cu ft/mon	299,911	858,568	2,149,359	2,931,479	2,302,255	929,135	9,470,706
(5)	Water Used, cu ft/mon	419,875	1,201,995	3,009,103	4,104,071	3,223,157	1,300,789	13,258,989
	Water Used, ac-ft/mon	9.64	27.59	69.08	94.22	73.99	29.86	304.38
	Water Used, gal/mon	3,140,664	8,990,920	22,508,091	30,698,449	24,109,213	9,729,900	99,177,236

SUMMARY:

	Irrigated Landscape Area (LA)	81	acres	Note: 81 Acres is 45% of the the 180 acre site. This
(3)	Monthly Average (ETc)	2.68	inches	is consistant with the District's other
	Monthly Average Water Used	8,264,770	gals	Educational Center.
(6)	Average Daily Use	413,240	gals	
(7)	Maximum Daily Use	767,461	gals	
(8)	Maximum Daily Flow Rate:	1,599	gpm	

NOTES:

(1)- Evapotranspiration rates (ET_o), in in/mnth, are from Calif Irrig Management Info System (CIMIS) Monthly Avg ETo Information from Station 80 (Fresno State, San Joaquin Region)

(2)- The correction factor (CF), or "crop factor", converts the (ET_o) to a specific crop. The (CF) for warm season turf is as Published by the University of California Cooperative Extension, Division of Agriculture and Natural Resources.

(3)- The crop evapotranspiration rate (ET_c) = (CF)(ET_o), in inches per month.

(4)- Landscape irrig water needed (in cubic ft) for specified months = (ET_c in inches)(LA, acres)(43,560 Ft^2/Ac)/(12 in/Ft).

(5)- "Water Used" is 140% of "Water Needed", to account for irrigation inefficiences, wind, slope and other varables as recommended in the "Landscape Irrigation Scheduling and Water ManagementReport" prepared by The Irrig Assoc.

(6)- Avg Daily Use equals Monthly Avg divided by 20 days, which is the average number of water days per month, based on irrigating 5 days per week, which is only really necessary for the peak months of June, July and August.

(7)- Max Daily Use equals the June & July use divided by 40 days, which is the average number of water days in the two month period, based on watering 5 days per week.

(8)- The Maximum Daily Flow is the Max Daily Use applied over an 8-hour irrigation period.

Combined Domestic and Landscape Irrigation Water Demand

As shown in Table 12-1, the average annual daily water use (domestic and landscape irrigation) at full development of the project would be 482,044 gallons per day. The annual combined domestic and irrigation water use would total 346.2 acre-feet per year, as derived by adding the estimated actual domestic annual use of 41.8 acre-feet with the 304.4 acre-feet annual landscape irrigation use (Blair, Church & Flynn, 2007).

Table 12-1 also shows that the project would consume approximately 70% of the water usage that might be expected from a proposed land use of Medium Density Residential in the area of the proposed Educational Center as identified in the "Concept Land Use Plan for the Southeast Growth Area", in Appendix G of the City of Fresno 2025 General Plan (Blair, Church & Flynn, 2007).

Existing Agricultural Water Supply

The project site is within the boundaries of the Fresno Irrigation District, FID. The project site is presently supplied with irrigation water from the Gould Canal by means of the Kutner Colony Number 329 ditch (Fresno Irrigation District, 2007). The Fresno Irrigation District can supply surface water to the project site to meet the landscape irrigation needs of the site (Fresno Irrigation District, 2007)

Mitigation Discussion

The extent of water supply and distribution facilities that may need to be constructed to serve the project site will vary greatly depending on the final land use designations adopted by the City of Fresno's Southeast Growth Area Specific Plan and the timing of the development of the site and other development that may occur in the Southeast Growth area after adoption of the Specific Plan.

In order for the project to connect to the City of Fresno's water distribution system, the District will be required to pay water charges in accordance with the Fresno Municipal Code Section 14-107.

Mitigation Measures

12.1(a) The availability of an adequate water supply to serve the project site shall be determined by the City of Fresno. The project site will not be developed without the City of Fresno having a water supply capable of meeting the water needs of the project.

12.1(b) The District shall construct necessary City of Fresno water system improvements to ensure that the site will be adequately served in terms of water quantity and pressure. The extent of the water facilities that will need to be constructed will vary depending on the timing of the development of the Educational Center site relative to the timing of development of other land areas within the Southeast Specific Plan area. The District shall be responsible for funding its proportionate share of improvements by mutual agreement and to the extent required by law and shall be reimbursed by the

City for water facilities installed by the District that have capacity to serve other developments.

12.1(c) Subject to agreement by the Fresno Irrigation District and the City of Fresno, landscape irrigation water for the project shall be obtained from Fresno Irrigation District surface water supplies. The Kutner Colony Number 329 ditch currently supplies the site with irrigation water. Arrangements will need to be made with the Fresno Irrigation District to determine the quantity of water to be used for the site and the periods of delivery.

12.1(d) If a water supply well is determined to be needed on the project site, the District will offer a well lot to the City of Fresno for purchase, sized appropriately to allow for the inclusion of well head treatment facilities.

12.1(e) The water supply at the campus shall meet City of Fresno fire flow requirements.

12.1(f) The District shall pay Water related charges as determined by Fresno Municipal Code.

Level of Significance

This impact will be less than significant with the incorporation of the mitigation measures.

(Note: Please refer to Chapter 14, Drainage and Flooding, Impact 14.2, for a discussion of potential impacts to water quality resulting from stormwater runoff.)

Impact 12.2:

Development of the project may damage existing Fresno Irrigation District facilities within the area of the project.

There are a number of Fresno Irrigation District pipelines within the area of the project. The pipes were not designed for use within non-agricultural areas. In order to maintain the integrity of the FID pipelines they will need to be reconstructed with pipe materials that can withstand urban development on the ground surface above the pipes.

Mitigation Measures

12..2 (a) All existing Fresno Irrigation District pipelines within the area of the project shall be removed and replaced with rubber gasket reinforced concrete pipe in accordance with FID standards and the District shall enter into an mutually acceptable agreement with FID for that purpose.

12.2(b) Should the replacement pipelines be placed in a different alignment than presently exists, the District shall dedicate an easement to FID for the pipeline as required by FID.

12.2(c) The District shall submit all project improvement plans to FID for review and approval relative to how such improvements may endanger the structural integrity of pipelines, easements or other facilities owned and operated by FID.

Level of Significance

This impact will be less than significant with the incorporation of the mitigation measure.

Impact 12.3:

Improper destruction of existing wells on the site can allow pollutants to enter the groundwater supply

There are existing domestic and agricultural supply wells within the project site. Based on a review of aerial photographs there may be as many as 10 to 12 existing wells on the site (Blair, Church & Flynn Consulting Engineers, 2007). Improper destruction of existing wells on the site can allow pollutants to enter the groundwater supply.

Mitigation Measure

12.3 Upon development of the property, any existing water well(s) not intended for use by the project, shall be properly destroyed. For those wells located in the unincorporated area of Fresno County, the applicant shall apply for and obtain a permit(s) to destroy water well(s) from the Fresno County Department of Community Health, Environmental Health System prior to commencement of work. The contractor hired to destroy any existing wells shall possess a valid C-57 license.

Level of Significance

This impact will be less than significant with the incorporation of the mitigation measure.

Sources

Blair, Church & Flynn, Consulting Engineers. *Clovis Unified School District Fourth Educational Center EIR Water, Sewer and Storm Drainage Issues*. June, 2007.

Fresno Irrigation District. *Letter Response to Notice of Preparation of an Environmental Impact Report for Fourth Educational Center.* March 28, 2007

Fresno, City of. *Working Papers for Fresno General Plan*. February 1997.

Chapter
13

Wastewater Collection and Disposal

Setting

This chapter was prepared based on information provided by Blair, Church & Flynn Consulting Engineers.

Wastewater collection and disposal service for the project site would be provided by the City of Fresno. The City's wastewater collection system consists of a hierarchy of pipelines that include major sewer trunk lines (greater than 30 inches in diameter), collection mains (10 to 27 inches in diameter), and smaller lines (8 to 10 inches) that connect to individual site development projects. The system of sewer lines transports effluent by gravity to the Regional Wastewater Reclamation Facility, located in the southwest portion of the City (near Jensen and Polk Avenues), where it undergoes treatment and disposal (City of Fresno, 2002).

Presently, there are no sewer collection facilities available to the site that could provide sewer service to the project. In May of 2004, Brown and Caldwell prepared a Wastewater Collection System Master Plan for the City of Fresno. Among other things, the collection system Master Plan identified sewer collection facilities that may be necessary to provide sewer collection service to the City of Fresno's Southeast Growth Area. The Brown and Caldwell master plan for sewer service to the Southeast Growth Area was based on the "Concept Land Use Plan for the Southeast Growth Area", as identified in Appendix G of the City of Fresno 2025 General Plan. The City of Fresno is currently in the initial stages of developing a Specific Plan for the Southeast Growth Area. With the adoption of a Southeast Growth Areas Specific Plan, the Brown and Caldwell Master Planned collection system for the Southeast Growth area will have to be updated to reflect the defined land uses contained in the Specific Plan

Extensive sewer collection piping will have to be in place before the project site will be able to obtain City of Fresno sewer service. Based on the Brown and Caldwell master plan, a sewer collection main will have to be constructed from the project site westerly in the Clinton Avenue alignment to a connection with a 42" diameter trunk line in DeWolf; then a 42" diameter trunk line must be constructed in DeWolf Avenue southerly to McKinley Avenue where it will then turn westerly in McKinley Avenue to Temperance Avenue. From there, a 42" diameter trunk line must be constructed southerly in Temperance Avenue to Belmont Avenue. South of Belmont Avenue, a 48 inch diameter sewer line will need to be constructed in Temperance Avenue to Church Avenue. Depending on timing of development and the ultimate land uses adopted by the Southeast Growth Area Specific Plan either a 36" diameter line can be constructed westerly in Church Avenue to a point of connection with the Fowler Avenue Truck Sewer, or a new 48" diameter truck sewer must be constructed southerly in Temperance Avenue to North Avenue and then constructed in North Avenue from Temperance Avenue to Peach Avenue where it will connect to the existing trunk

sewer presently located at the intersection of Peach and North avenues (Blair, Church & Flynn, 2007).

Significance Criteria

According to Appendix G of the State CEQA Guidelines, a project may be determined to have a significant effect on the environment if it would (a) require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or (b) result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

Significant Impacts and Mitigation Measures

Impact 13.1:

The project will result in a need for wastewater collection facilities

The proposed project, at full development, is estimated to generate an average daily sewage flow of 61,246 gallons per day (gpd). Table 13-1 documents the projected sewage flow from the project site.

TABLE 13-1
PROJECTED WASTEWATER FLOWS

School Type	School Capacity (students)	Faculty & Staff (persons)	Visitors (5% of students and staff)	Total Persons	Avg Flow Rate Per Unit (gpd) (See Note 1)	Avg Daily Flow (gpd)	Max. Day Flow (gpd) (See Note 2)
High School	2900	150	153	3203	12	38,436	76,900
Intermediate School	1400	100	75	1575	12	18,900	37,800
Elementary School	700	45	37	782	5	3,910	7,800
					Total Site Flow:	**61,246**	**122,500**

Comparison to Potential Area Land Use (See Note 2)	Dwellings (EDU) (See Note 3)	Avg Flow Rate Per EDU (gpd) (See Note 4)	Avg Daily Flow (gpd)	MaxDay Flow (gpd) @2.0xAvg Flow
Concept land use map (Appendix G, City of Fresno 2025 General Plan) for the Southeast Growth Area shows Medium Density Residential in the area of the Educational Center	1,200	290	**348,000**	**696,000**

Notes:

1. The average waste water flow rate for each campus is based on Blair Church & Flynn studies of wastewater flows originating from CUSD and FUSD campus sites. Studies included wastewater flow measurements and comparison of winter water meter readings at various campus sites.
2. Maximum day flow is taken from City of Fresno design criteria, which establishes the maximum day flow to be equal to 2.0 times the average daily flow.
3. The number of equivalent dwelling units, EDU, that could be potentially developed within the project area was determined by taking the 160 acre project area and multiplying by average density of 7.5 unites per acres for Medium Density Residential property.
4. City of Fresno calibrated sewer flow model assigns a dwelling unit flow rate of 290 gpd per day/EDU.

In accordance with the City of Fresno design criteria, the maximum daily flow rate from the site is calculated at 2.0 times the average flow rate. The maximum daily flow rate is estimated at 122,500 gpd (Blair, Church & Flynn, 2007).

The "Concept Land Use Plan for the Southeast Growth Area", as identified in Appendix G of the City of Fresno 2025 General Plan identified a proposed land use of Medium Density Residential in the area of the proposed Educational Center. If the ultimate adopted Specific Plan for the Southeast Growth Area maintains the Medium Density Residential use designation, then 160 acres of that land use could be expected to generate 348,000 gpd average daily flow. The estimated average daily flow from the project would be approximately 18 percent of the wastewater generated by a Medium Density Residential land use development that might be developed in the same area.

Mitigation Discussion

Based on preliminary sewer facilities planning conducted by the City of Fresno, the sewer collection facilities that may need to be constructed to serve the full development of the educational center, if the educational center was the first and only development in the area, are as follows:

- Approximately 15,840' of 48" Trunk Sewer pipe easterly in North Avenue from the intersection of Peach and North Avenues to Temperance Avenue
- Approximately 21,120' of 48" Trunk Sewer pipe northerly in Temperance Avenue from the intersection of Temperance and North Avenues to Belmont Avenue.
- Approximately 5,280' of 42" Trunk Sewer pipe northerly in Temperance Avenue from the intersection of Temperance and Belmont Avenues to McKinley Avenue.
- Approximately 5,280' of 42" Trunk Sewer pipe easterly in McKinley Avenue from the intersection of Temperance and McKinley Avenues to DeWolf Avenue.
- Approximately 2,640' of 42" Trunk Sewer pipe northerly in DeWolf Avenue from the intersection of DeWolf and McKinley Avenues to Clinton Avenue.
- Approximately 2,640' of 10" sewer collection main easterly in Clinton Avenue from the intersection of Clinton and DeWolf Avenues to the project site.
- Sewer manholes and service laterals.

The actual extent of the sewer facilities that will need to be constructed could vary greatly depending on final land use designations adopted by the Southeast Growth Area Specific Plan and the timing, phasing and location of the educational facilities and other developments in the City of Fresno's Southeast Growth Area. Preliminary alternative land use proposals for the Southeast Growth Area substantially increase the population and land use densities originally assumed by the 2025 Fresno General Plan. Implementation these alternatives would necessitate the construction of a satellite wastewater treatment plant in the southern portion of the Southeast Growth Area. The installation of a wastewater treatment plant would result in the modification of the sewer collection facilities listed above.

In any event, the District would be responsible for its proportionate share of improvements and would need to be reimbursed by the City for sewer collection facilities installed by the District that have capacity to serve other developments.

In order for the project to connect to the City of Fresno's wastewater collection system, the District will be required to pay Sewer Facility charges in accordance with the Fresno Municipal Code, Section 9-505.1 and 9-505.2. The Sewer Facility charges consist of two components, a Wastewater Facilities Charge and a Trunk Sewer Charge.

Mitigation Measures

13.1(a) The District shall extend wastewater collection facilities from the nearest City of Fresno sewer main(s) capable of accepting the wastewater flows from the project. The extent of the sewer facilities that will need to be constructed will be determined by the City of Fresno and they may vary depending on the timing, phasing and location of the educational facilities on the site and other developments in the City of Fresno's Southeast Growth Area. The District shall be responsible for funding its proportionate share of improvements by mutual agreement and to the extent required by law and shall be reimbursed by the City for sewer collection facilities installed by the District that have capacity to serve other developments.

13.1(b) The District shall pay Sewer Facility charges as determined by Fresno Municipal Code.

Level of Significance

This impact will be less than significant with the incorporation of the mitigation measures.

Impact 13.2:

Wastewater generated by the project will require wastewater treatment and disposal service

Currently, wastewater collected in the City of Fresno is treated and disposed of at the Regional Wastewater Reclamation Facility, located in the southwest portion of the City, near Jensen and Polk Avenues. To meet the wastewater treatment needs of the Southeast Specific Plan area the City of Fresno may expand the treatment capacity of the Regional Wastewater Reclamation Facility or they may construct a Satellite Wastewater Treatment Plant in the southern portion of the Southeast Growth Area. There also could be a combination of these two methods of meeting the wastewater disposal needs of the Southeast Specific Plan area.

As a part of the development of the Southeast Growth Area Specific Plan, a sewer master plan will have to be prepared in order to document the manner in which the wastewater collection, treatment and disposal facilities will be developed to adequately meet the needs of the Southeast Growth Area. Such a plan would include the wastewater generated from the project site.

Mitigation Discussion

In order for the educational center to be developed, adequate wastewater treatment facilities must be available to accept and treat wastewater from the project site. The City of Fresno has the jurisdictional responsibility to construct, operate and maintain wastewater treatment facilities. The project site can not be developed without the City of Fresno indicating that wastewater treatment facilities are available.

In order for the project to connect to the City of Fresno's wastewater collection system and treatment facilities, the District will be required to pay Sewer Facility charges in accordance with the Fresno Municipal Code, Section 9-505.1 and 9-505.2. The Sewer Facility charges consist of two components, a Wastewater Facilities Charge and a Trunk Sewer Charge.

Mitigation Measures

13.2(a) The availability of wastewater treatment facilities to serve the project site shall be determined by the City of Fresno. Such treatment capacity availability may vary depending on the timing and phasing of the educational facilities on the site and other developments in the City of Fresno's Southeast Growth Area. The project site will not be developed without the City of Fresno having wastewater treatment capacity available to serve the site.

13.2(b) The District shall pay Sewer Facility charges as determined by Fresno Municipal Code.

Level of Significance

This impact will be less than significant with the incorporation of the mitigation measures.

Sources

Blair, Church & Flynn Consulting Engineers, *Clovis Unified School District Fourth Educational Center EIR Water, Sewer and Storm Drainage Issues*. May, 2007.

Brown and Caldwell, *Wastewater Collection System Master Plan.* May 2004.

City of Fresno, *2025 General Plan, Appendix G – Concept Land Use and Circulation Plan Map For the Southeast Growth Area*. November, 2002

Chapter
14

Drainage and Flooding

Setting

This chapter was prepared based on information provided by Blair, Church & Flynn Consulting Engineers.

The proposed project is located within the Fresno Metropolitan Flood Control District (FMFCD). FMFCD's responsibilities include planning, constructing and maintaining the stormwater drainage collection and disposal facilities necessary for urban development within the Fresno metropolitan area. FMFCD is divided into numerous drainage zones that have (or are planned to have) a system of underground gravity flow pipelines that drain to stormwater retention basins or drainage outfalls.

The project site is located within proposed FMFCD Drainage Zone "DS". The Master Plan for Drainage Zone DS is preliminary in nature and has not been adopted by FMFCD. The Drainage Zone DS master plan will be finalized and adopted as a part of the City of Fresno's Southeast Growth Areas Specific Plan process. None of the proposed drainage collection system and disposal facilities for Drainage Zone "DS" have been constructed. The retention basin for Drainage Zone "DS" has been acquired by FMFCD and it is located immediately west of the project site, between Leonard and DeWolf Avenues (FMFCD, 2007).

Significance Criteria

Appendix "G" of the State of California CEQA Guidelines provides that a project may be determined to have a significant effect on the environment if it would (a) substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner that would result in substantial on- or off-site erosion or siltation; (b) substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site; (c) create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; (d) place within a 100-year flood hazard area structures that would impede or redirect flood flows; or (e) expose people or structures to significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

Significant Impacts and Mitigation Measures

Impact 14.1:

The project will result in increased stormwater runoff

Storm water runoff from the project site will increase as a result of converting the site from existing agricultural and rural residential use to an Educational Center. Utilizing the FMFCD design event of storing the site runoff generated from 0.5 feet of rainfall and utilizing an overall coefficient of runoff, C-factor, of 0.55, the 160 gross acre campus site would generate approximately 49.5 acre-feet of storm water runoff (Blair, Church & Flynn, 2007).

The FMFCD has a preliminary Storm Drainage Master Plan for Drainage Zones "DS" (FMFCD, 2007). The master plan for the drainage zone will be finalized and adopted by FMFCD in conjunction with the City of Fresno's Southeast Growth Areas Specific Plan process.

Full development of Educational Center will require the construction of the FMFCD master planned storm drainage collection system pipelines and a portion of the proposed storm drainage retention basin, sized appropriately to store the runoff produced from the proposed project based on 0.5 feet of rainfall. The route of the master planned facilities may be modified, upon the approval of FMFCD. Any additional costs imposed on the project by an increase in the length of pipe facilities, not included in the route established in the FMFCD Master Plan, are to be paid for as a part of the project development.

Mitigation Measures

14.1(a) The District shall enter into a mutually acceptable agreement with FMFCD for the development of the master-planned storm drainage facilities. The agreement would identify storm drainage fee obligations of the District for development of the site and/or fee credits and/or future reimbursements for the District's construction of any of the master-planned storm drainage facilities. If permanent facilities are not available or feasible at the time of project construction, the District shall have the option to construct temporary on-site ponding facilities until permanent facilities are constructed or available.

14.1(b) The District shall construct the FMFCD Master Plan Storm Drainage Facilities that would connect the site to the FMFCD drainage basin DS and excavate adequate storage volume within that basin to provide for the storage of the runoff generated from the Educational Center site.

14.1(c) The District shall dedicate storm drainage easements related to the construction of any of the master-planned storm drainage pipelines that would occur on the site, outside of the street right-of-way areas.

Level of Significance

This impact will be less than significant with the incorporation of the mitigation measures.

Impact 14.2:

Stormwater runoff from project construction activities may pollute natural watercourses and aquifers

Construction activities can ultimately pollute natural watercourses and aquifers by (1) disturbing vegetation and soils, which causes erosion and siltation, and (2) through the use of various construction materials and equipment, which may release fuel, oils, solvents, paints and other pollutants onto the ground. These pollutants, carried in storm drainage, can find their way to watercourses, drainage basins and groundwater. Construction of the project, therefore, could result in pollution of natural watercourses or underground aquifers in the area.

Mitigation Measures

14.2(a) Project construction documents shall include (1) measures to prevent the disposal of wastes, effluent, chemicals, or other noxious substances on the project site during construction and (2) procedures to contain and properly clean up any accidental spillage or disposal.

14.2(b) The District shall comply with Environmental Protection Agency National Pollution Discharge Elimination System (NPDES) permit requirements, administered by the State Water Resources Control Board (SWRCB), as follows:

(1) file a Notice of Intent (NOI) for discharge from the project site in accordance with NPDES requirements prior to commencing construction;

(2) require that the project contractor or District prepare a Storm Water Pollution Prevention Plan (SWPPP) in accordance with guidelines adopted by the SWRCB and institute the SWPPP during construction of the project. The SWPPP shall provide a best management plan for the source control of any pollutants that may be mobilized by runoff generated on the construction site and which may enter the public drainage system; and

(3) file a Notice of Completion of Construction for the project site identifying that pollution sources were controlled during construction and implement a closure SWPPP for the site.

Level of Significance

This impact will be less than significant with the incorporation of the mitigation measures.

Impact 14.3:

Development within a flood prone area may result in a portion of the site being subject to periodic flooding.

A small portion of the project site is identified as being within a Zone A flood prone area [100-year flood hazard area] as designated on Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (Blair, Church & Flynn, 2007). FEMA defines a Zone A flood prone area as those areas having a 1% annual chance of flooding. Because detailed analyses are not performed for such areas; no flow depths or base flood elevations are shown on the Flood Insurance Rate Maps within the Zone A areas. The Zone A area on the project site appears to be a

depressed area that retains rainfall runoff and it is not created from off-site flood flows that flow through the site (Blair, Church & Flynn, 2007).

Mitigation Measures

14.3(a) Construction documents for the Educational Center are to include grading and drainage plans. These plans shall be prepared in a manner that specifies the filling and grading of the Zone A flood prone area such that no drainage water will be retained on the site. All grading and drainage plans shall be prepared consistent with FMFCD's drainage master plan and shall be reviewed and approved by FMFCD.

14.3(b) Based on the project's grading and drainage plan, the District shall file a Letter of Map Revision (LOMR) with FEMA. With FEMA's approval of the LOMR, the Zone A flood prone designation will be removed from the Flood Insurance Rate Maps and the project will no longer have a portion of the site designated as flood prone.

Level of Significance

This impact will be less than significant with the incorporation of the mitigation measures.

Impacts Not Found to Be Significant

No Impact

The FMFCD owns and operates the Redbank Reservoir, a flood control retention facility on Redbank Creek, located approximately 4.5 miles northeasterly of the project site. The Redbank Reservoir falls under the jurisdiction of the State of California Division of Safety of Dams (DSOD). The owners of all dams under DSOD jurisdiction must prepare an analysis of the downstream flooding impacts resulting from a breach of the dam and prepare maps that show the inundation limits of the resulting flood wave. Based upon the Redbank Dam inundation maps on file at FMFCD, the project is outside of the limits of the inundation area that would be created by a flood wave in Redbank Creek that originates from a failure of the Redbank Dam (Blair, Church & Flynn, 2007).

Sources

Blair, Church & Flynn, Consulting Engineers. *Clovis Unified School District Fourth Educational Center EIR Water, Sewer and Storm Drainage Issues*. June, 2007.

Fresno Metropolitan Flood Control District, Letter Response to NOP, April 6, 2007.

Chapter 15

Solid Waste

Project Setting

Solid waste collection service for the District is provided by a private waste contractor, Industrial Waste and Salvage (IWS). IWS transports its solid waste to the American Avenue Landfill, which is owned and operated by the County of Fresno. The permitted capacity for the landfill is 44.4 million cubic yards. In 2007, the remaining capacity was 29.3 million cubic yards (including air space and closure cap.) The County estimates that the landfill received an average of 1,429 tons of solid waste per day for 2006-2007.

The California Integrated Waste Management Act of 1989 requires that all cities and counties in California meet a waste diversion goal of 25 percent by 1995 and 50 percent by the year 2000. Waste diversion means that waste is diverted from disposal in a landfill through either source reduction and recycling or other methods. The waste materials diverted include green waste, paper, cardboard, plastic, glass, and metals. In 2005, the County of Fresno had a waste diversion rate of 41 percent (Southeast Center Project DEIR, 2006).

Significance Criteria

According to Appendix G of the State CEQA Guidelines, a project may be determined to have a significant effect on the environment if:

- The landfill serving the site has insufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- The project does not comply with federal, state and local statutes and regulations related to solid waste.

Significant Impacts and Mitigation Measures

No solid waste-related impacts were found to be significant.

Impacts Not Found to be Significant

Impact 15.1:

The project will increase local demand for landfill space.

The project, when fully developed, will generate approximately 900 tons of solid waste per year.[1] Assuming a diversion rate of 50 percent by the time the project is fully developed, approximately 450 tons per year of the project-generated solid waste would be diverted, leaving 450 tons per year to be deposited in a landfill.

The American Avenue landfill receives approximately 620,000 tons per year of solid waste (County of Fresno, 2000). Therefore, the 450 tons per year of solid waste generated by the project that would go to the landfill would equal about 0.073 percent of the annual amount of waste deposited at the landfill.

The American Avenue Landfill has sufficient capacity to serve the unincorporated and incorporated area populations projected by the *Fresno County General Plan* (County of Fresno, 2000). Since the landfill has sufficient permitted capacity to accommodate the disposal needs of the project and since the District has received no indication from the Fresno County Public Works and Planning Department or any other agency (in response to the Notice of Preparation) that the project would not comply with federal, state and local statutes and regulations related to solid waste, this impact is considered less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance

This impact is less than significant.

Sources

Betancur, Dan, Environmental Health Specialist, Fresno County Department of Environmental Health (April 2007). Personal communications with Gabriel Gutierrez

California Integrated Waste Management Board (2007, May 4). Active Landfills Profile for American Avenue Disposal Site (10-AA-0009). (URL:http://www.ciwmb.ca.gov/SWIS/Detail.asp?PG=DET&SITESCH=10-AA-0009&OUT=HTML)

State Center Community College District, *Draft Environmental Impact Report, Southeast Center Project*. Environmental Consultant, Paoli & Odell, Inc. October 2006.

Fresno, County of. (2000, January). *Fresno County General Plan Public Review Draft Background Report.*

Fresno, County of. (2000, February). *Fresno County General Plan Public Review Draft Environmental Impact Report.*

[1] Based on solid waste generation at similar facilities in the Clovis Unified School District (Clovis Unified School District, 2000)

Chapter
16

Law Enforcement and Fire Protection

Project Setting

Law Enforcement

The Fresno County Sheriff's Department provides law enforcement services to unincorporated areas of the County. The California Highway Patrol (CHP) is responsible for enforcing traffic laws on highways and roadways in the unincorporated areas. The CHP also handles all school bus collisions in California and is responsible for inspecting school buses and testing school bus drivers.

The City of Fresno Police Department would be responsible for law enforcement services after the project study area is annexed to the City of Fresno.

The Clovis Unified School District has its own police department, which patrols facilities and property owned by the District. The Department is responsible for protecting the safety of students, faculty, and District property and for maintaining an atmosphere conducive to learning. In addition, the Department is responsible for patrolling District-sponsored extracurricular events.

The District has Memorandums of Understanding with the Fresno Police Department and the Fresno County Sheriff's Department for mutual aid assistance.

Fire Protection

The Fresno County Fire Protection District (FCPFD) provides fire protection services for the unincorporated area in which the project area is located. The nearest FCFPD fire station is at 4925 N. Nelson, Clovis, about 5 street miles northeast of the project site.

The City of Fresno Fire Department would serve the project after the site is annexed to the City. The nearest City of Fresno facility is Station No. 10 at 5545 Air Terminal, near the Fresno-Yosemite International Airport, about 4 ½ street miles west of the project site.

Significance Criteria

According to Appendix G of the State CEQA Guidelines, a project may be determined to have a significant effect on the environment with respect to public services if it would result in adverse physical impacts associated with the provision of new or physically altered law enforcement or fire protection facilities, or the need for new or physically altered law enforcement or fire protection facilities, the construction of which could cause significant

environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for law enforcement or fire protection.

Significant Impacts and Mitigation Measures

No law enforcement- or fire protection-related impacts were found to be significant.

Impacts Not Found to Be Significant

Impact 16.1:

The project will cause an increased demand for law enforcement services.

The need for law enforcement services in the project vicinity will increase because of the project. Most of this need would be met by the District's Police Department, which would have primary responsibility for on-campus law enforcement services. This would include patrolling during and after regular school hours and during special events. The District's Police Department would also assist the Fresno County Sheriff's Department and Fresno Police Department through the mutual aid Memorandum of Understanding between the District and the two agencies.

The Fresno County Sherriff's Department City would have a backup law enforcement responsibility until the site is annexed to the City of Fresno, when the Fresno Police Department would assume this responsibility. The Sherriff's Department and the Police Department were sent a Notice of Preparation (NOP) for the project. The agencies did not respond to the NOP, which indicates they did not have environmental concerns about the project.

Mitigation Measures

No mitigation measures are required.

Level of Significance

This impact will be less than significant.

Impact 16.1:

The project will cause an increased demand for fire protection services.

The need for fire protection services, including emergency medical services, will increase because of the project. Fire protection would be provided by the Fresno County Fire Protection District until the project is annexed to the City of Fresno, at which time the Fresno Fire Department would assume this responsibility.

The project would comply with City of Fresno fire protection requirements. The City's water system would be extended to serve the project before it becomes operational, and all permanent buildings would have fire sprinklers.

The Fresno County Fire Protection District and Fresno Fire Department were sent a NOP for the project. The agencies did not respond to the NOP, which indicates they did not have environmental concerns about the project.

Mitigation Measures

No mitigation measures are required.

Level of Significance

This impact will be less than significant.

Sources

City of Fresno Fire Department 2007, May 4). *Station Locations.* (URL: http://www.fresno.gov/fire/stations.asp)

Fresno County Fire Protection District (2007, May 14). *About FCFPD.* (URL: http://www.fresnocountyfire.net/index.htm)

Chapter
17

Schools

Project Setting

The project site is within the Clovis Unified School District (District). The nearest existing District schools to the project site are Temperance-Kutner Elementary School and the Reagan Educational Center. The project consists of the construction and operation of an educational center to serve the District's southern region. The project will enhance school services and provide increased recreational opportunities for the region's residents.

Significance Criteria

According to Appendix G of the State CEQA Guidelines, a project may be determined to have a significant effect on the environment with respect to schools if it would result in substantial adverse physical impacts associated with the provision of new or physically altered school facilities, need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for schools.

Significant Impacts and Mitigation Measures

No school-related impacts were found to be significant.

Impacts Not Found to be Significant

The project would have no direct impacts upon the District. It would not generate enrollment nor would it have direct physical impacts (e.g., noise, air quality) upon the District's Temperance-Kutner Elementary School or Reagan Educational Center.

The project does have the potential to induce urban growth in its vicinity. This impact and its relationship to public facilities and services, including schools, are discussed in Chapter 21, Growth Inducing Impacts.

The project would have a beneficial impact on elementary, intermediate, and secondary educational services in the District's southern region.

Source

Clovis Unified School District (2007, May 21). *Temperance-Kutner Elementary School and Reagan Educational Center* (URL: http://www.cusd.com/schools)

Chapter
18

Parks and Recreation

Project Setting

No public park or recreation facilities are within at least one mile of the project site.

Significance Criteria

According to Appendix G of the State CEQA Guidelines, a project may be determined to have a significant effect on the environment with respect to parks if it would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered park facilities, need for new or physically altered park facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for parks;
- 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; or
- Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

Significant Impacts and Mitigation Measures

No parks- or recreation-related impacts were found to be significant.

Impacts Not Found to be Significant

The project would have no direct physical impacts upon parks and recreation facilities because none are located near the project site. Moreover, the project would not directly generate the need for new park and recreation facilities or the alteration of existing facilities because it will not directly generate population growth.

The project does have the potential to induce urban growth in its vicinity. This impact and its relationship to public facilities and services, including parks and recreation facilities, are discussed in Chapter 21, Growth Inducing Impacts.

The project would have a beneficial impact on parks and recreation in the southeast Fresno area by providing sports and athletic facilities that the public can use during non-school hours by prior arrangement with the District (CUSD, 2007).

Source

Clovis Unified School District. Consultation with Clovis Unified School District administrative staff: Walt Byrd, Assistant Superintendent, Facility Services and Bill McGuire, Associate Superintendent, Administrative Services.

Chapter
19

Energy Resources

Setting

The project study area is within the service area of the Pacific Gas and Electric Company (PG&E) for electricity and gas.

Significance Criteria

Based upon Appendix F of the State CEQA Guidelines, a project may be determined to have a significant effect on the environment if it would substantially affect local or regional energy supplies or requirements for additional energy capacity; fail to comply with existing energy standards; or substantially affect transportation use requirements.

Significant Impacts and Mitigation Measures

Impact 19.1:

The project will consume electrical energy and natural gas.

Based on an estimated total building square footage of 750,000 square feet, the estimated electrical consumption for the proposed educational center is 6,632 megawatt hours per year.

Natural gas will be used at the site to provide energy for heating and air conditioning (HVAC) units, centralized boiler heating systems, water heaters and swimming pool heaters. It is estimated that the natural gas consumption for the fully developed campus will be approximately 66,228 therms per year.

The design and operation of the educational center is subject to the requirements of Title 24 of the California Code of Regulations. Title 24 mandates specific standards for energy conservation and increasing energy efficiency. The design of the project would incorporate an energy control and management system and other features intended to minimize energy usage.

Both the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) for Schools and the Collaborative for High Performance Schools (CHPS) programs provide a number potential measures to reduce energy use at schools. These measures include but are not limited to optimum building orientation for energy efficiency, the use of daylighting (designing the buildings to maximize the use of natural light); energy efficient lighting with automatic shutoff and dimming, the use of cool reflective roofing materials; and the landscaping and shading of parking, hardscape and building areas to keep ambient temperatures down.

PG&E was notified of this project and did not give any indication that this project could not be served by electrical or natural gas facilities in the area or that it would substantially affect local or regional energy supplies.

Mitigation Measures

19.1(a) The District shall design all on-site facilities and equipment to exceed Title 24 requirements by 20 percent.

19.1 (b) The District shall incorporate an energy control and management system in the project design.

19.1(c) The District shall incorporate the following energy reducing measures in the design of the project as recommended in the LEED for Schools and Collaborative for High Performance Schools programs to the extent feasible and subject to financial limitations: optimum building orientation for energy efficiency, daylighting (designing the buildings to maximize the use of natural light); energy efficient lighting with automatic shutoff and dimming, the use of cool reflective roofing materials; and the landscaping and shading of parking, hardscape and building areas to keep ambient temperatures down.

Level of Significance

This impact will be less than significant with the incorporation of the mitigation measures.

Impacts Not Found to be Significant

Impact 19.2:

Project construction and project-related vehicular trips will consume non-renewable energy resources

Gasoline and diesel fuel will be consumed by equipment during construction of the project and by vehicles traveling to and from the educational center once it is operational. Fuel consumption for typical construction activities is not expected to be unusual or significant. Fuel consumption for project-related vehicle trips would be less than the amount consumed if the project were not constructed. This is because most students from the future attendance areas of the schools would have to travel further to other facilities if the project were not constructed. With respect to the stadium, District high schools currently use the stadiums located in the central and northern portions of the District. A stadium at this location will provide a facility for the southern portion of the District. This will result in less fuel being consumed for travel to the District's stadiums located north of the project site.

The project site is centrally located within the northern portion of the City of Fresno's Southeast Growth Area. This will facilitate efficient transportation to the site in terms of both motorized and non-motorized transportation modes. The specific plan for the Southeast Growth Area is currently being prepared and will incorporate efficient land use patterns, trails and bicycle paths to minimize motor vehicle trips to and from the site. As noted in mitigation measure 10.3(b) in the Air Quality Chapter, "the District shall work with the City of Fresno in

designing the project site to facilitate safe and convenient pedestrian and bicycle connections to adjacent neighborhoods."

Mitigation Measures

No mitigation measures are required.

Level of Significance

This impact is considered less than significant.

Sources

Ambient Air Quality and Noise Consulting. Energy consumption estimates derived from California Energy Commission California Commercial End Use Survey. http://capabilities.itron.com/CeusWeb/Chart.aspx. 2008.

Collaborative for High Performance Schools. *CHPS Best Practices Manual, Volume II – Design*. 2006.

U.S. Green Building Council. *LEED for Schools for New Construction and Major Renovations*. First Edition, updated November 2007.

Chapter
20

Hazardous Materials and Conditions

Project Setting

The Planning Center completed a preliminary environmental assessment (PEA) for the Fourth Educational Center Project. The following project setting information comes from the PEA:

> The approximately 160.5-acre project site is located east of Fresno in unincorporated Fresno County, California. The site is in the process of being acquired by the District for construction of an educational center, including a high school, an intermediate school, an elementary school and an athletic and recreational facility. According to historical aerial photographs and topographic maps, the northwestern portion of the site appears to have been utilized as an almond orchard since at least 1998. Prior to 1998, the northwestern portion of the site was utilized as an orchard from at least 1957. The site was used for agricultural purposes from at least 1957 to about 1987. Residential dwellings have been located on the southeastern portion of the site since at least 1957, with additional dwellings built up to about 1998. Two residences were located on the northern portion of the site from at least 1921 until they were demolished in about 1989. The remainder of the site has been used to store fill from the excavation of Redbank Detention Basin by Fresno Metropolitan Flood Control District since fall of 1990.

Significance Criteria

According to Appendix G of the State CEQA Guidelines, a project may be determined to have a significant effect on the environment if it would:

- 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;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or wastes within one-quarter mile of an existing or proposed school;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Sec. 65962.5 and, as a result, would it create a significant hazard to the public or the environment;

- 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 for people residing or working in the project site;

- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project site;

- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or

- 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.

The following health and safety related requirements regulations apply to the proposed schools. They are from California Education Code Section 17213, Public Resources Code Section 21151.8, and California Code of Regulations, Title 5, Section 14010:

- The school site is not within one-fourth mile of facilities which might reasonably be anticipated to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste;

- The school site is not currently or formerly a hazardous or solid waste disposal site, currently or formerly a hazardous waste release site,

- The school site does not contain underground or above ground pipelines which carry hazardous substances, acutely hazardous materials, or hazardous wastes (unless the pipeline is a natural gas line which is used only to supply natural gas to that school or neighborhood);

- The property line of the school site even if it is a joint use agreement as described in subsection (o) of this section shall be at least the following distance from the edge of respective power line easements: 100 feet for 50-133 kV line; 150 feet for 220-230 kV line; 350 feet for 500-550 kV line.

- If the proposed school site is within 1,500 feet of a railroad track easement, a safety study shall be done by a competent professional trained in assessing cargo manifests, frequency, speed, and schedule of railroad traffic, grade, curves, type and condition of track need for sound or safety barriers, need for pedestrian and vehicle safeguards at railroad crossings, presence of high pressure gas lines near the tracks that could rupture in the event of a derailment, preparation of an evacuation plan. In addition to the analysis, possible and reasonable mitigation measures must be identified.

- The school site shall not be located near an above-ground water or fuel storage tank or within 1,500 feet of the easement of an above ground or underground pipeline that can pose a safety hazard as determined by a risk analysis study, conducted by a competent professional, which may include certification from a local public utility commission.

- If the proposed school site is on or within 2,000 feet of a significant disposal of hazardous waste, the school district shall contact the Department of Toxic Substance

Control for a determination of whether the property should be considered a Hazardous Waste Property or Border Zone Property.

Significant Impacts and Mitigation Measures

Impact 20.1:

Pesticide application or product disposal associated with prior agricultural and residential use could have materially impacted the project site.

According to the PEA, the site has been used for agricultural purposes from at least 1957 to about 1987. The northwestern portion of the site continues to be used for agricultural and residential purposes (almond orchard with single family residence). Eight rural residences exist in the southeast quarter of the site. On that basis, the potential exists that pesticide application or product disposal associated with the agricultural and residential use of the site could have materially impacted the site.

Mitigation Measure

20.1 Prior to site development and in accordance with Education Code Section 17213.1, the site shall be tested for persistent agricultural chemicals, residential pesticides and other potential contaminants in accordance with the Preliminary Environmental Assessment. Should such contaminants be identified in the soil in concentrations that would be detrimental to human health, appropriate remediation of site soils, or other effective mitigation, shall take place prior to site development in accordance with Education Code Section 17213.2.

Level of Significance

This impact will be less than significant with the incorporation of the mitigation measure.

Impacts Not Found to be Significant

Impact 20.2:

The project will use hazardous materials for maintenance of facilities, pest control, landscaping, and swimming pool disinfection.

Project operations will involve the use of potentially hazardous materials, such as pesticides for insect and rodent control, paints and cleaning fluids for building maintenance, herbicides and fertilizer for landscaping, and chemicals for science laboratories and swimming pools.

The potential for significant impacts resulting from the use of these hazardous materials is not considered significant because the District will use them in a safe manner following labeled directions.

Mitigation Measures

None required.

Level of Significance

This impact will be less than significant.

Impact 20.3:

Individuals on the project site may be exposed to agricultural chemicals from nearby farming operations.

The project site adjoins agricultural operations. Therefore, it is possible that individuals on the site could be exposed to agricultural chemicals that drift or are otherwise transported onto the site. The potential for this impact is considered less than significant because of regulations applicable to the use of agricultural chemicals near sensitive uses such as schools (see Chapter 5).

Mitigation Measures

None required.

Level of Significance

This impact is considered less than significant.

No Impacts

Based on the sources consulted for this EIR, the project would not emit hazardous emissions or handle hazardous materials, substances, or wastes nor is it located within one forth mile of facilities which might reasonably be anticipated to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste. The project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and is not currently or formerly a hazardous or solid waste disposal site or currently or formerly a hazardous waste release site. The site does not contain underground or above ground pipelines that carry hazardous substances, acutely hazardous materials, or hazardous wastes.

The project site is not within two miles of a public airport, public use airport, or private airstrip, nor within 1,500 feet of a railroad. It is at least 350 feet from any major power line easement; and is not on or within 2,000 feet of a significant disposal of hazardous waste. The site is not within a wildland fire area and has no characteristics that would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Sources

This chapter is based on the following report:

Planning Center, The. *Preliminary Environmental Site Assessment Report for: Proposed Fourth Educational Center*. March 6, 2008.

Chapter 21

Growth-Inducing Impacts

Setting

This section identifies and discusses ways in which the proposed project could encourage economic or population growth or the development of housing in its vicinity.

In general, there are several ways in which a new project can induce growth: (1) by establishing a precedent for urban development in an area not currently developed or planned for development; (2) by serving as a focus or amenity around which a neighborhood or community develops; (3) by extending urban infrastructure (streets, sewers, water, etc.) into an area that can serve other development; (4) by creating conditions that make the continuance of nearby agricultural operations untenable; and (5) by creating jobs in an area that could induce additional housing development.

The physical environment in which the project site is situated is described in Chapters 3 through 20. In summary, the project site is in a rural, agricultural setting east of the City of Fresno and south of the City of Clovis. The nearest urban development is approximately one and one-quarter mile northwest of the project site, within the Cities of Fresno and Clovis.

The project site and surrounding land is within the City of Fresno Sphere of Influence. The *2025 Fresno General Plan* conceptually designates the project site and land to the north and south for medium density residential development as part of the Southeast Growth Area. The land to west is conceptually planned for commercial (mixed use and office) and medium low density residential development and the land to the east is conceptually planned for medium low density development The City must adopt a specific plan for the Southeast Growth Area before urban development can begin within the area. The City is currently preparing the plan, which is expected to be completed in 2009. The actual land uses resulting from the Southeast Growth Area specific planning process will likely be substantially different than the concept plan.

No community water, sewer, or flood control systems exist in the project vicinity.

Significance Criteria

Pursuant to Section 15126.2(d) of the State CEQA Guidelines, a project may be determined to have a significant effect on the environment with respect to growth-inducement if it would foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.

Significant Impact and Mitigation Measures

Impact 21.1:

The project has the potential to induce urban growth in its vicinity.

The project could induce urban growth in its vicinity by serving as a community focus or amenity that would attract residential development to the area, through the installation of infrastructure in the area which could facilitate additional urban development, and by employing approximately 365 faculty and staff, which could increase the desirability of placing housing near the site for employees.

However, a determination must be made as to whether the potential for growth inducement is significant. The project site is within the City of Fresno's sphere of influence and designated for urban development by the City's 2025 Fresno General Plan as part of the Southeast Growth Area. The project site is centrally located within the northern portion of the Southeast Growth Area. A specific plan is currently being prepared for the Southeast Growth Area and no urban development can occur in this area until the plan is finished and adopted. Significant challenges remain as to how the area is to be provided with water and sewer service. A new surface water treatment plant will be necessary, as well as a wastewater treatment plant, before significant development can take place in the area.

Given the above backdrop, the project will not have a significant growth inducing effect because any growth induced will be within an area comprehensively planned for urban development, and development of the area will occur with or without the project. Given the significant infrastructure challenges to developing the area as noted above, it is unlikely that the project could be developed by itself as an island in an otherwise undeveloped area. It is dependent upon the base infrastructure for the specific plan and would likely need to be developed in concert with other development in the area in order to be feasibly served by urban infrastructure.

Existing Requirements

The City of Fresno must adopt a specific plan for the Southeast Growth Area before it can approve and provide services to development within the area.

Mitigation Measures

No mitigation measures are required.

Level of Significance

This impact will be less than significant.

Sources

Fresno, City of (2002, February 1) *City of Fresno 2025 General Plan.*

Fresno, City of and Fresno, County of (2003, January 6). *Amended and Restated Memorandum Of Understanding Between The County Of Fresno And The City Of Fresno.*

Fresno, County of (2000, January). *Fresno County General Plan Public Review Draft Policy Document.*

Chapter
22

Cumulative Impacts

Introduction

A cumulative impact is an impact created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. Section 15130 of the State CEQA Guidelines requires an EIR to discuss cumulative impacts when the project's incremental effect is cumulatively considerable. As defined in Guidelines Section 15065(a)(3), "cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects."

Under Guidelines Section 15130(b)(1), the cumulative impact analysis in an EIR can be based upon either:

> (A) A list of a past, present and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or
>
> (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environment document which has been adopted or certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact.

The cumulative impacts evaluation in this EIR is based upon the cumulative impacts analysis presented in *Master Environmental Impact Report No. 10130 – 2025 Fresno General Plan* (MEIR) (State Clearinghouse No. 2001071097). The MEIR is available for public review at the District Administration Office.

The geographic area and planned development encompassed by *2025 Fresno General Plan* and evaluated in the MEIR, as shown on Figure 22-1, encompasses urban development within the Southeast Growth Area, where the project is proposed. The MEIR, in Chapter III – Project Description, under "General Plan Land Use Changes," states, "this MEIR addresses the physical impacts anticipated from key changes in land uses proposed in the *2025 Fresno General Plan*." (p. III-2)

The Draft MEIR describes one of the key changes as follows:

> 1. A 22-square mile expansion of the planned urban boundary and sphere of influence to accommodate approximately 65,000 people (8.2% of the projected year 2025 population). This geographic expansion (including the

North Growth Area and the Southeast Growth Area) is graphically portrayed in Figure III-1. (p. III-2)

As described in Chapter 3 of this EIR, the *2025 Fresno General Plan* conceptually designated the portion of the Southeast Growth Area in which the project is proposed for medium density residential development, and the project is inconsistent with this designation. Therefore, in the following discussion of cumulative impacts, any differences between project-related impacts and impacts associated with medium density residential development as contemplated in the general plan will be addressed.

Cumulative impact information for traffic, air quality, and noise, based on research and analysis conducted specifically for this EIR, is presented in Chapters 9, 10, and 11, respectively.

Cumulative Impacts

The following evaluation presents the summary description of cumulative impacts from the Draft MEIR and a discussion of the project's relationship to each impact.

A. Population and Housing

1. MEIR Conclusion: Cumulative impact is not considerable. (DMEIR, p. VI-1)

2. MEIR Rationale: The *2025 Fresno General Plan* was developed to accommodate Fresno's fair share of the region's growth forecast. (DMEIR, p. VI-1)

3. Project Relationship: The combined cumulative impact associated with the project's incremental effect and the effects resulting from implementation of the *2025 Fresno General Plan* is not considerable. This conclusion is based on growth-related information in the MEIR and the analysis of growth inducing impacts in Chapter 21 of this EIR and alternatives to the project in Chapter 24. While the proposed project has the potential to induce urban growth within the Southeast Growth Area, so does the residential development planned for the project site under the general plan and for most of the same reasons as the project. The MEIR conclusion, therefore, would not change if the project was developed instead of residential development.

B. Increased Transportation and Coordination

1. MEIR Conclusion: Significant and unavoidable cumulative impacts (DMEIR, p. VI-1).

2. MEIR Rationale: Future development in accordance with the *2025 Fresno General Plan* will contribute to the present and projected adverse traffic congestion on urban and arterial streets under the jurisdiction of the City of Clovis and the County. There are no mitigation measures available to reduce these impacts below a level of significance (DMEIR, p. VI-1).

3. Project Relationship: The project's contribution to this significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant. As described in Chapter 9, Traffic and Transportation, the project will have significant

traffic-related impacts. However, these impacts will be rendered less than cumulatively considerable by the mitigation measures specified in Chapter 9.

C. Degradation of Air Quality

1. MEIR Conclusion: Significant and unavoidable cumulative impacts (DMEIR, p. VI-1).

2. MEIR Rationale: The *2025 Fresno General Plan* contains objectives and policies to moderate effects to air quality. The *2025 Fresno General Plan* also calls for an increase in the densities of certain parcels, mixed land uses, and a refocus on existing neighborhoods. These policies work to reduce dependence on the private automobile and to reduce vehicle miles traveled through supporting multiple centers. Although these measures will result in positive air quality effects, they will not offset the effects caused by increased population (DMEIR, p. VI-1).

3. Project Relationship: MEIR conclusion would not change because of the project. The project will contribute to the significant and unavoidable cumulative air quality impacts.

D. Impacts to Water Supply, Quality, and Hydrology

1. MEIR Conclusion: Significant and unavoidable cumulative impacts (DMEIR, p. VI-1).

2. MEIR Rationale: Although the proposed policies in the *2025 Fresno General Plan* adequately address water supply issues, the subject of greatest concern relates to the implementation of a water conservation program and the maintenance of the 60,000 acre-foot allocation. The City continues to cooperate with the Fresno Metropolitan Flood Control District in reviewing projects to conform with National Pollutant Discharge Elimination System (NPDES) permit requirements, as well as the District's Stormwater Management Plan (DMEIR, p. VI-1&2).

3. Project Relationship: The MEIR conclusion would not change because of the project. Medium density residential development, as contemplated under the *2025 Fresno General Plan*, would consume approximately 239 acre-feet more water annually than the project, as proposed by the District. While this constitutes a significant decrease in water consumption, this cumulative impact remains significant and unavoidable.

E. Loss of Productive Agricultural Resources

1. MEIR Conclusion: Significant and unavoidable cumulative impacts (DMEIR, p. VI-2).

2. MEIR Rationale: The Final EIR for the *Fresno County General Plan* reported, in October 2000, that implementation of the County General Plan will result in a loss of 37,737 acres of land currently producing food and fiber. The loss of agricultural land caused by the *2025 Fresno General Plan* will be added to that total; both the *Fresno County General Plan* and the *2025 Fresno General Plan* have concluded that such loss will be significant and unavoidable (DMEIR, p. VI-2).

3. Project Relationship: The MEIR conclusion would not change because of the project. The same loss of agricultural land would occur if the project site was converted to residential use, as contemplated under the *2025 Fresno General Plan*, or developed with the project, as proposed by the District.

F. Increased Demand for Utilities and Service Systems (Wastewater, Stormwater Drainage, Water, Solid Waste, Power, Natural Gas)

1. MEIR Conclusion: Cumulative impact is not considerable (DMEIR, p. VI-2).

2. MEIR Rationale: Adequate capacity can be provided for all utility and service systems, upon development. Long-term water supply is addressed separately in Section VI-D, above (DMEIR, p. VI-2).

3. Project Relationship: The combined cumulative impact associated with the project's incremental effect and the effects resulting from implementation of the *2025 Fresno General Plan* is not considerable. This conclusion is based on the public utilities- and services-related information in the MEIR and the analyses of water supply and quality, wastewater collection and disposal, drainage and flooding, solid waste, and energy resources in Chapters 12, 13, 14, 15, and 19, respectively. Both the proposed project and the conceptual residential development will require the subject utilities and services. The project would consume significantly less water annually as residential development on the site and would generate considerably less wastewater than would residential development. Drainage- and flooding-related impacts could be addressed for the project just as they could for residential development: through compliance with Fresno Metropolitan Flood Control District requirements. Project-related solid waste and energy impacts were not identified as significant by the utilities responsible for providing the services.

G. Increased Demand for Public Services (Law Enforcement and Fire Protection)

1. MEIR Conclusion: Cumulative impact is not considerable (DMEIR, p. VI-2).

2. MEIR Rationale: Growth and development in the City's general plan area will increase the demand for police and fire protection services. However, police and fire services will adequately serve the development proposed under the *2025 Fresno General Plan* (DMEIR, p. VI-2).

3. Project Relationship: The combined cumulative impact associated with the project's incremental effect and the effects resulting from implementation of the *2025 Fresno General Plan* is not considerable. This conclusion is based on the public services-related information in the MEIR and the analysis of fire and police protection services in Chapter 16. Both the proposed project and the planned residential development will require law enforcement and fire protection services. The service requirements for the project may be less than required for residential development because the District has its own police department and school facilities must be developed to stringent fire protection standards.

H. Increased Demand for Recreational Opportunities

1. MEIR Conclusion: Cumulative impact is not considerable (DMEIR, p. VI-2).

2. MEIR Rationale: The cumulative impact study area for Increased Demand for Recreational Opportunities is the same as the study area for direct impacts. The *2025 Fresno General Plan* proposes to update the City's Master Parks Plan to be consistent with the General Plan (DMEIR, p. VI-2).

3. Project Relationship: The project would have a cumulatively beneficial impact on parks and recreation by providing sports and athletic facilities that the public can use during non-school hours by prior arrangement with the District.

I. Loss of Biological Resources

1. MEIR Conclusion: Cumulative impact is not considerable (DMEIR, p. VI-2).

2. MEIR Rationale: There is a relatively small amount of habitat and foraging area within the jurisdiction of the *2025 Fresno General Plan* (DMEIR, p. VI-2).

3. Project Relationship: The MEIR conclusion would not change because of the project. The same loss of habitat and foraging area would occur if the project site was converted to residential use, as contemplated under the *2025 Fresno General Plan*, or developed with the project, as proposed by the District.

J. Potential Disturbance of Cultural Resources

1. MEIR Conclusion: Cumulative impact is not considerable (DMEIR, p. VI-3).

2. MEIR Rationale: Development in the City's General Plan area has the potential to affect historic buildings and cultural resources. However, the objectives and polices proposed in the *2025 Fresno General Plan* work to strengthen historic protection and conservation (DMEIR, p. VI-3).

3. Project Relationship: The cultural resources survey conducted for this EIR did not identify any historic or archaeological resources within the project site.

K. Generation of Noise

1. MEIR Conclusion: Significant and unavoidable cumulative impacts (DMEIR, p. VI-3).

2. MEIR Rationale: Noise impacts from increased traffic levels will be increased within the boundaries of the *2025 Fresno General Plan* area. Noise impacts from the Fresno Yosemite International Airport, Chandler Airport, and Sierra Sky Park will also increase, given increased use of those airports. Finally, increased use of railroads for transport of freight and passengers will also contribute to increased noise levels in the community (DMEIR, p. VI-3).

3. Project Relationship: The MEIR conclusion would not change because of the project. The project would contribute cumulatively to increased traffic and ambient noise levels, but not significantly, and not to an extent that would substantially exceed the

traffic and ambient noise levels that could result from residential development on the site.

L. Geology and Soils Impacts

1. MEIR Conclusion: Cumulative impact is not considerable (DMEIR, p. VI-3).

2. MEIR Rationale: The Fresno metropolitan area is not prone to earthquakes or other geological hazards. In addition, the City's standard practice and procedures and the objectives and policies in the *2025 Fresno General Plan* reduce effects related to geology (DMEIR, p. VI-3).

3. Project Relationship: The geohazards study conducted for this EIR did not identify any site specific or other significant geologic- or soils-related impacts associated with the project.

M. Hazards and Potential Generation of Hazardous Materials

1. MEIR Conclusion: Cumulative impact is not considerable (DMEIR, p. VI-3).

2. MEIR Rationale: All generation, transport, and treatment of hazardous materials shall be in full compliance with federal, State, and local requirements (DMEIR, p. VI-3).

3. Project Relationship: The Preliminary Environmental Assessment and other research conducted for this EIR did not identify any significant hazards-related impacts that would extend beyond the project site and that could not be mitigated to a level of insignificance.

N. Increased Demand for Energy

1. MEIR Conclusion: Cumulative impact is not considerable (DMEIR, p. VI-3).

2. MEIR Rationale: Effects related to energy will be less than significant provided that energy supplies and necessary facilities are provided in a timely way to serve development (DMEIR, p. VI-3).

3. Project Relationship: The MEIR conclusion would not change because of the project. An increased demand for energy would occur if the project site was converted to residential use, as contemplated under the *2025 Fresno General Plan,* or developed with the project, as proposed by the District.

O. Potential Loss of Mineral Resources

1. MEIR Conclusion: Cumulative impact is not considerable (DMEIR, p. VI-4).

2. MEIR Rationale: Based on the Department of Conservation's reports, total aggregate resources in the entire Fresno production-consumption region are estimated to be 2.2 billion tons. Not all of these resources are recoverable, however, because some of the known reserves lie within designated floodways and 100-year floodplains of the San Joaquin and Kings River.

However, the Department's 1999 report noted that no aggregate mineral reserves underlying designated resource zones in the Fresno production-consumption region had been lost to urbanization or other irreversible land uses since the previous report and designation in 1988 (DMEIR, p. VI-4).

3. Project Relationship: No mineral resources exist within the project site.

P. School Facilities

1. MEIR Conclusion: Cumulative impact is not considerable (DMEIR, p. VI-4).

2. MEIR Rationale: Impacts to school facilities will be considered significant only if a project or action conflicts with either Section 17620 of the State Education Code or Chapter 4.7 of Division 1 of Title 7 of the State Government Code (DMEIR, p. VI-4).

3. Project Relationship: The project will add to the educational facilities available to serve the cumulative demand for such facilities within the territory encompassed by the *2025 Fresno General Plan*.

Q. Potential Aesthetic Impacts

1. MEIR Conclusion: Cumulative impact is not considerable (DMEIR, p. VI-4).

2. MEIR Rationale: The cumulative impact Study Area for Potential Aesthetic Impacts is the same as the Study Area for direct impacts. It is the City's standard practice to evaluate projects, as required by CEQA, for their environmental effects, including light and glare. In addition, the *2025 Fresno General Plan* included policies related to designating certain streets as scenic corridors and boulevards (DMEIR, p. VI-4).

3. Project Relationship: The project would not change the conclusion in the MEIR. The existing agricultural and rural residential visual environment will be altered if the project site was converted to residential use, as contemplated under the *2025 Fresno General Plan*, or developed with the project, as proposed by the District.

Sources

Fresno, City of (2002, May). *Draft Master Environmental Impact Report No. 10130, 2025 Fresno General Plan.*

Fresno, City of (2002, October 22). *Responses to Written Comments for Draft Master Environmental Impact Report No. 10130 and 2025 Fresno General Plan.*

Fresno, City of (2002, February 1) *City of Fresno 2025 General Plan*.

Fresno, City of (2006, March 10). *Municipal Code and Charter of Fresno, California – Chapter 12, City Planning*.

Chapter
23

Significant Environmental Effects That Cannot Be Avoided and Significant Irreversible Environmental Changes

Significant Environmental Effects That Cannot Be Avoided

State CEQA Guidelines Section 15126(b) requires that an EIR discuss "significant environmental effects which cannot be avoided if the proposed project is implemented." For the proposed project, these effects are as follows:

- The project will conflict with existing surrounding agricultural and rural land uses and could conflict with future nearby residential uses. This impact is discussed in Chapter 3, Land Use and Public Land Use Policy; Chapter 5, Agricultural Resources; Chapter 22, Cumulative Impacts; and Chapter 24, Alternatives to the Project.

- The project will convert approximately 11 acres of Prime Farmland and 9 acres Farmland of Statewide Importance to non-agricultural use. This impact is discussed in Chapter 5, Agricultural Resources; Chapter 22, Cumulative Impacts; and Chapter 24, Alternatives to the Project.

- The project will conflict with existing agricultural operations, agricultural zoning, and Williamson Act Contracts in its vicinity. This impact is discussed in Chapter 5, Agricultural Resources; Chapter 22, Cumulative Impacts; and Chapter 24, Alternatives to the Project.

- Long-term emissions of ozone precursor pollutants will result from project operations. This impact is discussed in Chapter 10, Air Quality; and Chapter 24, Alternatives to the Project.

- The project will contribute cumulatively to regional air quality impacts and greenhouse gas emissions. This impact is discussed in Chapter 10, Air Quality; and Chapter 24, Alternatives to the Project.

- Noise from the football stadium would subject nearby residences to high noise levels on a limited basis primarily during late summer and fall evenings. This impact is discussed in Chapter 11, Noise; and Chapter 24, Alternatives to the Project.

Significant Irreversible Environmental Changes

State CEQA Guidelines Section 15126(c) requires that EIRs discuss "significant irreversible environmental changes which would be involved if the proposed project should it be implemented." This requirement is further explained in Section 15126.2(c):

> Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Nonrenewable resources that will be irreversibly used during the initial and continued phases of the project are as follows:

- Building materials (e.g. sand, gravel, cement, bituminous materials, and metals) and energy resources (e.g. gasoline and diesel fuel) would be used to construct the project. This impact would occur under any circumstances where new school facilities are built to serve the District's students.

- Approximately 11 acres of Prime Farmland and 9 acres Farmland of Statewide Importance will be committed when the project is constructed. This impact is discussed in Chapter 5, Agricultural Resources; Chapter 22, Cumulative Impacts; and Chapter 24, Alternatives to the Project.

- Energy resources would be consumed to operate the project (e.g. natural gas) and for transportation to and from the project (e.g. gasoline, diesel fuel, and oil). This impact is discussed in Chapter 19, Energy Resources.

Accidents could occur during project construction activities that could damage environmental resources. These include harm to biological resources, erosion and siltation, and contamination of surface water and groundwater. The potential impacts associated with these accidents would be less than significant because of mitigation measures recommended in this EIR for biological resources (see Chapter 6, Biological Resources) and existing rules and regulations designed to prevent erosion, siltation, and groundwater and surface water pollution during construction activities (see Chapter 14, Drainage and Flooding).

This EIR has not identified any accidents that could occur during project operations that would result in significant damage to environmental resources.

Chapter
24

Alternatives to the Project

Introduction

Section 15126.6(a) of the State CEQA Guidelines states the following regarding consideration and discussion of project alternatives:

> An EIR shall describe a range of reasonable alternatives to the project or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose it's reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.

Summary of Alternatives Addressed

In accordance with the requirements of the State CEQA Guidelines, this EIR addresses the following alternatives:

- **No Project:** Under State CEQA Guidelines Section 15126.6(c), the No Project alternative must discuss the existing conditions at the time the Notice of Preparation for the EIR was published as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. To comply with this requirement, two No Project alternatives are evaluated in this chapter. The first assumes the project site would remain in agricultural and rural residential use, as this was the site condition at the time the Notice of Preparation was published (and is the current site condition). The second No Project alternative assumes the project site would be developed as planned by the *2025 Fresno General Plan*. Under the general plan, it is conceptually planned for medium density residential development. (See Chapter 3 for information on public land use policy for the project site.)

- **Alternative Site Locations:** Under State CEQA Guidelines Section 15126.6(f)(2)(A), the key question in addressing alternative locations for the project is whether any of the significant effects of the project would be avoided or substantially lessened by

developing the project at another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in an EIR.

The evaluation of alternative locations in this EIR is based on the *Fourth Educational Center Site Selection Study (revised)* (December 2006), which is incorporated in this EIR as Appendix I-1. This report identified and evaluated four possible sites for the project, including the proposed study area, all of which are addressed in this chapter.

- **Alternative Project Designs:** This EIR identified mitigation measures that would avoid or substantially lessen significant effects of the project but did not identify any project design alternatives that would avoid or substantially lessen significant effects that could not be mitigated to a less than significant level. Therefore, no project design alternatives are addressed in this chapter.

Summary of Project Objectives and Significant Effects

Under the State CEQA Guidelines, an EIR must address reasonable alternatives to a project or to the location of the project that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project. For purposes of review and evaluation in this chapter, the District's project objectives, as described in Chapter 2, are as follows:

- Provide school facilities for anticipated high school, intermediate school and elementary school students within the southeast area of the District;
- Provide the facilities in the form of an educational center (high school, intermediate school, elementary school and related recreational/athletic facilities on a common site);
- Provide a stadium facility on site to accommodate and enhance the District's competitive sports education programs at a level commensurate with other schools in the Tri-River Athletic Conference.

The significant effects of the project as identified in this EIR are as follows:

- The project is inconsistent with the Fresno County General Plan agricultural land use designation for the project site. (see Chapter 3)
- The project will conflict with existing surrounding agricultural land uses and could conflict with future nearby rural residential uses. (see Chapters 3 and 5)
- The project will convert approximately 11 acres of Prime Farmland and 9 acres of Farmland of Statewide Importance to non-agricultural use. (see Chapter 5)
- The project will conflict with existing agricultural operations, agricultural zoning, and Williamson Act Contracts in its vicinity. (see Chapter 5)
- Project construction may result in direct mortality of special status animals, raptors, and various bat species. (see Chapter 6)

- Project construction activities could result in the loss of subsurface cultural or paleontological resources from the project site. (see Chapter 7)
- The project will alter the existing rural and agricultural visual environment. (see Chapter 8)
- The project will create a potential for litter and graffiti. (see Chapter 8)
- The project will increase light and glare in the project vicinity. (see Chapter 8)
- The project will cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system. (see Chapter 9)
- Short-term emissions of airborne particulate matter will result from project construction activity. (see Chapter 10)
- Short-term emissions of ozone precursor pollutants and diesel-exhaust particulates will result from project construction activity. (see Chapter 10)
- Long-term emissions of ozone precursor pollutants will result from project operations. (see Chapter 10)
- The project could result in local mobile-source CO concentrations. (see Chapter 10)
- The project will contribute cumulatively to regional and local air quality impacts and greenhouse gas emissions. (see Chapter 10)
- Short-term noise will occur during project construction phases. (see Chapter 11)
- The project will expose noise sensitive uses to on site stationary source noise. (see Chapter 11)
- Noise sensitive uses/activities on the project site may be subject to high noise levels from adjacent streets. (see Chapter 11)
- The project will result in cumulative increases in traffic noise. (see Chapter 11)
- The project will increase local demand for water. (see Chapter 12)
- Development of the project may damage existing Fresno Irrigation District facilities within the area of the project. (see Chapter 12)
- Improper destruction of existing wells on the site can allow pollutants to enter the groundwater supply. (see Chapter 12)
- The project will result in the need for wastewater collection facilities. (see Chapter 13)
- Wastewater generated by the project will require wastewater treatment and disposal service. (see Chapter 13)

- The project will result in increased stormwater runoff. (see Chapter 14)
- Stormwater runoff from project construction activities may pollute natural watercourses and aquifers. (see Chapter 14)
- Development within a flood prone area may result in a portion of the site being subject to periodic flooding. (see Chapter 14)
- The project will consume electrical energy and natural gas. (see Chapter 19)
- Pesticide application or product disposal associated with agricultural use could have materially impacted the project site. (see Chapter 20)

No Project/Agricultural and Rural Residential Use Alternative

Description of Alternative

Under the No Project/Agricultural and Rural Residential Use alternative, the project would not be developed and the project site would remain in agricultural and rural residential use. This No Project alternative reflects the existing use of the project site and the use of the project site when the Notice of Preparation for this EIR was published.

Attainment of Project Objectives

The No Project/Agricultural and Rural Residential Use alternative would not attain any of the project objectives because the project would not be developed.

Avoid or Substantially Lessen Significant Environmental Effects

Table 24-1[1] addresses the question of whether the No Project/Agricultural and Rural Residential Use alternative would avoid or substantially lessen the significant environmental effects of the proposed project.

No Project/Medium Density Residential Use Alternative

Description of Alternative

The No Project/Medium Density Residential Use alternative assumes that the project site would be developed with medium density residential uses, which is the conceptual land use designation for the project site under the *2025 Fresno General Plan*. As described in Chapter 3, the general plan does not provide specific policy guidance for development within the residential portions of the Southeast Growth Area. Such guidance will be provided in a specific plan the City must adopt prior to pursuing any annexations within the Southeast Growth Area or allowing any development within the area. The evaluation in this EIR will assume that the project site is developed with the land uses and property development standards of the City's "R-1," Single Family Residential District. The "R-1" District is the

[1] Because of the size of the tables and to enhance readability, all tables are located at the end of this chapter.

zoning district the City most commonly applies to land designated for medium density residential uses.

Attainment of Project Objectives

The No Project/Medium Density Residential Use alternative would not attain any of the project objectives because the project would not be developed.

Avoid or Substantially Lessen Significant Environmental Effects

Table 24-2 addresses the question of whether the No Project/Medium Density Residential Use alternative would avoid or substantially lessen the significant environmental effects of the proposed project.

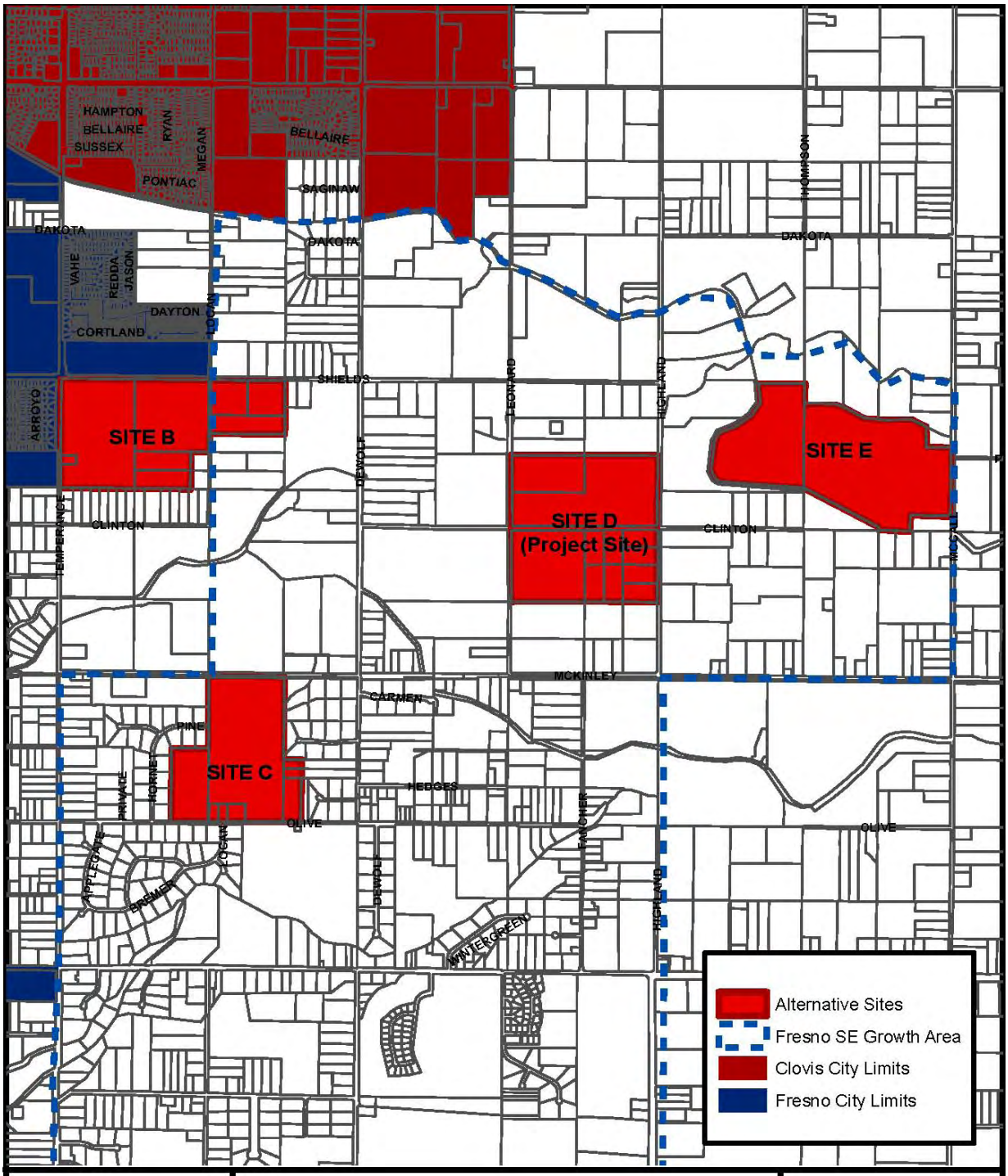
Alternative Site Locations

Description of Alternative Sites

The *Fourth Educational Center Site Selection Study (revised)* addressed four sites for the project, including the project site. The revised study updated a previous report prepared in February 2005 and was necessary to address a change in the configuration of Site D and changes in conditions for other sites that have occurred since the previous report was prepared. Site B encompasses 140.96 acres and consists of two adjacent areas with the main portion located on the south side of Shields Avenue between Temperance and Locan Avenues. The additional adjacent area is located at the southeast corner of Shields and Locan Avenues. Site C encompasses 105 acres located on the north side of Olive Avenue between Temperance and DeWolf Avenues. Site D, the proposed site, encompasses 160.46 acres and is located north and south of the Clinton Avenue alignment, between Leonard and Highland Avenues. Site E consists of 152 acres located on the west side of McCall Avenue between the Clinton and Shields Avenue alignments.

The sites were identified and evaluated using site selection criteria from the California Department of Education, the California Public Resources Code, the California Education Code, the California Code of Regulations Title 5, and other sources. The criteria addressed the following issues: safety; environment; size and shape; accessibility; land use and ownership; public services and utilities; and site preparation. Site D was rated the highest (86 points), followed by Site B (80 points), Site E (76 points), and Site C (70 points). Site D was superior primarily because it is centrally located in the portion of the City of Fresno's Southeast Growth Area designated for urban development, has good street access, and does not have any safety or environment/land use category drawbacks. Site C was the lowest rated site primarily because it was the smallest of the sites (105 acres) and has eight parcels and five owners.

(See Appendix I-1 for additional background information on each site.)



Sources: Blair, Church & Flynn Consulting Engr. and Paoli & Odell, Inc.

N

Scale: 1"= 1/2 mile

Alternative Sites

CUSD Fourth Educational Center

Figure 24-1

Avoid or Substantially Lessen Significant Environmental Effects

Tables 24-4, 24-5, and 24-6 evaluate whether development of the project on Site B, C, or E would avoid or substantially lessen the significant environmental effects of the proposed project.

Conclusions and Identification of Environmentally Superior Alternative

Table 24-7 compares the extent to which each alternative would feasibly attain most of the basic project objectives and would avoid or substantially lessen any of the significant effects of the project.

As demonstrated by the table:

- The No Project/Agricultural and Rural Residential Use Alternative would achieve none of the project's objectives because the project would not be developed. It would avoid or substantially lessen all but two of the project's significant effects and increase one (pesticide application).

- The No Project/Medium Density Residential Use Alternative would achieve none of the project's objectives because the project would not be developed. It would avoid or substantially project impacts related to land use conflicts and would not result in noise and light impacts due to a stadium. This alternative would substantially increase water consumption and the generation of wastewater.

- Development of the project on Alternative Site B would not achieve all of the project's objectives. Development on Site B would require the elementary school to be developed on a parcel separated from the main site by a major street. This would not meet the project objective of having an educational center on one site. In addition, this alternative would result in an increase in prime agricultural land conversion because the project contains substantially more prime agricultural land than the project site.

- Development of the project on Alternative Site C would not achieve all of the project objectives. Site C is too small to accommodate a stadium or elementary school. Site C is in the middle of a permanent rural residential area and the project would not be compatible in such an area. The alternative site would result in the conversion of more prime agricultural land but would have less of an impact with respect to agricultural conflicts on adjacent land.

- Development of the project on Alternative Site E would achieve all of the project's objectives. However, this alternative would result in an increase of the project's effects related to land use conflicts, prime agricultural land conversion, and agricultural conflicts. This is because the project would be within an area that is adjacent to land planned to remain in agricultural use and the site contains substantially more prime agricultural land than the project site. Site E also has very limited street access, which would not be able to handle the traffic and access needs of

the project. Trip length and air quality emissions would increase due to the location of the site on the eastern edge of the planned urban area.

State CEQA Guidelines Section 15126(c)(2) requires that "if the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." As demonstrated by Table 24-7, the No Project/Agricultural Use alternative would avoid or substantially lessen all but one of the project's significant environmental effects. It is, therefore, the environmentally superior alternative, although it would achieve none of the project objectives.

Based on the alternatives analysis, none of the alternatives would be environmentally superior to the project. Therefore, notwithstanding the "no project" alternatives, the project would be the environmentally superior alternative.

Sources

Fresno, City of (2002, May). *Draft Master Environmental Impact Report No. 10130, 2025 Fresno General Plan.*

Fresno, City of (2002, February 1) *City of Fresno 2025 General Plan*.

Fresno, City of (2006, March 10). *Municipal Code and Charter of Fresno, California – Chapter 12, City Planning*.

Fresno, County of (2000, January). *Fresno County General Plan Public Review Draft Policy Document.*

Fresno, County of (amended 2004, March 2). *Zoning Division of the County of Fresno*.

Paoli & Odell, Inc. and Blair, Church & Flynn Consulting Engineers (2006, December). *Fourth Educational Center Site Selection Study (Revised)*

TABLE 24-1

EVALUATION OF
NO PROJECT/AGRICULTURAL AND RURAL RESIDENTIAL USE ALTERNATIVE

Proposed Project Significant Effect (SU) – Significant project impact is unavoidable (SM) – Significant project impact can be avoided or substantially lessened by mitigation measures described in this EIR.	**Avoid or Substantially Lessen Significant Effect?**	**Explanation**
General plan conflicts (SM) (see Chapter 3)	Avoid	The continued use of the site for agriculture would not conflict with adopted land use plans.
Land use conflicts (SU) (see Chapters 3 and 5)	Avoid	The land use conflicts associated with the project would be avoided if the site were to remain in agricultural use.
Prime agricultural land conversion (SU) (see Chapter 5)	Avoid	No prime agricultural land would be converted to urban use because the site would remain in agricultural use.
Agricultural conflicts (SU) (see Chapter 5)	Avoid	The potential for conflicts with agricultural operations would be eliminated if the site remained in agricultural use.
Mortality of special status animals, raptors, and various bat species (SM) (see Chapter 6)	Substantially lessen	The potential for mortality to special status animals, raptors, and various bat species would not be completely eliminated if the site remained in agricultural use. Potential impacts could result from continued agricultural operations (i.e. disking, removal and replanting of trees, etc.). Nevertheless, maintaining the existing agricultural operations substantially lessens the potential for significant impacts.
Loss of subsurface cultural and paleontological resources (SM) (see Chapter 7)	Avoid	The potential for loss of subsurface cultural and paleontological resources would be eliminated if the site remained in agricultural use.
Alteration of rural and agricultural visual environment (SU) (see Chapter 8)	Avoid	The existing visual environment would be unaltered if the site remained in agricultural use.
Litter and graffiti (SM) (see Chapter 8)	Avoid	The potential for litter and graffiti would be eliminated if the site remained in agricultural use.
Light and glare (SM) (see Chapter 8)	Avoid	The potential for light and glare would be eliminated if the site remained in agricultural use.
Increased traffic (SM) (see Chapter 9)	Avoid	No increase in traffic would occur if the site remained in agricultural use.
Airborne particulate matter from project construction activity. (SM) (see Chapter 10)	Avoid	No airborne particulate matter would be generated because of project construction activity if the site remained in agricultural use. (Particulate matter, however, would continue to be generated on a regular basis by agricultural activities versus a short-term basis for the project.)

TABLE 24-1

EVALUATION OF NO PROJECT/AGRICULTURAL AND RURAL RESIDENTIAL USE ALTERNATIVE

Proposed Project Significant Effect (SU) – Significant project impact is unavoidable (SM) – Significant project impact can be avoided or substantially lessened by mitigation measures described in this EIR.	**Avoid or Substantially Lessen Significant Effect?**	**Explanation**
Ozone precursor pollutants and diesel-exhaust particulates from project construction activity. (SM) (see Chapter 10)	Avoid	No ozone precursor pollutants or diesel exhaust particulates would be generated because of project construction activity if the site remained in agricultural use. (These pollutants, however, would continue to be generated by agricultural activities.)
Long-term emissions of ozone precursor pollutants from project operations (SU) (see Chapter 10)	Avoid	No long-term emissions of ozone precursor pollutants would be generated because of the project if the site remained in agricultural use. (Too a lesser degree, however, ozone precursor pollutants would continue to be generated by agricultural activities.)
Local mobile-source CO concentrations (SM) (see Chapter 10)	Avoid	No local mobile-source CO concentrations would be generated because of the project if the site remained in agricultural use. (These pollutants, however, would continue to be generated by vehicular traffic in the area.)
Cumulative contribution to regional air quality impacts (SU) (see Chapter 10)	Avoid	No cumulative contributions to regional air quality impacts would occur because of the project if the site remained in agricultural use. (Particulate matter, however, would continue to be generated by agricultural activities.)
Short-term construction noise (SM) (see Chapter 11)	Avoid	No construction activity and resultant noise would occur on the site if it remained in agricultural use.
Long-term exposure to stationary source noise (SM) (see Chapter 11)	Avoid	No long-term exposure to stationary source noise would occur on the site if it remained in agricultural use.
Compatibility of proposed land uses with predicted onsite noise levels (SM) (see Chapter 11)	Avoid	No land use compatibility issues related to noise would occur if the site remained in agricultural use.
Local demand for water (SM) (see Chapter 12)	Substantially lessen	The total annual water consumption of the project site under its current agricultural and rural residential use is estimated at 389 acre-feet per year. The total domestic and irrigation demand for the project would be 540 acre-feet per year.
Damage to existing Fresno Irrigation District facilities within the project site (SM) (see Chapter 12)	Avoid	The existing Fresno Irrigation District facilities located within the project site would not be destroyed if the project site remained in agricultural use.
Improper destruction of existing	Avoid	The existing on-site wells would not be

TABLE 24-1

EVALUATION OF
NO PROJECT/AGRICULTURAL AND RURAL RESIDENTIAL USE ALTERNATIVE

Proposed Project Significant Effect (SU) – Significant project impact is unavoidable (SM) – Significant project impact can be avoided or substantially lessened by mitigation measures described in this EIR.	**Avoid or Substantially Lessen Significant Effect?**	**Explanation**
wells (SM) (see Chapter 12)		destroyed if the project site remained in agricultural use.
Demand for wastewater collection facilities (SM) (see Chapter 13)	Avoid	Agricultural operations do not require wastewater collection facilities.
Need for wastewater treatment and disposal service (SM) (see Chapter 13)	Avoid	Agricultural operations do not require wastewater treatment and disposal service.
Increased stormwater runoff (SM) (see Chapter 14)	Avoid	No impermeable surfaces would be created if the site remains in agricultural uses.
Construction-related stormwater pollution (SM) (see Chapter 14)	Avoid	No construction would occur if the site remained in agricultural uses.
Development in a flood prone area (small portion of site) (SM) (see Chapter 14)	Avoid	No flooding would occur if the site remained in agricultural use.
Consumption of electrical energy and natural gas (SM) (see Chapter 19)	Avoid	The consumption of energy would occur if the site remained in agricultural use. However, the amount of energy consumed would be significantly less than would be expected with the project.
Pesticide application and product disposal (SM) (see Chapter 20)	Increase	Any impacts from pesticide application or product disposal from agricultural use of the site would likely remain and could potentially worsen over time if the agricultural operations continued on the site.

TABLE 24-2

EVALUATION OF NO PROJECT/MEDIUM DENSITY RESIDENTIAL USE ALTERNATIVE

Proposed Project Significant Effect (SU) – Significant project impact is unavoidable (SM) – Significant project impact can be avoided or substantially lessened by mitigation measures described in this EIR.	**Avoid or Substantially Lessen Significant Effect?**	**Explanation**
General plan conflicts (SM) (see Chapter 3)	Substantially lessen	Residential development would be consistent with the City of Fresno's conceptual land use planning for the project site but inconsistent with the agricultural designation of the County General Plan.
Land use conflicts (SU) (see Chapters 3 and 5)	Substantially lessen	Residential development in the project site would not conflict the City of Fresno's conceptual land uses planned for the surrounding area. Land use conflicts with existing agricultural and rural uses would result.
Prime agricultural land conversion (SU) (see Chapter 5)	No substantial difference	The prime agricultural land would be lost because the project site would be converted to residential use.
Agricultural conflicts (SU) (see Chapter 5)	No substantial difference	The potential for conflicts with agricultural operations would be substantially the same as with the proposed project because schools and residential uses are both considered sensitive land uses.
Mortality of special status animals, raptors, and various bat species (SM) (see Chapter 6)	No substantial difference	The same mitigation measures that would apply to the proposed project should apply to residential uses developed within the project site.
Loss of subsurface cultural and paleontological resources (SM) (see Chapter 7)	No substantial difference	The same mitigation measures that would apply to the proposed project should apply to residential uses developed within the project site.
Alteration of rural and agricultural visual environment (SU) (see Chapter 8)	No substantial difference	The existing rural and agricultural visual environment would be impacted by residential uses.
Litter and graffiti (SM) (see Chapter 8)	Substantially lessen	The potential for litter and graffiti would remain with residential uses, however, not to the degree that would be expected with the proposed project.
Light and glare (SM) (see Chapter 8)	Substantially lessen	The potential for the generation of light and glare would be substantial less with residential development of the site
Increased traffic (SM) (see Chapter 9)	Lesser impact but still significant	Residential development of the site would result in a similar number of average daily trips as the project, but the project would result in a greater number of peak hour trips.
Airborne particulate matter from	No substantial	Construction of residential uses on the site

TABLE 24-2

EVALUATION OF
NO PROJECT/MEDIUM DENSITY RESIDENTIAL USE ALTERNATIVE

Proposed Project Significant Effect (SU) – Significant project impact is unavoidable (SM) – Significant project impact can be avoided or substantially lessened by mitigation measures described in this EIR.	**Avoid or Substantially Lessen Significant Effect?**	**Explanation**
project construction activity. (SM) (see Chapter 10)	difference	would result in airborne particulate matter similar to that generated by project construction.
Ozone precursor pollutants and diesel-exhaust particulates from project construction activity. (SM) (see Chapter 10)	No substantial difference	Construction of residential uses on the site would result in ozone precursor pollutants and diesel-exhaust particulates similar to the project.
Long-term emissions of ozone precursor pollutants from project operations (SU) (see Chapter 10)	No substantial difference	Residential development on the site would result in long-term emissions of ozone precursor pollutants similar to the project.
Local mobile-source CO concentrations (SM) (see Chapter 10)	Substantially lessen	Residential development on the site would result in less local mobile-source CO concentrations from vehicular traffic because residential development would generate less peak hour traffic than the project.
Cumulative contribution to regional air quality impacts (SU) (see Chapter 10)	No substantial difference	Residential development on the site would cumulatively contribute to regional air quality problems in a similar manner as the project.
Short-term construction noise (SM) (see Chapter 11)	No substantial difference	Construction of residential uses would have short-term noise impacts similar to those resulting from the proposed project.
Long-term exposure to stationary source noise (SU) (see Chapter 11)	Avoid	Residential uses are not normally associated with stationary source noises such as mechanical building equipment, exterior recreational use facilities (including a stadium), parking lot noise, or facility maintenance activities.
Compatibility of proposed land uses with predicted onsite noise levels (SM) (see Chapter 11)	No substantial difference	Residential land uses would be subject to the same onsite noise levels predicted for the proposed project.
Local demand for water (SM) (see Chapter 12)	Increase	The total annual water consumption of the project site under medium-density residential use is estimated at 779.7 acre-feet per year. The total domestic and irrigation demand for the project would be 540 acre-feet per year.
Damage to existing Fresno Irrigation District facilities within the project site (SM) (see Chapter 12)	No substantial difference	Residential uses on the site would also require the replacement of existing Fresno Irrigation District facilities.
Improper destruction of existing wells (SM) (see Chapter 12)	No substantial difference	The existing on-site wells would most likely be destroyed if the site were developed with residential uses.

TABLE 24-2

EVALUATION OF
NO PROJECT/MEDIUM DENSITY RESIDENTIAL USE ALTERNATIVE

Proposed Project Significant Effect (SU) – Significant project impact is unavoidable (SM) – Significant project impact can be avoided or substantially lessened by mitigation measures described in this EIR.	**Avoid or Substantially Lessen Significant Effect?**	**Explanation**
Demand for wastewater collection facilities (SM) (see Chapter 13)	Increase	Residential development would generate substantially greater volumes of wastewater than the project.
Need for wastewater treatment and disposal service (SM) (see Chapter 13)	Increase	Residential uses on the site will require greater wastewater treatment and disposal capacity.
Increased stormwater runoff (SM) (see Chapter 14)	No substantial difference	The volume of stormwater runoff from residential development would likely be substantially the same as from the proposed project.
Construction-related stormwater pollution (SM) (see Chapter 14)	No substantial difference	Construction activities associated with residential development should have no greater (or less) potential to cause stormwater pollution that with the proposed project. Both the residential and project construction would be subject to the same existing regulations designed to prevent such pollution.
Development in a flood prone area (small portion of site) (SM) (see Chapter 14)	No substantial difference	The potential for flooding would remain if the site were developed with residential uses. The residential project would be subject to the same mitigation measures as the proposed project.
Consumption of electrical energy and natural gas (SM) (see Chapter 19)	No substantial difference	The consumption of energy would occur if the site were developed with residential uses. It is estimated that the amount of energy consumed would be similar to that expected with the project.
Pesticide application and product disposal (SM) (see Chapter 20)	Avoid	Residential development would not be subject to the testing and remediation of material impacts resulting from pesticide application and products disposal that schools are subjected to.

TABLE 24-3

LOCATIONS AND AREAS OF ALTERNATIVE SITES

Site	Location	Acres
B	Site B consists of two adjacent areas with the main portion located on the south side of Shields Avenue between Temperance and Locan Avenues. The additional adjacent portion is located at the southeast corner of Shields and Locan Avenues.	141
C	North side of Olive Avenue between Temperance and DeWolf Avenues.	105
E	West side of McCall Avenue between the Clinton and Shields Avenue alignments.	152

Source: Fourth Educational Center Site Selection Study (revised). Paoli & Odell, Inc. and Blair, Church & Flynn Consulting Engineers (December 2006)

TABLE 24-4

EVALUATION OF ALTERNATIVE SITE B

Proposed Project Significant Effect (SU) – Significant project impact is unavoidable (SM) – Significant project impact can be avoided or substantially lessened by mitigation measures described in this EIR.	**Avoid or Substantially Lessen Significant Effect?**	**Explanation**
General plan conflicts (SM) (see Chapter 3)	No substantial difference	The alternative site is planned for medium low density residential, neighborhood park and an elementary school. The project would conflict with the residential designation but should not conflict to a substantial degree with the park and elementary school designation.
Land use conflicts (SU) (see Chapters 3 and 5)	No substantial difference	The project would conflict with the existing agricultural operations near the alternative site for the same reasons it would conflict with those near the proposed project site. In this case, however, based on the City's general plan, the nearby agricultural lands are planned for conversion to urban uses. Development of the project on the alternative site should be compatible with the residential uses planned for the area.
Prime agricultural land conversion (SU) (see Chapter 5)	Increase	About 90% of the site is Prime Farmland and 10% Farmland of Statewide Importance. The site is not under Williamson Act.
Agricultural conflicts (SU) (see Chapter 5)	No substantial difference	See the above explanation for land use conflicts.
Mortality of special status animals, raptors, and various bat species (SM) (see Chapter 6)	Unknown	Site specific surveys would have to be conducted to determine if conditions suitable for the special status animals, raptors, and various bat species exist on the alternate site.
Loss of subsurface cultural and	Unknown	Site specific surveys would have to be

TABLE 24-4 EVALUATION OF ALTERNATIVE SITE B		
Proposed Project Significant Effect (SU) – Significant project impact is unavoidable (SM) – Significant project impact can be avoided or substantially lessened by mitigation measures described in this EIR.	**Avoid or Substantially Lessen Significant Effect?**	**Explanation**
paleontological resources (SM) (see Chapter 7)		conducted to determine if the potential for loss of subsurface cultural and paleontological resources could occur on the alternative site.
Alteration of rural and agricultural visual environment (SU) (see Chapter 8)	No substantial difference	The existing visual environment would be altered if the proposed project were developed on the alternative site.
Litter and graffiti (SM) (see Chapter 8)	No substantial difference	The potential for litter and graffiti would remain if the proposed project were developed on the alternative site.
Light and glare (SM) (see Chapter 8)	No substantial difference	The same mitigation measures would apply to the proposed project regardless of the site location.
Increased traffic (SM) (see Chapter 9)	No substantial difference	The project would generate the same amount of traffic regardless of where it is located and would have direct access to planned major streets on both the proposed site and the alternative site.
Airborne particulate matter from project construction activity. (SM) (see Chapter 10)	No substantial difference	Construction activities on the alternative site and the proposed site should not differ significantly. Therefore, the amount of airborne particulate matter generated by construction activity should not be substantially different between the two sites.
Ozone precursor pollutants and diesel-exhaust particulates from project construction activity. (SM) (see Chapter 10)	No substantial difference	Construction activities on the alternative site and the proposed site should not differ significantly. Therefore, the amount of ozone precursor pollutants and diesel-exhaust particulates generated by construction activity should not be substantially different between the two sites.
Long-term emissions of ozone precursor pollutants from project operations (SU) (see Chapter 10)	No substantial difference	Long-term emissions of ozone precursor pollutants from project operations should not differ substantially between the proposed site and the alterative site because the project's physical and operational characteristics would remain essentially the same regardless of the site.
Local mobile-source CO concentrations (SM) (see Chapter 10)	No substantial difference	Local mobile-source CO concentrations from due to the project should not differ substantially between the proposed site and the alternative site because the amount of the traffic generated by the project would remain

TABLE 24-4 EVALUATION OF ALTERNATIVE SITE B		
Proposed Project Significant Effect (SU) – Significant project impact is unavoidable (SM) – Significant project impact can be avoided or substantially lessened by mitigation measures described in this EIR.	**Avoid or Substantially Lessen Significant Effect?**	**Explanation**
		essentially the same regardless of the site.
Cumulative contribution to regional air quality impacts (SU) (see Chapter 10)	No substantial difference	The project would contribute cumulatively to regional air quality impacts regardless of its location. (See also the preceding explanation to "Long-term emissions of ozone.")
Short-term construction noise (SM) (see Chapter 11)	No substantial difference	Short-term construction noise would result from the project regardless of its location.
Long-term exposure to stationary source noise (SM) (see Chapter 11)	No substantial difference	Long-term exposure to stationary source noise would result from the project regardless of its location.
Compatibility of proposed land uses with predicted onsite noise levels (SM) (see Chapter 11)	No substantial difference	Compatibility issues related to the proposed land uses with predicted onsite noise levels would occur regardless of the project location.
Local demand for water (SM) (see Chapter 12)	No substantial difference	The project would require the same amount of water regardless of its location.
Damage to existing Fresno Irrigation District facilities within the project site (SM) (see Chapter 12)	Unknown	It is unknown if Fresno Irrigation District (FID) facilities are located within the alternative site. The FID would have to be contacted in order to determine this.
Improper destruction of existing wells (SM) (see Chapter 12)	No substantial difference	Agricultural and domestic wells likely exist on this alternate site given the rural and agricultural uses on the site. The potential for impacts related to improper destruction of the wells would be the same as with the proposed project.
Demand for wastewater collection facilities (SM) (see Chapter 13)	Substantially lessen	The project would generate the same volume of wastewater and would require City of Fresno wastewater collection and treatment facilities regardless of its location. With respect to the extension of wastewater collection facilities, the alternative site will substantially lessen the impact since sewer lines are adjacent to the site.
Need for wastewater treatment and disposal service (SM) (see Chapter 13)	No substantial difference	The project would require wastewater treatment and disposal service regardless of its location.
Increased stormwater runoff (SM) (see Chapter 14)	No substantial difference	The project would generate approximately the same volume of stormwater and would require stormwater collection and disposal facilities regardless of its location.

TABLE 24-4 EVALUATION OF ALTERNATIVE SITE B		
Proposed Project Significant Effect (SU) – Significant project impact is unavoidable (SM) – Significant project impact can be avoided or substantially lessened by mitigation measures described in this EIR.	**Avoid or Substantially Lessen Significant Effect?**	**Explanation**
Construction-related stormwater pollution (SM) (see Chapter 14)	No substantial difference	The same potential for construction-related stormwater pollution would exist regardless of the site location.
Development in a flood prone area (small portion of site) (SM) (see Chapter 14)	Avoid	The alternate site is not located in a 100-year floodplain.
Consumption of electrical energy and natural gas (SM) (see Chapter 19)	No substantial difference	The project would consume the same amount of electrical energy and natural gas regardless of its location.
Pesticide application and product disposal (SM) (see Chapter 20)	Unknown	Site specific surveys would have to be conducted to determine if the application of pesticides and any improper product disposal has materially impacted the alternative site. Based on the historical use of the site for agriculture, the potential for this impact cannot be precluded.

TABLE 24-5 EVALUATION OF ALTERNATIVE SITE C		
Proposed Project Significant Effect (SU) – Significant project impact is unavoidable (SM) – Significant project impact can be avoided or substantially lessened by mitigation measures described in this EIR.	**Avoid or Substantially Lessen Significant Effect?**	**Explanation**
General plan conflicts (SM) (see Chapter 3)	No substantial difference	The alternative site is planned for medium density and rural residential uses. The project would conflict with the residential designations.
Land use conflicts (SU) (see Chapters 3 and 5)	Increase	The alternative site is located in the midst of a large planned rural residential area and the project would be substantially incompatible at this location.
Prime agricultural land conversion (SU) (see Chapter 5)	Increase	About 60% of the site is Prime Farmland and 20% Farmland of Statewide Importance. The site is not under Williamson Act.
Agricultural conflicts (SU) (see Chapter 5)	Substantially lessen	Site C is in the middle of a permanent rural residential area and has less agricultural land around it. Therefore, impacts to surrounding agricultural land would be less than could be expected with the project.
Mortality of special status animals, raptors, and various bat species (SM) (see Chapter 6)	Unknown	Site specific surveys would have to be conducted to determine if conditions suitable for the special status animals, raptors, and various bat species exist on the alternate site.
Loss of subsurface cultural and paleontological resources (SM) (see Chapter 7)	Unknown	Site specific surveys would have to be conducted to determine if the potential for loss of subsurface cultural and paleontological resources could occur on the alternative site.
Alteration of rural and agricultural visual environment (SU) (see Chapter 8)	No substantial difference	The existing visual environment would be altered if the proposed project were developed on the alternative site.
Litter and graffiti (SM) (see Chapter 8)	No substantial difference	The potential for litter and graffiti would remain if the proposed project were developed on the alternative site.
Light and glare (SM) (see Chapter 8)	No substantial difference	The same mitigation measures would apply to the proposed project regardless of the site location.
Increased traffic (SM) (see Chapter 9)	No substantial difference	The project would generate less traffic at this location because the alternative site is not large enough for an elementary school or stadium. However, the project would be located in a planned rural area rather than a designated urban area and would have a substantial impact on the rural streets.
Airborne particulate matter from	No substantial	Construction activities on the alternative site

TABLE 24-5 EVALUATION OF ALTERNATIVE SITE C		
Proposed Project Significant Effect (SU) – Significant project impact is unavoidable (SM) – Significant project impact can be avoided or substantially lessened by mitigation measures described in this EIR.	**Avoid or Substantially Lessen Significant Effect?**	**Explanation**
project construction activity. (SM) (see Chapter 10)	difference	and the proposed site should not differ significantly. Therefore, the amount of airborne particulate matter generated by construction activity should not be substantially different between the two sites.
Ozone precursor pollutants and diesel-exhaust particulates from project construction activity. (SM) (see Chapter 10)	No substantial difference	Construction activities on the alternative site and the proposed site should not differ significantly. Therefore, the amount of ozone precursor pollutants and diesel-exhaust particulates generated by construction activity should not be substantially different between the two sites.
Long-term emissions of ozone precursor pollutants from project operations (SU) (see Chapter 10)	No substantial difference	Long-term emissions of ozone precursor pollutants from project operations should not differ substantially between the proposed site and the alterative site because the project's physical and operational characteristics would remain substantially the same regardless of the site.
Local mobile-source CO concentrations (SM) (see Chapter 10)	Lesser impact but still signficant	The project would generate less traffic at this location because the alternative site is not large enough for an elementary school or stadium. Therefore, local mobile-source CO concentrations from due to the project would be somewhat less but still potentially signficicant
Cumulative contribution to regional air quality impacts (SU) (see Chapter 10)	Lesser impact but still signficant	The project would generate less traffic at this location because the alternative site is not large enough for an elementary school or stadium. However, the project would still make a significant cumulative contribution to regional air quality impacts regardless of its location.
Short-term construction noise (SM) (see Chapter 11)	No substantial difference	Short-term construction noise would result from the project regardless of its location.
Long-term exposure to stationary source noise (SM) (see Chapter 11)	Substantially lessen	The alterntiave site is not large enough for a stadium; therefore potential Long-term exposure to stationary source noise would be lessened.
Compatibility of proposed land uses with predicted onsite noise levels (SM) (see Chapter 11)	No substantial difference	Compatibility issues related to the proposed land uses with predicted onsite noise levels would occur regardless of the project location.

TABLE 24-5 EVALUATION OF ALTERNATIVE SITE C		
Proposed Project Significant Effect (SU) – Significant project impact is unavoidable (SM) – Significant project impact can be avoided or substantially lessened by mitigation measures described in this EIR.	**Avoid or Substantially Lessen Significant Effect?**	**Explanation**
Local demand for water (SM) (see Chapter 12)	Lesser impact but still signficant	The project at the alternative location would require somewhat less water becuase the alternative site is smaller and would not have room for an elementary school or stadium.
Damage to existing Fresno Irrigation District facilities within the project site (SM) (see Chapter 12)	Unknown	It is unknown if Fresno Irrigation District (FID) facilities are located within the alternative site. The FID would have to be contacted in order to determine this.
Improper destruction of existing wells (SM) (see Chapter 12)	No substantial difference	Agricultural and domestic wells likely exist on this alternate site given the rural and agricultural uses on the site. The potential for impacts related to improper destruction of the wells would be the same as with the proposed project.
Demand for wastewater collection facilities (SM) (see Chapter 13)	Lesser impact but still signficant	The project at the alternative location would generate somewhat less wastewater becuase the alternative site is smaller and would not have room for an elementary school or stadium.
Need for wastewater treatment and disposal service (SM) (see Chapter 13)	Lesser impact but still signficant	The project at the alternative location would generate somewhat less demand on wastewater treatment and disposal facilities because the alternative site is smaller and would not have room for an elementary school or stadium
Increased stormwater runoff (SM) (see Chapter 14)	Lesser impact but still signficant	The project at the alternative location would generate somewhat less stormwater runoff because the alternative site is smaller and would not have room for an elementary school or stadium
Construction-related stormwater pollution (SM) (see Chapter 14)	No substantial difference	The same potential for construction-related stormwater pollution would exist regardless of the site location.
Development in a flood prone area (small portion of site) (SM) (see Chapter 14)	No substantial difference	A portion of the alternate site is also located within 100-year floodplain.
Consumption of electrical energy and natural gas (SM) (see Chapter 19)	Lesser impact but still signficant	The project at the alternative location would consume somewhat less electrical energy and natural gas because the alternative site is smaller and would not have room for an elementary school or stadium.

TABLE 24-5 EVALUATION OF ALTERNATIVE SITE C		
Proposed Project Significant Effect (SU) – Significant project impact is unavoidable (SM) – Significant project impact can be avoided or substantially lessened by mitigation measures described in this EIR.	**Avoid or Substantially Lessen Significant Effect?**	**Explanation**
Pesticide application and product disposal (SM) (see Chapter 20)	Unknown	Site specific surveys would have to be conducted to determine if the application of pesticides and any improper product disposal has materially impacted the alternative site. Based on the historical use of the site for agriculture, the potential for this impact cannot be precluded.

TABLE 24-6 EVALUATION OF ALTERNATIVE SITE E		
Proposed Project Significant Effect (SU) – Significant project impact is unavoidable (SM) – Significant project impact can be avoided or substantially lessened by mitigation measures described in this EIR.	**Avoid or Substantially Lessen Significant Effect?**	**Explanation**
General plan conflicts (SM) (see Chapter 3)	No substantial difference	The alternative site is planned for low density residential. The project would conflict with the residential designation.
Land use conflicts (SU) (see Chapters 3 and 5)	Increase	The project would conflict with the existing agricultural operations near the alternative site for the same reasons it would conflict with those near the proposed project site. In this case, however, based on the City's general plan, the nearby agricultural lands, with the exception of the lands located to the east, are planned for conversion to urban uses. The land to the east is outside the City of Fresno Sphere of Influence and designated for agricultural uses by the County of Fresno. Development of the proposed project on the alternative site could lead to potential permanent land use conflicts with agricultural operations in this area. Development of the project on the alternative site should be compatible with the residential uses planned for the area.
Prime agricultural land conversion (SU) (see Chapter 5)	Increase	The entire site is classified as Prime Farmland. The site is not under Williamson Act.
Agricultural conflicts (SU) (see Chapter 5)	Increase	See the above explanation for land use conflicts.
Mortality of special status animals, raptors, and various bat species (SM) (see Chapter 6)	Unknown	Site specific surveys would have to be conducted to determine if conditions suitable for the special status animals, raptors, and various bat species exist on the project site.
Loss of subsurface cultural and paleontological resources (SM) (see Chapter 7)	Unknown	Site specific surveys would have to be conducted to determine if the potential for loss of subsurface cultural and paleontological resources could occur on the alternative site.
Alteration of rural and agricultural visual environment (SU) (see Chapter 8)	No substantial difference	The existing visual environment would be altered if the proposed project were developed on the alternative site.
Litter and graffiti (SM) (see Chapter 8)	No substantial difference	The potential for litter and graffiti would remain if the proposed project were developed on the alternative site.
Light and glare (SM)	No substantial	The same mitigation measures would apply to

TABLE 24-6 EVALUATION OF ALTERNATIVE SITE E		
Proposed Project Significant Effect (SU) – Significant project impact is unavoidable (SM) – Significant project impact can be avoided or substantially lessened by mitigation measures described in this EIR.	**Avoid or Substantially Lessen Significant Effect?**	**Explanation**
(see Chapter 8)	difference	the proposed project regardless of the site location.
Increased traffic (SM) (see Chapter 9)	Increase	The project would generate the same amount of traffic at this location. However, The alternate site would only have limited access to one major street, which would be inadequate to handle the traffic generated.
Airborne particulate matter from project construction activity. (SM) (see Chapter 10)	No substantial difference	Construction activities on the alternative site and the proposed site should not differ significantly. Therefore, the amount of airborne particulate matter generated by construction activity should not be substantially different between the two sites.
Ozone precursor pollutants and diesel-exhaust particulates from project construction activity. (SM) (see Chapter 10)	No substantial difference	Construction activities on the alternative site and the proposed site should not differ significantly. Therefore, the amount of ozone precursor pollutants and diesel-exhaust particulates generated by construction activity should not be substantially different between the two sites.
Long-term emissions of ozone precursor pollutants from project operations (SU) (see Chapter 10)	Increase	Long-term emissions of ozone precursor pollutants from project operations would probably increase due to longer trip lengths resulting from the location of the site on the eastern edge of the planned urban area.
Local mobile-source CO concentrations (SM) (see Chapter 10)	No substantial difference	Local mobile-source CO concentrations from due to the project should not differ substantially between the proposed site and the alternative site because the amount of the traffic generated by the project would remain essentially the same regardless of the site.
Cumulative contribution to regional air quality impacts (SU) (see Chapter 10)	No substantial difference	The project would contribute cumulatively to regional air quality impacts regardless of its location. (See also the preceding explanation to "Long-term emissions of ozone.")
Short-term construction noise (SM) (see Chapter 11)	No substantial difference	Short-term construction noise would result from the project regardless of its location.
Long-term exposure to stationary source noise (SM) (see Chapter 11)	No substantial difference	Long-term exposure to stationary source noise would result from the project regardless of its location.

TABLE 24-6 EVALUATION OF ALTERNATIVE SITE E		
Proposed Project Significant Effect (SU) – Significant project impact is unavoidable (SM) – Significant project impact can be avoided or substantially lessened by mitigation measures described in this EIR.	**Avoid or Substantially Lessen Significant Effect?**	**Explanation**
Compatibility of proposed land uses with predicted onsite noise levels (SM) (see Chapter 11)	No substantial difference	Compatibility issues related to the proposed land uses with predicted onsite noise levels would occur regardless of the project location.
Local demand for water (SM) (see Chapter 12)	No substantial difference	The project would require the same amount of water. However, this site would be more difficult to serve given its location on the eastern edge of the planned urban area..
Damage to existing Fresno Irrigation District facilities within the project site (SM) (see Chapter 12)	Unknown	It is unknown if Fresno Irrigation District (FID) facilities are located within the alternative site. The FID would have to be contacted in order to determine this.
Improper destruction of existing wells (SM) (see Chapter 12)	No substantial difference	Agricultural and domestic wells likely exist on this alternate site given the rural and agricultural uses on the site. The potential for impacts related to improper destruction of the wells would be the same as with the proposed project.
Demand for wastewater collection facilities (SM) (see Chapter 13)	Increase	The project would generate the same volume of wastewater. However, this site would be more difficult to serve given its location on the eastern edge of the planned urban area.
Need for wastewater treatment and disposal service (SM) (see Chapter 13)	No substantial difference	The project would require wastewater treatment and disposal service regardless of its location.
Increased stormwater runoff (SM) (see Chapter 14)	No substantial difference	The project would generate approximately the same volume of stormwater and would require stormwater collection and disposal facilities regardless of its location.
Construction-related stormwater pollution (SM) (see Chapter 14)	No substantial difference	The same potential for construction-related stormwater pollution would exist regardless of the site location.
Development in a flood prone area (small portion of site) (SM) (see Chapter 14)	Avoid	The alternate site is not located in a 100-year floodplain.
Consumption of electrical energy and natural gas (SM) (see Chapter 19)	No substantial difference	The project would consume the same amount of electrical energy and natural gas regardless of its location.

TABLE 24-6 EVALUATION OF ALTERNATIVE SITE E		
Proposed Project Significant Effect (SU) – Significant project impact is unavoidable (SM) – Significant project impact can be avoided or substantially lessened by mitigation measures described in this EIR.	**Avoid or Substantially Lessen Significant Effect?**	**Explanation**
Pesticide application and product disposal (SM) (see Chapter 20)	Unknown	Site specific surveys would have to be conducted to determine if the application of pesticides and any improper product disposal has materially impacted the alternative site. Based on the historical use of the site for agriculture, the potential for this impact cannot be precluded.

TABLE 24-7

COMPARATIVE EVALUATION OF PROPOSED PROJECT AND PROJECT ALTERNATIVES

Issue	Alternative					
Will the alternative feasibly attain most of the basic project objectives?	**Proposed project**	**No project: ag/rural residential use**	**No project: medium density residential use**	**Alternate Site B**	**Alternate Site C**	**Alternate Site E**
	Yes	No	No	No	No	Yes

Key:
A-Avoid; SL-Substantially lessen; LI-Lesser impact but still significant; NSD-No substantial difference; I-Increase; U-Unknown

Will the alternative avoid or substantially lessen any of the significant effects of the project?	**Alternatives**				
	No project: ag/rural residential use	**No project: medium density residential use**	**Alternate Site B**	**Alternate Site C**	**Alternate Site E**
General plan conflicts	A	SL	NSD	NSD	NSD
Land use conflicts	A	SL	NSD	I	I
Prime agricultural land conversion	A	NSD	I	I	I
Agricultural conflicts	A	NSD	NSD	SL	I
Special status animals, raptors, bats	SL	NSD	U	U	U
Loss of cultural/paleo. resources	A	NSD	U	U	U
Alteration of rural/ag visual env.	A	NSD	NSD	NSD	NSD
Litter and graffiti	A	SL	NSD	NSD	NSD
Light and glare	A	SL	NSD	NSD	NSD
Increased traffic	A	LI	NSD	NSD	I
Airborne particulates: construction	A	NSD	NSD	NSD	NSD
Ozone/diesel-exhausts: construct.	A	NSD	NSD	NSD	NSD
Ozone precursors: proj. operation	A	NSD	NSD	NSD	I
Mobile-source CO concentrations	A	SL	NSD	LI	NSD
Cumulative regional air quality	A	NSD	NSD	LI	NSD
Short-term construction noise	A	NSD	NSD	NSD	NSD
Stationary source noise	A	A	NSD	SL	NSD
Land use/onsite noise compatibility	A	NSD	NSD	NSD	NSD
Water demand	SL	I	NSD	LI	NSD
Damage to FID facilities	A	NSD	U	U	U
Improper well destruction	A	NSD	NSD	NSD	NSD
Wastewater collection facilities	A	I	NSD	LI	I
Wastewater treatment and disposal	A	I	NSD	LI	NSD
Stormwater runoff	A	NSD	NSD	LI	NSD
Construction stormwater pollution	A	NSD	NSD	NSD	NSD

TABLE 24-7 COMPARATIVE EVALUATION OF PROPOSED PROJECT AND PROJECT ALTERNATIVES					
Flood prone area on project site	A	NSD	A	NSD	A
Electricity/natural gas consumption	A	NSD	NSD	LI	NSD
Pesticide application	I	A	U	U	U

Appendix

I-1

Fourth Educational Center Site Selection Study (Revised)

Fourth Educational Center
Site Selection Study
(Revised)

Prepared for

Clovis Unified School District

February 2005
(Revised December 2006)

PAOLI & ODELL, Inc.
School Facility, Environmental and City Planners

Fourth Educational Center
Site Selection Study
(Revised)

Prepared for

CLOVIS UNIFIED SCHOOL DISTRICT
1450 Herndon Avenue
Clovis, California 93611-0599

Prepared by

Paoli & Odell, Inc.
School Facility, Environmental and City Planners

and

Blair, Church & Flynn
Consulting Engineers

February 2005
(Revised December 2006)

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I. Purpose, Scope, and Methodology

A. Purpose

The purpose of this site selection study is to identify a preferred site for a Fourth Educational Center, which would include a high school, intermediate school and elementary school. The site would potentially include a football stadium that would seat approximately 8,000-10,000. The study is also intended to provide direction, or focus, for future actions that would be necessary before the District could make a decision to acquire the preferred site.

This study updates a previous report prepared in February 2005 and is necessary to address a change in the configuration of Site D and changes in conditions for other sites that have occurred since the previous report was prepared.

The District's preference is to acquire a site large enough for an educational center (140-160 acres). However, a site of lesser size could potentially be considered if it could accommodate a high school and intermediate school. A site size of 100-120 acres would be needed for a high school and intermediate school.

The District has determined that the next educational center (following the Third Educational Center at Willow and International Avenues) should be located in the southeast portion of the District. The reasons for this are as follows:

1. Clovis East High School and Reyburn Intermediate School within the Reagan Educational Center are already nearing capacity. The Reagan Educational Center was intended to serve the area south of Shaw Avenue, and was sited within the City of Clovis' Loma Vista Specific Plan area. The portion of the Loma Vista Plan within the District will accommodate a population of approximately 20,000.

2. Within the City of Fresno's Planning Area (south of the Gould Canal), full development of the existing planned urban area (not including the new Southeast Growth Area) will result in an additional 15,000 population in the District. Numerous subdivision maps have been approved in the area and substantial construction activity is occurring.

3. With the adoption of the 2025 Fresno General Plan in 2002, the City of Fresno added a new growth area south of the Gould Canal and east of Locan Avenue. This new Southeast Growth Area was added to the City Sphere of influence in May 2006 and will eventually accommodate a population of about 10,000-15,000 new residents within the District.

The objectives established by the District for the site selection study are to:

- Select a site in the southeastern portion of the District that is best located to serve the present and future population of the District;
- Select a site within an area planned for urban residential development that is large enough to meet educational needs defined by the District and State;
- Select a site that is not subject to undesirable physical or environmental conditions;
- Select a site that can potentially accommodate an 8,000-10,000 seat football stadium;
- Select a site that will minimize any adverse effects on established and planned land uses in the community; and
- Conduct a thorough, objective site selection process.

B. Scope and Methodology

The scope and methodology for the site selection study encompasses five tasks:

Task 1 encompassed identifying the objectives sought by the District in proposing the project and developing the site selection criteria that should be used to select a preferred site. Screening criteria, for use in identifying potential sites, and site selection criteria, for use in comparative analysis of the sites, were developed. The screening and site selection criteria included those established by state law for school projects and additional criteria the District and Consultants identified as appropriate in order for the site to satisfy the objectives sought for the project.

Task 2 involved identifying possible sites for detailed analysis using the screening criteria developed in Task 1.

Task 3 involved conducting the research and comparative analysis necessary to identify a preferred site using the site selection criteria. This included:

- Viewing the sites in the field;
- Research and analysis using various published sources such as land use and circulation plans, aerial photography, USGS maps, flood maps, soil surveys, important farmland maps, etc;
- Consultation with District staff and consultants; and
- Consultation with entities that provide utilities and services for the sites.

Task 4 involved preparing this study document.

Task 5 will involve presenting the study to the District Board of Trustees.

II. Site Selection Criteria

A. Background

The screening and site selection criteria used for this study are based on achieving the objectives described in Section I and complying with requirements and recommendations from the following sources:

- The California Code of Regulations, Title 5 (CCR);
- The California Education Code (EC);
- The California Public Resources Code (PRC);
- The California Environmental Quality Act Guidelines (CEQA);
- The Clovis Unified School District administration (District); and
- Paoli & Odell, Inc. and Blair, Church & Flynn's experience with school site selection (Consultants).

B. Screening Criteria

The following screening criteria were used to identify potential sites for further comparative analysis: (The source(s) for each criterion is provided in parenthesis.)

- ***Location.*** Potential school sites shall be located within the southeast portion of the District and within the City of Fresno's planning area (District & Consultants)
- ***Size and shape*****.** Potential school sites shall have:
    - An area of 140-160 gross acres for an educational center and an area of 100-120 gross acres for a high school and intermediate school (District & Consultants)
    - A regular shape and proportionate length-to-width ratio to adequately accommodate buildings, parking, and playfields that can be safely supervised (CCR)

- ***Development***. Potential school sites shall not:
  - Contain substantial existing development (District & Consultants)
  - Be bisected by a major canal or waterway or an existing or planned major street (District & Consultants)
- ***Safety.*** Potential school sites shall not be:
  - Traversed by pipelines that carry hazardous substances, materials, or wastes (PRC & EC)
  - A current or former hazardous waste disposal site or solid waste disposal site (PRC & EC)
  - Listed as a hazardous materials site pursuant to Government Code Section 65962.5 (PRC & EC)
  - Within an approach protection zone of Fresno-Yosemite International Airport (District & Consultants)
  - Within an area zoned or planned for industrial use (CCR)
- ***Geology, soils and topography***. Potential school sites shall not be:
  - On a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist (CCR & EC)
  - Within an area known to have potentially significant seismic, soils, or geologic hazards or constraints (CCR & EC)

C. Site Selection Criteria for Comparative Analysis

The site selection criteria used for comparative evaluation of potential school sites identified in the screening process are grouped under six general categories, as follows: (The source(s) for each criterion is provided in parenthesis.)

1. ***Safety.*** Potential school sites should *not* be:
   - 1.1. Within 1,500 feet of a railroad track easement (CCR)
   - 1.2. Adjacent to a road or freeway that would pose traffic-related safety problems for the school (CCR)
   - 1.3. Within the following distances from the edge of a power line easement: 100 feet for 50-133 kV lines; 150 feet for 220-230 kV lines; and 350 feet for 500-550 kV lines (CCR)
   - 1.4. Within two nautical miles of an airport or heliport (unless approval is obtained from the California Department of Transportation) (EC)
   - 1.5. Within one-quarter mile of a source that could emit hazardous emissions or handle acutely hazardous materials, substances, or wastes (PRC & EC)
   - 1.6. Within 2,000 feet of a significant disposal of hazardous waste (CCR)
   - 1.7. Near an above-ground water or fuel storage tank or within 1,500 feet of the easement of an above ground or underground pipeline that could pose a safety hazard to the site (CCR)
   - 1.8. Within a 100-year floodplain, as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map, or within a dam flood inundation area, unless the cost of mitigating the impact is reasonable (CCR)
2. ***Environment/Land Use.*** Potential school sites should *not* be:
   - 2.1. Within an area where existing or potential future noise levels may impede the instructional process (CCR & CEQA)

2.2. Within an area where the project would be exposed to substantial pollutant concentrations (CCR & CEQA)

2.3. Within a biologically or culturally sensitive area (CCR & CEQA)

2.4. Located on Prime Farmland, as designated on maps prepared under the Farmland Mapping and Monitoring Program of the California Resources Agency or on land under a Williamson Act Contract (CEQA)

2.5. Located on land that has existing development plans (District & Consultants)

2.6. Incompatible with existing and planned land uses (CCR)

3. ***Accessibility.*** Educational center and high school/intermediate school sites should have direct access to two existing or planned major streets (collector or arterial streets) (District & Consultant).

4. ***Site size, ownership and central location.*** Potential school sites should be:

4.1. Of sufficient size to accommodate as many of the desired facilities as possible on one contiguous site (District & Consultants)

4.2. In a minimal number of ownership's (District & Consultants)

4.3. Centrally located to best serve the student population (CCR)

5. ***Public services and utilities.*** Potential school sites should be in an area where the following public services and utilities can be adequately provided. In the case of utilities, they should be available at the school site with adequate capacity to serve the project or should be capable of being extended to the site without undue delays or unreasonable costs.

5.1. City of Fresno fire protection (CCR)

5.2. City of Fresno water service (CCR)

5.3. City of Fresno sewer service (CCR)

5.4. Fresno Metropolitan Flood Control District storm water drainage service (CEQA)

5.5. Electrical and gas service (CCR)

6. ***Site Preparation.*** The cost and complications of the following should not result in undue delays or unreasonable development costs:

6.1. Grading and drainage (CCR)

6.2. Piping of canals (CCR)

6.3. Demolition and hazardous cleanup (CCR)

III. Site Selection Results

A. Site Identification

Based upon the screening criteria listed in Section II,B, four potential sites were identified (see Figure 1).[1] These sites, identified as Sites B, C, D and E, were the only sites of sufficient size within the desired study area that met all of the screening criteria.[2]

Site B. The main portion of the site is located on the south side of Shields Avenue between Temperance and Locan Avenues (112.3 acres). An additional adjacent 28.66 acres are located at the southeast corner of Shields and Locan Avenues (total of 140.96 acres).

[1] The figures are located following the text of the report.

[2] The February 2005 site selection study included Site A, which comprised 153.2 acres bounded by Dakota, Armstrong, Shields and Temperance Avenues. This site has been eliminated from further consideration. This is because substantial development activity is occurring on the site and, therefore, the site no longer meets the screening criteria that states that "potential school sites shall not contain substantial existing development."

Site C. This site consists of 105 acres located on the north side of Olive Avenue between Temperance and DeWolf Avenues.

Site D. This site includes 155 acres located north and south of the Clinton Avenue alignment, between Leonard and Highland Avenues.

Site E. This site consists of 152 acres located on the west side of McCall Avenue between the Clinton and Shields Avenue alignments.

B. Comparative Evaluation Using Site Selection Criteria

The four sites identified through the screening process were comparatively evaluated against each of the site selection criteria listed in Section II,C. Table 1 is a summary table showing the ratings of all of the sites in each category.[3] Tables 2 through 5 provide individual evaluations of Sites B through E. Each table contains a list of the site selection criteria, the maximum possible score for each criterion, a site score for each criterion and a comment explaining the score. The tables also present subtotals for each of the six categories (safety, environment/land use, accessibility, site size/ownership/central location, public services and utilities, and site preparation) and a total score.

1. Safety

In the category of safety, worth 24 points, Sites D and E received the highest ratings (24 points each), followed by Site B (22 points each) and Site C (21 points).

Site B was downgraded in the category of traffic safety due to its location adjacent to Temperance Avenue, which is designated as an expressway in current City of Fresno plans. Expressways generally do not allow any mid-block access and have higher speeds than other street classifications.

A portion of Site B is within two nautical miles of the main Fresno-Yosemite International Airport runway. As required by the Education Code, this will trigger a review by the Department of Transportation. However, the site is not at a location that is likely to be of substantial concern in relation to the airport (i.e. to the side of the airport as opposed to off the end of the runway).

Site C is approximately 1,100 feet east of the former Thompson-Hayward chemical plant site (7183 E. McKinley Avenue). The plant manufactured, packaged and warehoused agricultural chemicals from 1951 to 1983 and caused substantial above ground and groundwater contamination. Extensive cleanup actions have been taken by governmental agencies (led by the Department of Toxic Substances Control) since the plant closed down. The most recent action took place in June 2003 when final remedial action consisting of a composite clay and vegetated soil cap was completed. The potential effect of the former plant would need to be evaluated in relation to potential nearby school use.

The northern portion of Site C is within a 100-year flood zone according to Federal Emergency Management Agency flood maps.

2. Environment/Land Use

The environment/land use category was worth a total of 18 points. Site D scored 18 points, followed by Site E (16 points), Site C (14 points) and Site B (12 points).

Site B was downgraded in the category of noise exposure due its location along Temperance Avenue, which is planned to be an expressway.

[3] The tables are located following the text of the report.

All of the sites, except Site D, were downgraded in the category of agricultural land because they all include substantial percentages of Prime Farmland.

Site B was downgraded in the development plan category because the eastern half of the 112 acre portion of Site B has been approved as a single family residential subdivision. Development could begin on the site in the near future.

With respect to land use compatibility, the best situation is for schools to be located in an urban residential area, without nearby commercial or industrial uses. Sites B, D and E are located in areas planned for urban residential uses. Site C is located in an existing rural residential area, which was not developed with the infrastructure to support more intense urban uses. A high school and intermediate school could result in unanticipated levels of traffic and activity that would be incompatible with the rural infrastructure and environment.

3. Accessibility

The category of accessibility, worth 12 points, relates to whether the sites have access to at least two existing or planned major streets (arterial or collector streets). In this category, Site B received 12 points, followed by Site D (10 points), Site C (9 points) and Site E (4 points).

Site B has access to three major streets: Shields, Temperance and Locan Avenues. Site D has access to Leonard and Highland Avenues. Site C has east-west access to Olive and McKinley Avenues, but no access to any north-south streets. Site E has limited frontage on only one major street (McCall Avenue). If Shields and Clinton Avenues are eventually built in the vicinity of Site E, the site would have very limited frontage on these streets.

4. Site size, ownership and central location

The site size, ownership and central location category was worth a maximum of 22 points. Sites D and E tied for the lead in this category, with 15 points each, followed by Sites B and C, with 11 points each.

Sites D and E, at over 150 acres each, could accommodate a complete educational center. The main portion of Site B (112 acres) could accommodate a high school and an intermediate school, but a stadium would be questionable. The elementary school would need to be located on an adjacent 20 acre site. Site C, at 105 acres, could potentially accommodate a high school and intermediate school, but not a stadium or elementary school.

Sites B, C and D were downgraded in the ownership category because they would necessitate the assemblage of a number of parcels with different owners. Site B has 8 parcels with 6 owners, Site C has 8 parcels with 8 owners, and Site D has 11 parcels with 10 owners. In contrast, Site E has two parcels with one owner.

With respect to being centrally located to best serve to the student population, Site D was rated the highest (9 out of 12 points), followed by Site C (7 points), Site B (6 points) and Site E (5 points). The sites were rated based on their distance from the Reagan Educational Center (2 miles is the District's desired distance between such facilities), and on centrality to the future student population.

Although Site D is located closer than the desired 2 mile distance from the Reagan Educational Center (about 1.25 miles), it is the most centrally located site in relation the future population of the City of Fresno's Southeast Growth Area. Site C is located a desirable distance from Reagan (2 miles), but is located south of most of the future student population. Site B is too close to Reagan (about 1.1 miles) and is on the west side of the planned future urban population. Site E is closer than desired to Reagan (about 1.3 miles) and is located on the east edge of the City of Fresno's Southeast Growth Area.

5. Public Services and Utilities

The maximum point total possible in the public services and utilities category is 15. Site B received 15 points, followed by Site D (12 points), Site E (10 points) and Site C (8 points).

Site B is within the existing City of Fresno service area, within an FMFCD master planned drainage area and about 2.5 miles from a City fire station. Water, sewer electrical and gas lines are adjacent the site.

Site C is outside the current City of Fresno sewer service area and is not within an FMFCD master planned drainage area. As a planned rural residential area, it is uncertain whether these services would be extended through this area in the future. City water service was extended to some rural residences in the area because of the groundwater contamination caused by the Thompson-Hayward chemical plant, but it is unknown whether this would be adequate for school use. The nearest fire station is a County station at Tulare and Minnewawa, about 4 miles southwest of the site.

Sites D and E are located within the City of Fresno's Southeast Growth Area. No sewer or water lines or service currently exists in this area, but sewer and water infrastructure would likely be in place in the vicinity of Site D by the time the school facilities are constructed. Since Site E is on the eastern edge of the planned growth area, services would be less likely to be proximate to Site E at the time of school construction.

Site D is near existing and planned FMFCD drainage facilities. Site E would eventually be within a master planned drainage area once the Southeast Growth Area plan is prepared and implemented. Electric lines are proximate to both Sites D and E and gas service would be brought in as the Southeast Plan develops.

6. Site Preparation

The site preparation category was worth a maximum of 9 points. Site B received 8 points, followed by Sites C, D and E, all with 7 points.

No substantial grading or drainage problems are anticipated on any of the sites.

Irrigation canals form the border of most of Site E, which would result in the need to deal with canal-related issues to gain better site access and for safety reasons. An irrigation ditch runs through the northern portion of Site C, which would need to be piped.

With respect to demolition and hazardous cleanup, development of Site D would require the removal of nine residences, Site C contains five residences that would require removal, and Site B contains existing three residences and associated structures.

IV. Conclusions and Recommendations

A. Preferred Site

As shown in Table 1 (Site Ratings Comparison Table), Site D was rated the highest (86 points), followed by Site B (80 points), Site E (76 points) and Site C (70 points).

Site D is superior primarily because it is centrally located in the portion of the City of Fresno's Southeast Growth Area designated for urban development. This will make the site central to the future student population and provide for essential service and infrastructure availability by the time the schools are constructed. Site D will have good street access and does not have any safety or environment/land use category drawbacks.

Most of the Site D is owned by the Fresno Metropolitan Flood Control District, which has indicated that the land will not be needed for future flood control purposes. However, the

remainder of the site consists of nine privately owned parcels containing single family residences that would need to be acquired and removed.

Site B is acceptable in terms of safety, street access and public services, but is located too close to the Reagan Educational Center and is not as centrally located with respect to the planned urban population as Site D. The eastern portion of the 112-acre parcel is within an approved subdivision map, so development of the site may occur in the near future.

Similar to Site D, Site E is within the City of Fresno's Southeast Growth Area. However, it is located on the eastern edge of the growth area and would not be centrally located in relation to the future student population. Site E also has very limited street access and most of its boundaries are formed by irrigation canals, which would need to be dealt with in terms of safety and possible piping issues.

Site C is located a desirable distance from the Reagan Educational Center (2 miles), but is located south of where most of the future student population will be located. This site is the smallest of the sites (105 acres) and is located in an existing rural residential area, which is lacking in existing and planned infrastructure. Site C includes all or part of eight parcels and contains five dwellings that would need to be removed.

Based upon the information in this study, we recommend designating Site D as the preferred site for future analysis.

B. Future Actions

The following actions should take place prior to acquisition of an educational center site:

- The District should identify, on a preliminary basis, a preferred site.
- The District should request that the California Department of Education, School Facilities Planning Division conduct a field inspection of the site.
- The District should obtain written authorization from the property owners for access to the site to allow on-site research and testing.
- The District should authorize a qualified firm to prepare a Phase I Environmental Site Assessment for the site and Preliminary Environmental Assessment (PEA), if required, in coordination with the Department of Toxic Substances Control.
- The District should authorize a qualified firm to prepare a geologic hazards investigation for the site.
- The District should prepare an Environmental Impact Report for the acquisition of the preferred site and the construction and operation of an educational center on the site.

Notes:

Although factors related to potential environmental hazards were addressed at a reconnaissance level in this study, it did not encompass conducting a Phase I Environmental Site Assessment (Phase I ESA). A Phase I ESA is required to confirm the criteria related to environmental hazards.

The study did not encompass conducting on-site soils or geologic hazards studies. Based upon our general knowledge and experience, the likelihood of substantial soils or geological hazards on the sites is small. However, this should be confirmed by a geologic hazards investigation performed by a registered engineer.

TABLE 1

Clovis Unified School District
FOURTH EDUCATIONAL CENTER SITE SELECTION STUDY
SITE RATINGS COMPARISON

Site Selection Criteria	*Points Possible*	*Site B*	*Site C*	*Site D*	*Site E*
1. ***Safety.*** Potential school sites should *not* be:					
1.1. Within 1,500 feet of a railroad track easement	3	3	3	3	3
1.2. Adjacent to a road or freeway that would pose traffic-related safety problems for the school	3	2	3	3	3
1.3. Within the following distances from the edge of a power line easement: 100 feet for 50-133 kV lines; 150 feet for 220-230 kV lines; and 350 feet for 500-550 kV lines	3	3	3	3	3
1.4. Within two nautical miles of an airport or heliport (unless approval is obtained from the California Department of Transportation)	3	2	3	3	3
1.5. Within one-quarter mile of a source that could emit hazardous emissions or handle acutely hazardous materials, substances, or wastes	3	3	3	3	3
1.6. Within 2,000 feet of a significant disposal of hazardous waste	3	3	1	3	3
1.7. Near an above-ground water or fuel storage tank or within 1,500 feet of the easement of an above ground or underground pipeline that could pose a safety hazard to the site	3	3	3	3	3
1.8. Within a 100-year floodplain, as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map, or within a dam flood inundation area, unless the cost of mitigating the impact is reasonable	3	3	2	3	3
Subtotal (Safety)	**24**	**22**	**21**	**24**	**24**
2. ***Environment/Land Use.*** Potential school sites should *not* be:					
2.1. Within an area where existing or potential future noise levels may impede the instructional process	3	2	3	3	3
2.2. Within an area where the project would be exposed to substantial pollutant concentrations	3	3	3	3	3
2.3. Within a biologically or culturally sensitive area	3	3	3	3	3
2.4. Not be located on Prime Farmland, as designated on maps prepared under the Farmland Mapping and Monitoring Program of the California Resources Agency or on land under a Williamson Act Contract (CEQA)	3	1	1	3	1
2.5. Located on land that has existing development plans	3	0	3	3	3
2.6. Incompatible with existing and planned land uses	3	3	1	3	3
Subtotal (*Environment/Land Use*)	**18**	**12**	**14**	**18**	**16**
3. ***Accessibility.*** Educational center and high school/intermediate school sites should have direct access to two existing or planned major streets (collector or arterial streets).	12	12	9	10	4
Subtotal (*Accessibility*)	**12**	**12**	**9**	**10**	**4**

Site Selection Criteria	*Points Possible*	*Site B*	*Site C*	*Site D*	*Site E*
4. ***Site size, ownership and central location.*** Potential school sites should be***:***					
4.1. Of sufficient size to accommodate as many of the desired facilities as possible on one contiguous site	6	4	3	6	6
4.2. In a minimal number of ownership's	4	1	1	0	4
4.3. Centrally located to best serve the student population	12	6	7	9	5
Subtotal (*Site size, ownership and central location*)	**22**	**11**	**11**	**15**	**15**
5. ***Public services and utilities.*** Potential school sites should be in an area where the following public services and utilities can be adequately provided. In the case of utilities, they should be available at the school site with adequate capacity to serve the project or should be capable of being extended to the site without undue delays or unreasonable costs.					
5.1. City of Fresno fire protection	3	3	1	2	2
5.2. City of Fresno water service	3	3	2	2	2
5.3. City of Fresno sewer service	3	3	1	2	1
5.4. Fresno Metropolitan Flood Control District stormwater drainage service	3	3	1	3	2
5.5. Electrical and gas service	3	3	3	3	3
Subtotal (Public services and utilities)	**15**	**15**	**8**	**12**	**10**
6. ***Site Preparation.*** The cost and complications of the following should not result in undue delays or unreasonable development costs:					
6.1. Grading and drainage	3	3	3	3	3
6.2. Piping of canals	3	3	2	3	1
6.3. Demolition and hazardous cleanup	3	2	2	1	3
Subtotal (Site Preparation)	**9**	**8**	**7**	**7**	**7**
GRAND TOTAL	**100**	**80**	**70**	**86**	**76**

TABLE 2
Site B Evaluation

Site Location:	**South side of Shields between Temperance and Locan (112.3 acres); and southeast corner of Shields and Locan (28.66 acres)(total of 140.96 acres)**

Site Selection Criteria	***Points Possible***	***Points Awarded***	***Comments***
1. ***Safety.*** Potential school sites should *not* be:			
1.1. Within 1,500 feet of a railroad track easement	3	3	The site is not located within 1,500 feet of a railroad track easement.
1.2. Adjacent to a road or freeway that would pose traffic-related safety problems for the school	3	2	Temperance Avenue is planned as a future expressway.
1.3. Within the following distances from the edge of a power line easement: 100 feet for 50-133 kV lines; 150 feet for 220-230 kV lines; and 350 feet for 500-550 kV lines	3	3	No high voltage power lines are evident within the prescribed distances.
1.4. Within two nautical miles of an airport or heliport (unless approval is obtained from the California Department of Transportation)	3	2	The western edge of the site is within two nautical miles (12,152 feet) of the primary FYI airport runway and will require a CA Dept of Transportation evaluation. However, the site is not at a location that is likely to be of substantial concern in relation to the airport.
1.5. Within one-quarter mile of a source that could emit hazardous emissions or handle acutely hazardous materials, substances, or wastes	3	3	No sources apparent within ¼ mile.
1.6. Within 2,000 feet of a significant disposal of hazardous waste	3	3	Not within 2,000 feet of significant hazardous waste disposal.
1.7. Near an above-ground water or fuel storage tank or within 1,500 feet of the easement of an above ground or underground pipeline that could pose a safety hazard to the site	3	3	No above-ground water or fuel storage tanks have been identified near the site. Based on absence of marker signs, no underground pipelines within 1,500 feet.
1.8. Within a 100-year floodplain, as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map, or within a dam flood inundation area, unless the cost of mitigating the impact is reasonable	3	3	The site is not within a 100-year floodplain.
Subtotal (Safety)	**24**	**22**	
2. ***Environment/Land Use.*** Potential school sites should *not* be:			
2.1. Within an area where existing or potential future noise levels may impede the instructional process	3	2	The site is located next to a planned expressway (Temperance Avenue).
2.2. Within an area where the project would be exposed to substantial pollutant concentrations	3	3	No exposure to substantial pollutant concentrations anticipated.
2.3. Within a biologically or culturally sensitive area	3	3	The site does not appear to be within a biologically or culturally sensitive area.
2.4. Not be located on Prime Farmland, as designated on maps prepared under the Farmland Mapping and Monitoring Program of the California Resources Agency or on land under a Williamson Act Contract (CEQA)	3	1	About 90% of the site is Prime Farmland and 10% Farmland of Statewide Importance. The site is not under a Williamson Act Contract.
2.5. Located on land that has existing development plans	3	0	The eastern half of the 112 acre parcel is within an approved subdivision map. Development of the site is imminent.

Site Selection Criteria	*Points Possible*	*Points Awarded*	*Comments*
2.6. Incompatible with existing and planned land uses	3	3	Within planned urban residential area.
Subtotal (*Environment/Land Use*)	**18**	**12**	
3. ***Accessibility.*** Educational center and high school/ intermediate school sites should have direct access to two existing or planned major streets (collector or arterial streets).	12	12	The site has direct access to three planned major streets: Shields (arterial), Temperance (expressway) and Locan (collector)
Subtotal (*Accessibility*)	**12**	**12**	
4. ***Site size, ownership and central location.*** Potential school sites should be*:*			
4.1. Of sufficient size to accommodate as many of the desired facilities as possible on one contiguous site	6	4	Can accommodate an intermediate school, high school and stadium on the larger 112-acre portion of site. The elementary school would need to be located east of Locan.
4.2. In a minimal number of ownership's	4	1	8 parcels with 6 owners.
4.3. Centrally located to best serve the student population	12	6	Located too close to Reagan and west of future population center.
Subtotal (*Site size, ownership and central location*)	**22**	**11**	
5. ***Public services and utilities.*** Potential school sites should be in an area where the following public services and utilities can be adequately provided. In the case of utilities, they should be available at the school site with adequate capacity to serve the project or should be capable of being extended to the site without undue delays or unreasonable costs.			
5.1. City of Fresno fire protection	3	3	City of Fresno Fire Station No. 10 is approximately 2.5 miles to the west of the site.
5.2. City of Fresno water service	3	3	Sewer lines adjacent to site
5.3. City of Fresno sewer service	3	3	Water lines adjacent to site.
5.4. Fresno Metropolitan Flood Control District stormwater drainage service	3	3	Within Drainage Area BS. Services capable of being extended.
5.5. Electrical and gas service	3	3	Electricity and gas adjacent to site.
Subtotal (Public services and utilities)	**15**	**15**	
6. ***Site Preparation.*** The cost and complications of the following should not result in undue delays or unreasonable development costs:			
6.1. Grading and drainage	3	3	No substantial grading or drainage issues.
6.2. Piping of canals	3	3	No irrigation canals or ditches would need to be piped or relocated.
6.3. Demolition and hazardous cleanup	3	2	There are three existing single family homes on the site that would need to be removed (two on the 112 acres west of Locan and one east of Locan).
Subtotal (Site Preparation)	**9**	**8**	
GRAND TOTAL (SITE B)	**100**	**80**	

TABLE 3
Site C Evaluation

Site Location:	**North side of Olive between Temperance and DeWolf (105 acres)**

Site Selection Criteria	***Points Possible***	***Points Awarded***	***Comments***
1. ***Safety.*** Potential school sites should *not* be:			
1.1. Within 1,500 feet of a railroad track easement	3	3	The northern portion of the site abuts a railroad track easement on the south side of McKinley, but the railroad is no longer operational and the tracks have been removed.
1.2. Adjacent to a road or freeway that would pose traffic-related safety problems for the school	3	3	No significant traffic safety problems anticipated.
1.3. Within the following distances from the edge of a power line easement: 100 feet for 50-133 kV lines; 150 feet for 220-230 kV lines; and 350 feet for 500-550 kV lines	3	3	No high voltage power lines are evident within the prescribed distances.
1.4. Within two nautical miles of an airport or heliport (unless approval is obtained from the California Department of Transportation)	3	3	The site is not within two nautical miles (12,152 feet) of the FYI airport runways.
1.5. Within one-quarter mile of a source that could emit hazardous emissions or handle acutely hazardous materials, substances, or wastes	3	3	No operational sources apparent within ¼ mile.
1.6. Within 2,000 feet of a significant disposal of hazardous waste	3	1	The former Thompson-Hayward chemical plant is approximately 1,100 feet west of the site. The plant has been closed down and remediated, but potential effect of former plant should be evaluated in relation to school use.
1.7. Near an above-ground water or fuel storage tank or within 1,500 feet of the easement of an above ground or underground pipeline that could pose a safety hazard to the site	3	3	No above-ground water or fuel storage tanks have been identified near the site. Based on absence of marker signs, no underground pipelines within 1,500 feet.
1.8. Within a 100-year floodplain, as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map, or within a dam flood inundation area, unless the cost of mitigating the impact is reasonable	3	2	The northern portion of the site (between McKinley Avenue and the irrigation ditch) is within a 100-year floodplain.
Subtotal (Safety)	**24**	**21**	
2. ***Environment/Land Use.*** Potential school sites should *not* be:			
2.1. Within an area where existing or potential future noise levels may impede the instructional process	3	3	The site is not located to significant noise sources.
2.2. Within an area where the project would be exposed to substantial pollutant concentrations	3	3	No exposure to substantial pollutant concentrations anticipated.
2.3. Within a biologically or culturally sensitive area	3	3	The site does not appear to be within a biologically or culturally sensitive area.
2.4. Not be located on Prime Farmland, as designated on maps prepared under the Farmland Mapping and Monitoring Program of the California Resources Agency or on land under a Williamson Act Contract (CEQA)	3	1	About 60% of the site is Prime Farmland and 20% Farmland of Statewide Importance. The site is not under a Williamson Act Contract.
2.5. Located on land that has existing development plans	3	3	There are no known development plans.

Site Selection Criteria	*Points Possible*	*Points Awarded*	*Comments*
2.6. Incompatible with existing and planned land uses	3	1	A high school and intermediate school could result in unanticipated levels of traffic and activity that would be incompatible with the rural infrastructure and environment.
Subtotal (*Environment/Land Use*)	**18**	**14**	
3. ***Accessibility.*** Educational center and high school/ intermediate school sites should have direct access to two existing or planned major streets (collector or arterial streets).	12	9	The site has access to McKinley and Olive Avenues, but no access to a north-south street.
Subtotal (*Accessibility*)	**12**	**9**	
4. ***Site size, ownership and central location.*** Potential school sites should be***:***			
4.1. Of sufficient size to accommodate as many of the desired facilities as possible on one contiguous site	6	3	The site is large enough to accommodate a high school and intermediate school but not a stadium or elementary school.
4.2. In a minimal number of ownership's	4	1	8 parcels with 8 owners.
4.3. Centrally located to best serve the student population	12	7	Located two miles from Reagan but would be located south of most of the future student population.
Subtotal (*Site size, ownership and central location*)	**22**	**11**	
5. ***Public services and utilities.*** Potential school sites should be in an area where the following public services and utilities can be adequately provided. In the case of utilities, they should be available at the school site with adequate capacity to serve the project or should be capable of being extended to the site without undue delays or unreasonable costs.			
5.1. City of Fresno fire protection	3	1	Nearest fire station is Fresno County fire station at Tulare and Minnewawa, approximately 4 miles to the southwest of the site.
5.2. City of Fresno water service	3	2	Water lines were extended to nearby rural residential the area due to groundwater contamination from Thompson-Hayward plant. Unknown whether water lines would be adequate for school use.
5.3. City of Fresno sewer service	3	1	Nearest sewer line is in Fowler Avenue (1.5 miles to the west). As a designated rural residential area, sewer service may not be extended through the area.
5.4. Fresno Metropolitan Flood Control District stormwater drainage service	3	1	Not within FMFCD master planned drainage area.
5.5. Electrical and gas service	3	3	Electricity and gas adjacent to site.
Subtotal (Public services and utilities)	**15**	**8**	

Site Selection Criteria	*Points Possible*	*Points Awarded*	*Comments*
6. ***Site Preparation.*** The cost and complications of the following should not result in undue delays or unreasonable development costs:			
6.1. Grading and drainage	3	3	No substantial grading or drainage issues.
6.2. Piping of canals	3	2	An irrigation ditch runs though the northern portion of the site.
6.3. Demolition and hazardous cleanup	3	2	Five existing homes would need to be removed from the site.
Subtotal (Site Preparation)	**9**	**7**	
GRAND TOTAL (SITE C)	**100**	**70**	

TABLE 4
Site D Evaluation

Site Location:	**North and south of Clinton alignment between Leonard and Highland (155 acres)**

Site Selection Criteria	***Points Possible***	***Points Awarded***	***Comments***
1. ***Safety.*** Potential school sites should *not* be:			
1.1. Within 1,500 feet of a railroad track easement	3	3	The site is not located within 1,500 feet of a railroad track easement.
1.2. Adjacent to a road or freeway that would pose traffic-related safety problems for the school	3	3	No significant traffic safety problems anticipated.
1.3. Within the following distances from the edge of a power line easement: 100 feet for 50-133 kV lines; 150 feet for 220-230 kV lines; and 350 feet for 500-550 kV lines	3	3	No high voltage power lines are evident within the prescribed distances.
1.4. Within two nautical miles of an airport or heliport (unless approval is obtained from the California Department of Transportation)	3	3	The site is not within two nautical miles (12,152 feet) of the FYI airport runways
1.5. Within one-quarter mile of a source that could emit hazardous emissions or handle acutely hazardous materials, substances, or wastes	3	3	No operational sources apparent within ¼ mile.
1.6. Within 2,000 feet of a significant disposal of hazardous waste	3	3	Not within 2,000 feet of significant hazardous waste disposal.
1.7. Near an above-ground water or fuel storage tank or within 1,500 feet of the easement of an above ground or underground pipeline that could pose a safety hazard to the site	3	3	No above-ground water or fuel storage tanks have been identified near the site. Based on absence of marker signs, no underground pipelines within 1,500 feet.
1.8. Within a 100-year floodplain, as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map, or within a dam flood inundation area, unless the cost of mitigating the impact is reasonable	3	3	The site is not within a 100-year floodplain.
Subtotal (Safety)	**24**	**24**	
2. ***Environment/Land Use.*** Potential school sites should *not* be:			
2.1. Within an area where existing or potential future noise levels may impede the instructional process	3	3	The site is not located to significant noise sources.
2.2. Within an area where the project would be exposed to substantial pollutant concentrations	3	3	No exposure to substantial pollutant concentrations anticipated.
2.3. Within a biologically or culturally sensitive area	3	3	The site does not appear to be within a biologically or culturally sensitive area.
2.4. Not be located on Prime Farmland, as designated on maps prepared under the Farmland Mapping and Monitoring Program of the California Resources Agency or on land under a Williamson Act Contract (CEQA)	3	3	The site is not designated as Prime Farmland or Farmland of Statewide Importance. The site is not under a Williamson Act Contract.
2.5. Located on land that has existing development plans	3	3	There are no known development plans.
2.6. Incompatible with existing and planned land uses	3	3	The site is located within an area to be planned for urban residential uses (City of Fresno Southeast Growth Area).
Subtotal (*Environment/Land Use*)	**18**	**18**	

Site Selection Criteria	*Points Possible*	*Points Awarded*	*Comments*
3. ***Accessibility.*** Educational center and high school/ intermediate school sites should have direct access to two existing or planned major streets (collector or arterial streets).	12	10	The site has access to Leonard and Highland Avenues.
Subtotal (*Accessibility*)	**12**	**10**	
4. ***Site size, ownership and central location.*** Potential school sites should be***:***			
4.1. Of sufficient size to accommodate as many of the desired facilities as possible on one contiguous site	6	6	Can accommodate all desired facilities on the site.
4.2. In a minimal number of ownership's	4	0	11 parcels with 10 owners
4.3. Centrally located to best serve the student population	12	9	Located closer to Reagan than desired but would be central to the planned population of the Southeast Growth Area.
Subtotal (*Site size, ownership and central location*)	**22**	**15**	
5. ***Public services and utilities.*** Potential school sites should be in an area where the following public services and utilities can be adequately provided. In the case of utilities, they should be available at the school site with adequate capacity to serve the project or should be capable of being extended to the site without undue delays or unreasonable costs.			
5.1. City of Fresno fire protection	3	2	City of Fresno Fire Station No. 10 is approximately 4.5 miles to the west of the site. However, a new fire station would be planned in the vicinity with the City's SE growth plan.
5.2. City of Fresno water service	3	2	There are no water lines in the vicinity; however, water infrastructure would be provided to the site as part of the City's SE growth plan.
5.3. City of Fresno sewer service	3	2	There are no sewer lines in the vicinity; however, sewer infrastructure would be provided to the site as part of the City's SE growth plan.
5.4. Fresno Metropolitan Flood Control District stormwater drainage service	3	3	FMFCD drainage facilities are planned for land immediately west of the site.
5.5. Electrical and gas service	3	3	Electricity is adjacent to the site and gas would be provided as part of the City's SE growth plan.
Subtotal (Public services and utilities)	**15**	**12**	
6. ***Site Preparation.*** The cost and complications of the following should not result in undue delays or unreasonable development costs:			
6.1. Grading and drainage	3	3	No substantial grading or drainage issues.
6.2. Piping of canals	3	3	No irrigation canals or ditches would need to be piped or relocated.

Site Selection Criteria	*Points Possible*	*Points Awarded*	*Comments*
6.3. Demolition and hazardous cleanup	3	1	Nine homes would need to be removed from the site.
Subtotal (Site Preparation)	**9**	**7**	
GRAND TOTAL (SITE D)	**100**	**86**	

TABLE 5
Site E Evaluation

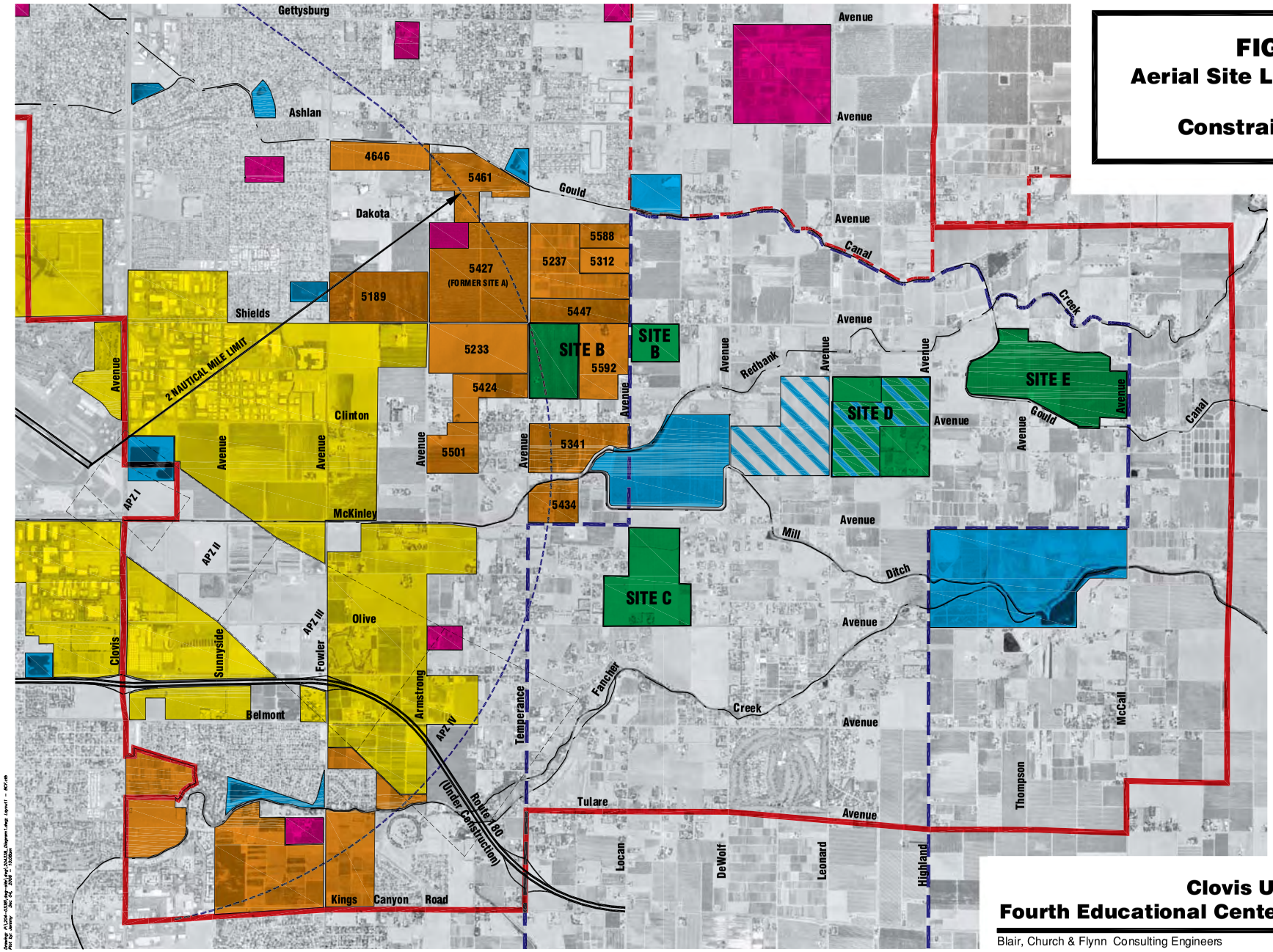
Site Location:	**West side of McCall between Shields and Clinton alignments (152 acres)**

Site Selection Criteria	***Points Possible***	***Points Awarded***	***Comments***
1. ***Safety.*** Potential school sites should *not* be:			
1.1. Within 1,500 feet of a railroad track easement	3	3	The site is not located within 1,500 feet of a railroad track easement.
1.2. Adjacent to a road or freeway that would pose traffic-related safety problems for the school	3	3	No significant traffic safety problems anticipated.
1.3. Within the following distances from the edge of a power line easement: 100 feet for 50-133 kV lines; 150 feet for 220-230 kV lines; and 350 feet for 500-550 kV lines	3	3	No high voltage power lines are evident within the prescribed distances.
1.4. Within two nautical miles of an airport or heliport (unless approval is obtained from the California Department of Transportation)	3	3	The site is not within two nautical miles (12,152 feet) of the FYI airport runways
1.5. Within one-quarter mile of a source that could emit hazardous emissions or handle acutely hazardous materials, substances, or wastes	3	3	No operational sources apparent within ¼ mile.
1.6. Within 2,000 feet of a significant disposal of hazardous waste	3	3	Not within 2,000 feet of significant hazardous waste disposal.
1.7. Near an above-ground water or fuel storage tank or within 1,500 feet of the easement of an above ground or underground pipeline that could pose a safety hazard to the site	3	3	No above-ground water or fuel storage tanks have been identified near the site. Based on absence of marker signs, no underground pipelines within 1,500 feet.
1.8. Within a 100-year floodplain, as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map, or within a dam flood inundation area, unless the cost of mitigating the impact is reasonable	3	3	The site is not within a 100-year floodplain.
Subtotal (Safety)	**24**	**24**	
2. ***Environment/Land Use.*** Potential school sites should *not* be:			
2.1. Within an area where existing or potential future noise levels may impede the instructional process	3	3	The site is not located to significant noise sources.
2.2. Within an area where the project would be exposed to substantial pollutant concentrations	3	3	No exposure to substantial pollutant concentrations anticipated.
2.3. Within a biologically or culturally sensitive area	3	3	The site does not appear to be within a biologically or culturally sensitive area.
2.4. Not be located on Prime Farmland, as designated on maps prepared under the Farmland Mapping and Monitoring Program of the California Resources Agency or on land under a Williamson Act Contract (CEQA)	3	1	All of the site is Prime Farmland The site is not under a Williamson Act Contract.
2.5. Located on land that has existing development plans	3	3	There are no known development plans.
2.6. Incompatible with existing and planned land uses	3	3	The site is located within an area to be planned for urban residential uses (City of Fresno Southeast Growth Area).
Subtotal (*Environment/Land Use*)	**18**	**16**	

Site Selection Criteria	*Points Possible*	*Points Awarded*	*Comments*
3. ***Accessibility.*** Educational center and high school/ intermediate school sites should have direct access to two existing or planned major streets (collector or arterial streets).	12	4	Site has limited frontage on only one major street (McCall Avenue). If Shields and Clinton are eventually built, the site would have very limited frontage on these streets.
Subtotal (*Accessibility*)	**12**	**4**	
4. ***Site size, ownership and central location.*** Potential school sites should be***:***			
4.1. Of sufficient size to accommodate as many of the desired facilities as possible on one contiguous site	6	6	Can accommodate all facilities (152 acres).
4.2. In a minimal number of ownership's	4	4	2 parcels with 1 owner.
4.3. Centrally located to best serve the student population	12	5	Located closer to Reagan than desired and would be east of the future population center.
Subtotal (*Site size, ownership and central location*)	**22**	**15**	
5. ***Public services and utilities.*** Potential school sites should be in an area where the following public services and utilities can be adequately provided. In the case of utilities, they should be available at the school site with adequate capacity to serve the project or should be capable of being extended to the site without undue delays or unreasonable costs.			
5.1. City of Fresno fire protection	3	2	City of Fresno Fire Station No. 10 is approximately 5.5 miles to the west of the site. However, a new fire station would be planned in the vicinity with the City's SE growth plan.
5.2. City of Fresno water service	3	2	There are no water lines in the vicinity; however, water infrastructure would be provided to the site as part of the City's SE growth plan.
5.3. City of Fresno sewer service	3	1	There are no sewer lines in the vicinity; however, sewer infrastructure would be provided to the site as part of the City's SE growth plan, but would be furthest area from sewer plant.
5.4. Fresno Metropolitan Flood Control District stormwater drainage service	3	2	Not within FMFCD master planned drainage area, but would eventually be master planned for urban drainage.
5.5. Electrical and gas service	3	3	Electricity is adjacent to the site and gas would be provided as part of the City's SE growth plan.
Subtotal (Public services and utilities)	**15**	**10**	
6. ***Site Preparation.*** The cost and complications of the following should not result in undue delays or unreasonable development costs:			
6.1. Grading and drainage	3	3	No substantial grading or drainage issues.
6.2. Piping of canals	3	1	Much of the site's boundary consists of irrigation canals (Gould Canal and the Grey Colony Ditch). The District would need to deal with canal-related issues to gain better site access and for safety reasons.

Site Selection Criteria	*Points Possible*	*Points Awarded*	*Comments*
6.3. Demolition and hazardous cleanup	3	3	None anticipated.
Subtotal (Site Preparation)	**9**	**7**	
GRAND TOTAL (SITE E)	**100**	**76**	

FIGURE 1
Aerial Site Location Diagram And Constraints Mapping



LEGEND:

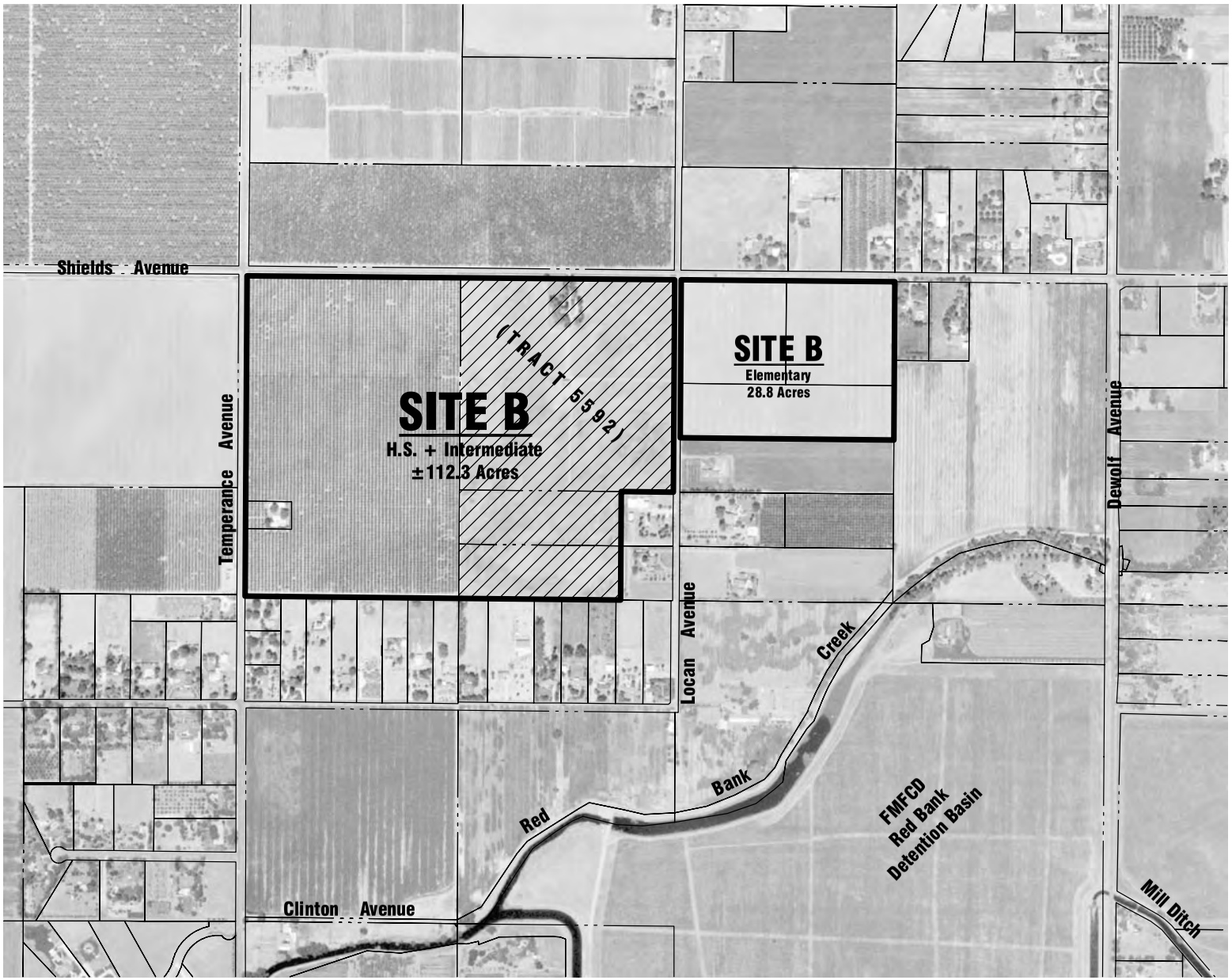
- Clovis Unified Boundary
- Existing School Site
- Fresno Metropolitan Flood Control District Facilities
- Fresno Metropolitan Flood Control District Property
- Proposed Educational Center Study Sites
- Planned or Existing Industrial Property
- Approved or Pending Subdivision with Tract Number Shown
- 2 Nautical Mile Limit From Runway
- Airport Approach Protection Zone
- City of Fresno Southeast Growth Area Boundary
- City of Clovis Southeast Urban Center Boundary

SCALE: 1"=2400'

Clovis Unified School District
Fourth Educational Center Site Location Study

Blair, Church & Flynn Consulting Engineers

Paoli & Odell, Inc.

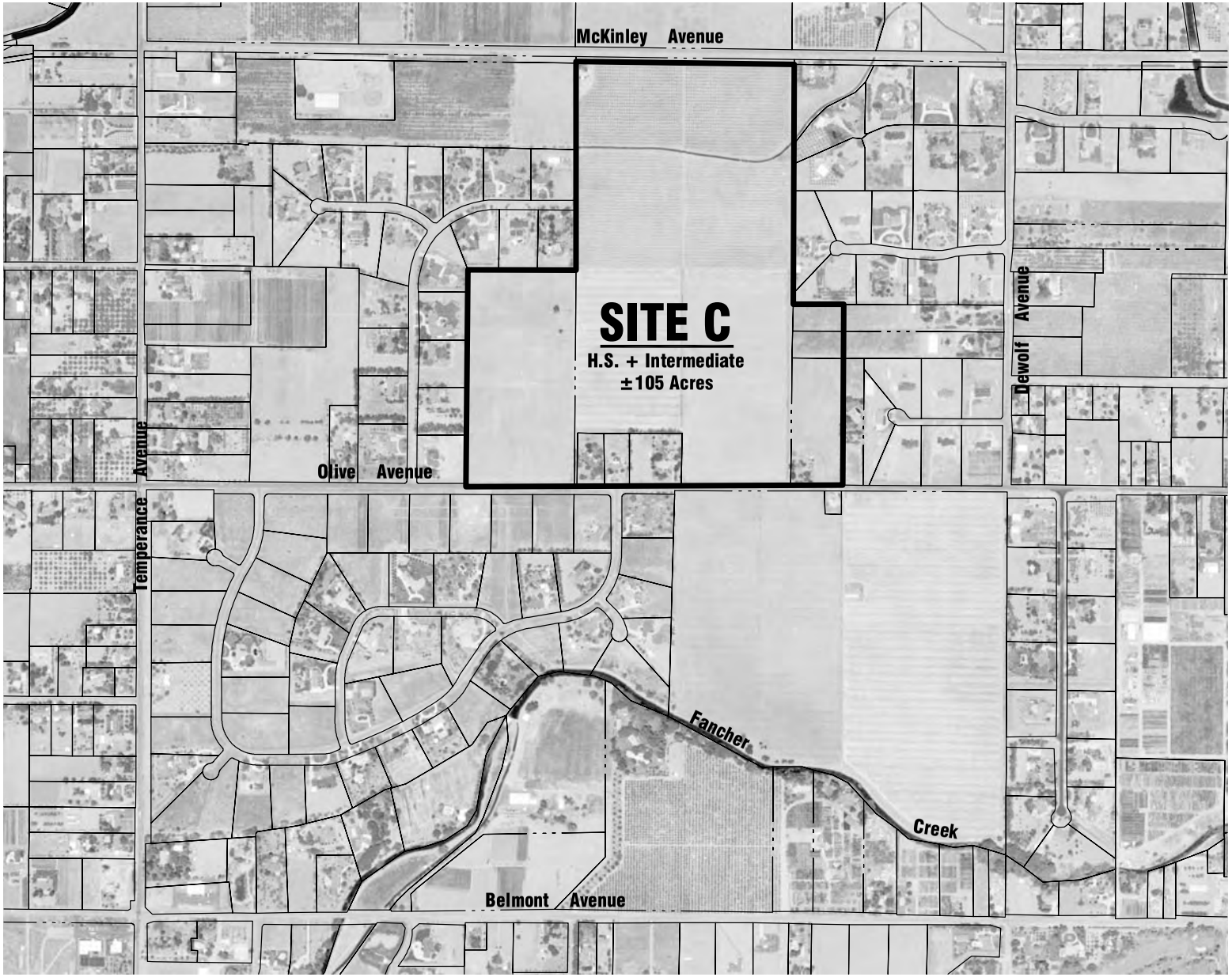


SCALE: 1"=600'

Site B
Clovis Unified School District
Fourth Educational Center Site Location Study

Blair, Church & Flynn Consulting Engineers

Paoli & Odell, Inc.

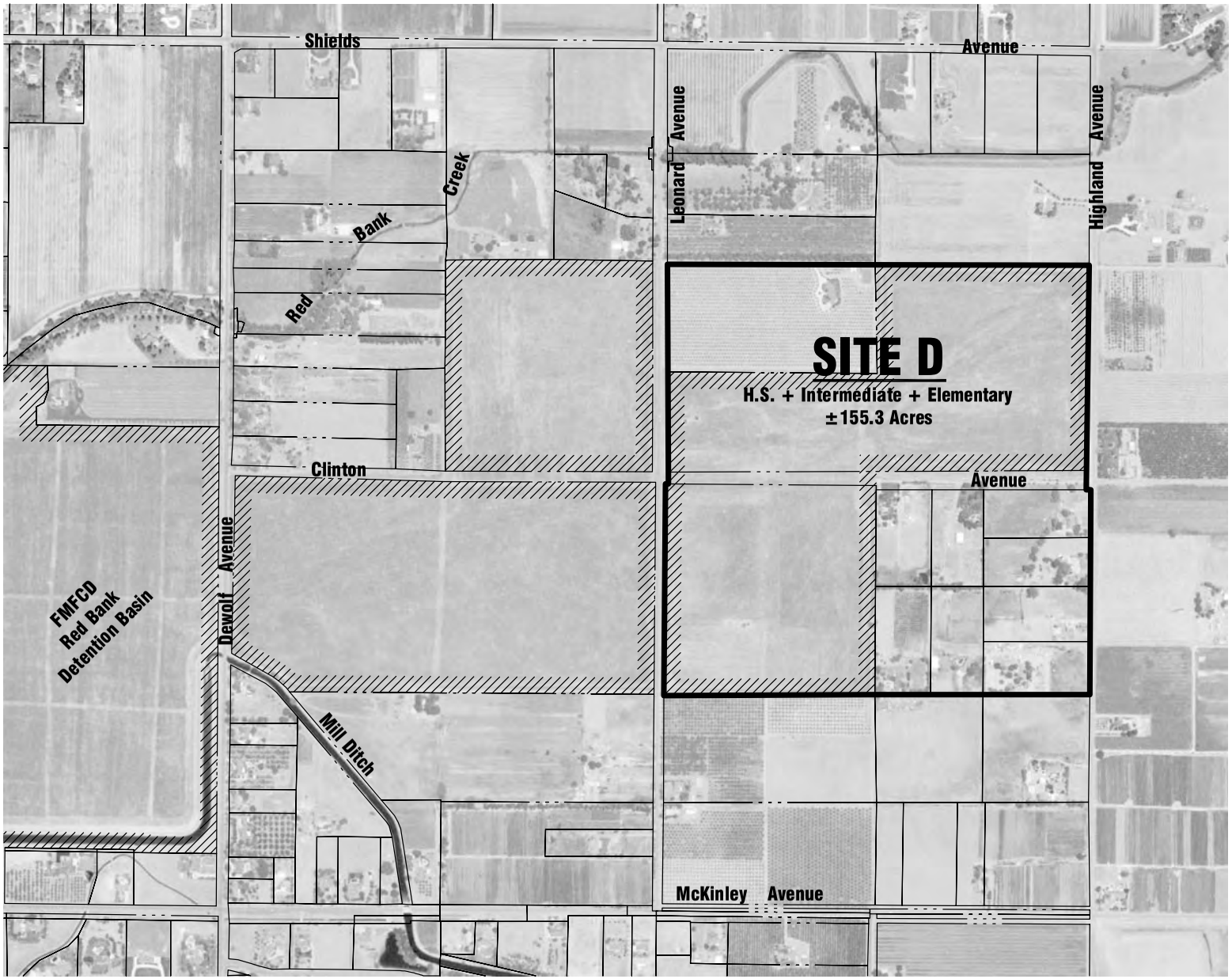


SCALE: 1"=600'

Site C
Clovis Unified School District
Fourth Educational Center Site Location Study

Blair, Church & Flynn Consulting Engineers

Paoli & Odell, Inc.



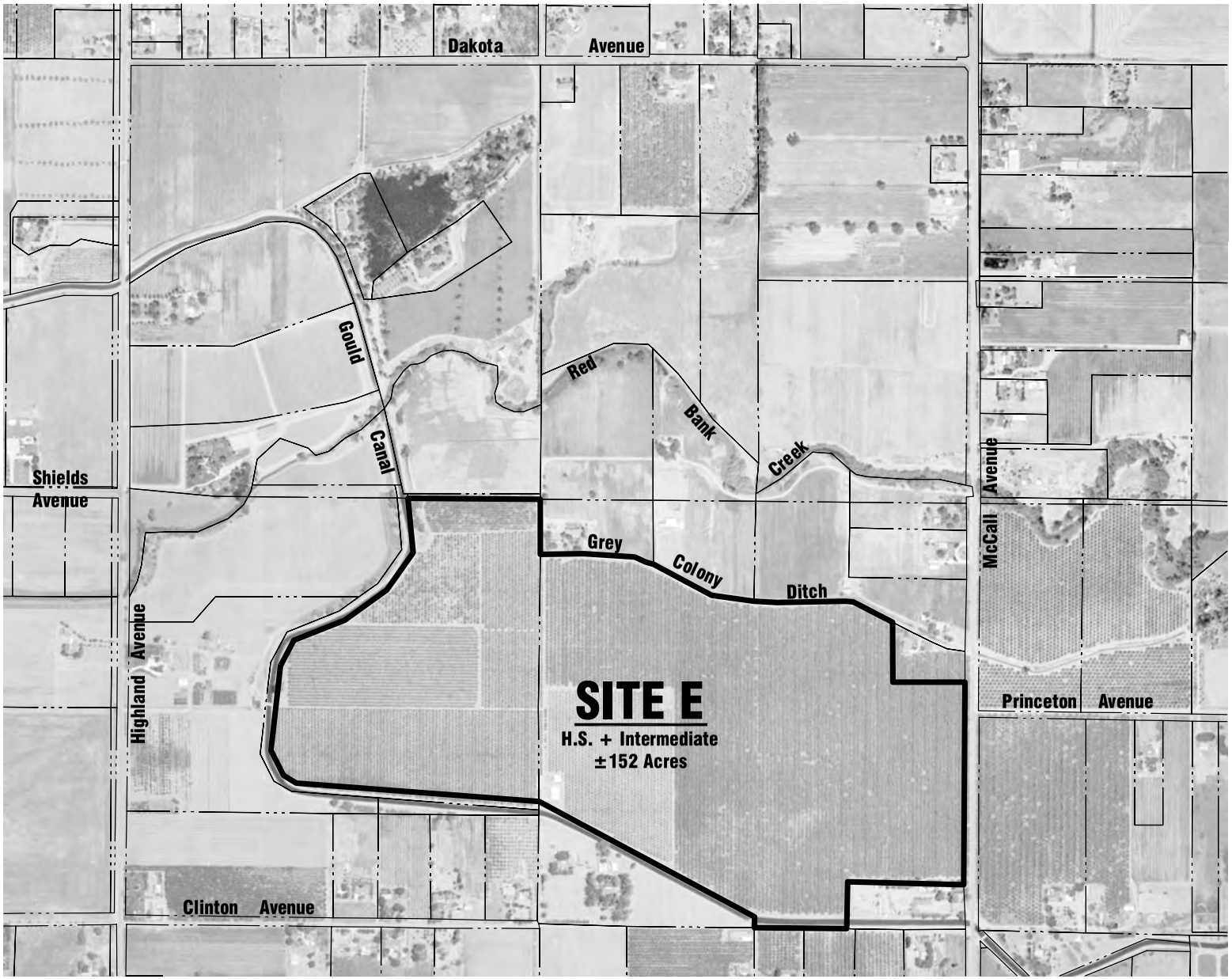
Boundary of
F.M.F.C.D. Property

SCALE:1"=600'

Site D
Clovis Unified School District
Fourth Educational Center Site Location Map

Blair, Church & Flynn Consulting Engineers

Paoli & Odell, Inc.



SCALE: 1"=600'

Site E
Clovis Unified School District
Fourth Educational Center Site Location Study

Blair, Church & Flynn Consulting Engineers

Paoli & Odell, Inc.

Appendix
I-2

EIR Authors

Clovis Unified School District 1450 Herndon Avenue Clovis, CA 93611	
Bill McGuire Associate Superintendent, Administrative Services 559/327-9110 billmcguire@cusd.com	
Walt Byrd Assistant Superintendent, Facility Services 559/327-9260 waltbyrd@cusd.com	
Environmental Impact Report Consultant Team	
Consultant	**Responsibility**
Paoli & Odell, Inc. School Facility, Environmental & City Planners 925 N Street, Suite 150 Fresno, CA 93721 Scott B. Odell, AICP 559/233-7260 sodell@paoli-odell.com Gabriel Gutierrez ggutierrez@paoli-odell.com	EIR Prime Consultant Project Manager Project Planner and Graphics
Ambient Air Quality & Noise Consulting 5314 Shelato Way Carmichael, CA 95608 Kurt Legleiter 916/359-2700 www.ambient-consulting.com	Noise and Air Quality
Blair, Church & Flynn Consulting Engineers Consulting Engineers 451 Clovis Avenue, Suite 200 Clovis, CA 93612 Michael E. Flynn, P.E. 559/326-1400 www.bcf-eng.com	Water Supply and Quality, Wastewater Collection and Treatment, and Drainage and Flooding

	Geology, Soils, and Seismic
Live Oak Associates, Inc. Ecological Consulting 49430 Road 426, Suite B Oakhurst, CA 93644 David J. Hartesveldt, B.A. 559/642-4880 www.loainc.com	Biological Resources
Peters Engineering Group Civil and Traffic Engineering 55 Shaw Avenue, Suite 220 Clovis, CA 93612 John Rowland, P.E. 559/299-1544 www.peters-engineering.com	Traffic and Transportation
Sierra Valley Cultural Planning 41845 Sierra Drive Three Rivers, CA 93271 C. Kristina Roper, M.A., RPA 559/561-3816 kroper@wildblue.net	Cultural Resources

Appendix
2-1

Benefits of the Educational Center Concept

BENEFITS OF THE EDUCATIONAL CENTER CONCEPT

Historically, school districts have provided school campuses independent from each other and geographically located throughout the community. In 1993, the Clovis Unified School District completed the Buchanan Educational Center, which consolidated three separate schools onto one educational complex. The same concept was employed by the District at the Reagan Educational Center and the recently completed Clovis North Educational Center. Because of the additional educational opportunities, financial benefit and success of the concept, the Clovis Unified School is proposing a similar project. A discussion of benefits of an educational center are discussed below.

EDUCATIONAL BENEFITS

The educational center concept offers learners quality curricular and co-curricular programs, which are enhanced by ideal facilities in close proximity to all students and teachers, "state of the art" technology, and an articulated K-12 educational team. Functioning as a comprehensive educational institution, the schools within an educational center can work collaboratively to provide effective programs and activities for student success.

An educational center minimizes the trauma associated with the critical transitions from elementary to intermediate, and from intermediate to high school. Student support services can also be expanded to more effectively address a family in need. Recognizing that each learner has unique strengths and weaknesses, the schools within the educational center will work together pooling human, physical and fiscal resources. In this setting, instructors and students can have access to a broad range of learning environments. Participants in accelerated programs can accelerate vertically or horizontally while maintaining "connectedness" with young people their own age.

The educational center concept eliminates the greatest barrier to widespread implementation of cross-age and peer tutoring – transportation. Given the close proximity of the three campuses, a variety of peer and cross-age tutoring programs can be implemented.

The close proximity of K-12 staff can create a more personal and interactive staff articulation model. Secondary staff can provide subject area expertise. Elementary staff can share strategies for classroom management, individualization, diagnosis, and integration of reading strategies across the curriculum.

Traditionally, parent involvement is robust in elementary school and declines as students progress through intermediate and high school. This gradual decline in parent participation can be checked when parents are on or around the intermediate and high school campuses. They are more likely to continue to be involved with their students' education throughout high school. Finally, the close proximity of schools in an educational center enhances K-12 support such as advisors, resources and use of facilities for co-curricular programs.

FINANCIAL BENEFITS

The financial impact of building and operating an educational center results in a significant cost savings to the District as compared to operating individual school sites. The financial savings of creating an educational center primarily relate to three areas:

- CONSTRUCTION OF OFF-SITE IMPROVEMENTS

Included in the cost of building a new school, the District must incur the expenses of many off-site improvements. Included in these off-site improvements is the installation of water and sewer lines, construction of necessary roadways, curbs, gutters and sidewalks, installation of storm drains and providing electrical service. The significant savings in the off-site improvement area results from bringing these infrastructure requirements to one site rather than making improvements to three different locations.

- EQUIPMENT ACQUISITION

The educational center concept results in significant "one-time" equipment acquisition savings. Due to recent enhancements in telecommunications technology, the three schools located at the educational center will be able to be served by a common telephone switch and communication lines.

The Food Service plan for the proposed educational center includes satelliting the intermediate and elementary programs from the new high school. The reduced equipment needed to meet the requirement of satellite kitchens results in a "one-time" savings.

- OPERATIONAL COST

Operating a three school educational center results in the opportunity to achieve annual operational savings. Transportation savings result from the ability to combine runs for various facilities and therefore eliminate transportation mileage and labor hours in providing of these services.

Maintenance and operational costs of an educational center are lower as compared to three individual school site campuses. The District intends on utilizing a common school plant supervisor for both and intermediate and high school programs to better coordinate available personnel and resources. The educational center itself will require one less plant supervisor, one less pool maintenance worker, and the equivalent of 1.5 fewer grounds positions. In addition, the non-productive time of driving from site to site to service the campus, facility and operational needs of the schools will be eliminated by the educational center concept wherein all schools are located in close proximity to each other.

The educational center concept allows for a primary electrical service instead of a secondary service resulting in the purchase of electricity at a significantly reduced rate. By purchasing electricity at the primary electrical service rate, and utilizing an uninterruptible service arrangement, it is anticipated that an annual savings of approximately $100,000 will be achieved. In the area of communications, including Data Processing and Telecommunications, significant savings are available to the District. By networking the educational center to the District office, the District will avoid equipment, connection, and monthly service charges at two additional locations.

The Food Service Program lends itself very effectively to a multi-campus site approach. The proposed educational center will be designed to facilitate a satellite operation at both the intermediate and elementary schools. This results in a saving of two positions. In addition, the cost to transport food from the preparation kitchen to the elementary and intermediate campuses will be considerably less than other satellite campuses, due to the close proximity of the facilities.

In summation, significant “one-time” savings, as well as reduced annual operational costs, will be realized from the educational center approach. These savings will “free up” additional funds for other support or instructional programs.

Appendix
6-1

Vascular Plants of the Project Site

APPENDIX A
VASCULAR PLANTS OF THE STUDY AREA

The plants species listed below were observed during the site visit on September 28, 2005. The U.S. Fish and Wildlife Service wetland indicator status of each plant has been shown following each species common name.

OBL - Obligate
FACW - Facultative Wetland
FAC - Facultative
FACU - Facultative Upland
UPL - Upland
+/- - Higher/lower end of category
NR - No review
NA - No agreement
NI - No investigation

ASTERACEAE – Sunflower Family		
Centaurea solstitialis	Yellow Star Thistle	UPL
Conyza canadensis	Horseweed	FAC
Helianthus annuus	Annual Sunflower	FAC-
Hypochaeris glabra	Smooth Cat's-ear	UPL
Lactuca serriola	Prickly Lettuce	UPL
Silybum marianum	Milk Thistle	UPL
BORAGINACEAE - Borage Family		
Amsinckia menziesii ssp. intermedia	Common Fiddleneck	UPL
BRASSICACEAE – Mustard Family		
Brassica nigra	Black Mustard	UPL
Capsella bursa-pastoris	Shepherd's Purse	FAC-
Raphanus sativus	Wild Radish	UPL
CHENOPODIACEAE – Goosefoot Family		
Salsola tragus	Russian Thistle	FACU+
EUPHORBIACEAE – Spurge Family		
Eremocarpus setigerus	Turkey Mullein	UPL
FABACEAE – Bean Family		
Trifolium hirtum	Rose Clover	FAC
GERANIACEAE - Geranium Family		
Erodium botrys	Broadleaf Filaree	UPL
Erodium cicutarium	Red Stem Filaree	UPL
Erodium moschatum	White-stem Filaree	UPL
LAMIACEAE - Mint Family		
Trichostema lanceolatum	Vinegar Weed	UPL
MAGNOLIACEAE -- Magnolia Family		
Magnolia sp	Magnolia	UPL
MALVACEAE – Mallow Family		
Malva sp.	Mallow	UPL
MELIACEAE -- Mahogany Family		
Melia azedarach	Texas Umbrella Tree	UPL
MYRTACEAE - Myrtle Family		
Eucalyptus sp.	Eucalyptus	UPL

OLEACEAE-Olive Family		
Olea europaea	European Olive	UPL
PINACEAE – Pine Family		
Pinus Sp.	Pine	UPL
Tsuga	Hemlock	UPL
PLATANACEAE -- Sycamore Family		
Platanus racemosa	California Sycamore	FACW
POACEAE – Grass Family		
Avena fatua	Wild Oat	UPL
Bromus diandrus	Ripgut Brome	UPL
Bromus hordeaceus	Soft Chess	FACU-
Cynodon dactylon	Bermuda Grass	FAC
Hordeum leporinum	Hare Barley	NI
POLYGONACEAE – Buckwheat Family		
Polygonum arenastrum	Common Knotweed	UPL
Rumex crispus	Curly Dock	FACW-
PORTULACACEAE – Purslane Family		
Claytonia perfoliata	Miner's Lettuce	FAC
ROSACEAE - Rose Family		
Prunus dulcis	Almond	UPL
Prunus sp.	Stone Fruit	UPL
Rosa sp.	Rose	
RUTACEAE -- Rue Family		
Citrus sp.	Citrus	UPL
SALICACEAE - Willow Family		
Populus fremontii	Fremont's Cottonwood	FACW
Salix sp.	Willow	
TAXODIACEAE -- Bald Cypress Family		
Sequoia sempervirens	Coast Redwood	UPL
ZYGOPHYLLACEAE – Caltrop Family		
Tribulus terrestris	Punctureviné	UPL

Appendix
6-2

Terrestrial Vertebrates Using or Potentially Using the Project Site

APPENDIX B: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE STUDY AREA

The species listed below are those that may reasonably be expected to use the habitats of the study area routinely from time to time. The list was not intended to include birds that are vagrants or occasional transients. Terrestrial vertebrate species observed on or above the study area on September 28, 2005 have been noted with an asterisk.

CLASS: AMPHIBIA
ORDER: SALIENTIA (Frogs and Toads)
FAMILY: BUFONIDAE (True Toads)
Western Toad (*Bufo boreas*)
FAMILY: HYLIDAE (Treefrogs and Relatives)
Pacific Treefrog (*Pseudacris regilla*)

CLASS: REPTILIA
ORDER: SQUAMATA (Lizards and Snakes)
SUBORDER: SAURIA (Lizards)
FAMILY: IGUANIDAE (Iguanids)
Western Fence Lizard (*Sceloporus occidentalis*)
Common Side-Blotched Lizard (*Uta stansburiana*)
FAMILY: SCINCIDAE (Skinks)
Gilbert Skink (*Eumeces gilberti*)
FAMILY: ANGUIDAE (Alligator Lizards and Relatives)
Southern Alligator Lizard (*Gerrhonotus multicarinatus*)
SUBORDER: SERPENTES (Snakes)
FAMILY: COLUBRIDAE (Colubrids)
Coachwhip (*Masticophis flagellum*)
Gopher Snake (*Pituophis melanoleucus*)
Common Kingsnake (*Lampropeltis getulus*)
Long-Nosed Snake (*Rhinocheilus lecontei*)
Western Rattlesnake (*Crotalus viridis*)

CLASS: AVES
ORDER: FALCONIFORMES (Vultures, Hawks, and Falcons)
FAMILY: CATHARTIDAE (American Vultures)
Turkey Vulture (*Cathartes aura*)
FAMILY: ACCIPITRIDAE (Hawks, Old World Vultures, and Harriers)
White-tailed Kite (*Elanus caeruleus*)
Northern Harrier (*Circus cyaneus*)
Sharp-shinned Hawk (*Accipiter striatus*)
*Cooper's Hawk (*Accipiter cooperi*)
Red-shouldered Hawk (*Buteo lineatus*)
Swainson's Hawk (*Buteo swainsoni*)
*Red-tailed Hawk (*Buteo jamaicensis*)
Ferruginous Hawk (*Buteo regalis*)

Golden Eagle (*Aquila chrysaetos*)

FAMILY: FALCONIDAE (Caracaras and Falcons)

*American Kestrel (*Falco sparverius*)

Merlin (*Falco columbarius*)

Prairie Falcon (*Falco mexicanus*)

ORDER: GALLIFORMES (Megapodes, Currassows, Pheasants, and Relatives)

FAMILY: PHASIANIDAE (Quails, Pheasants, and Relatives)

California Quail (*Callipepla californica*)

ORDER: CHARADRIIFORMES (Shorebirds, Gulls, and relatives)

FAMILY: CHARADRIIDAE (Plovers and relatives)

Killdeer (*Charadrius vociferus*)

ORDER: COLUMBIFORMES (Pigeons and Doves)

FAMILY: COLUMBIDAE (Pigeons and Doves)

*Rock Dove (*Columba livia*)

*Mourning Dove (*Zenaida macroura*)

ORDER: STRIGIFORMES (Owls)

FAMILY: TYTONIDAE (Barn Owls)

Barn Owl (*Tyto alba*)

FAMILY: STRIGIDAE (Typical Owls)

Western Screech Owl (*Otus kennicottii*)

Great Horned Owl (*Bubo virginianus*)

Long-eared Owl (*Asio otus*)

Short-eared Owl (*Asio flammeus*)

ORDER: CAPRIMULGIFORMES (Goatsuckers and Relatives)

FAMILY: CAPRIMULGIDAE (Goatsuckers)

Lesser Nighthawk (*Chordeiles acutipennis*)

Common Poorwill (*Phalaenoptilus nuttalli*)

ORDER: APODIFORMES (Swifts and Hummingbirds)

FAMILY: TROCHILIDAE (Hummingbirds)

Black-chinned Hummingbird (*Archilochus alexandri*)

Anna's Hummingbird (*Calypte anna*)

Rufous Hummingbird (*Selasphorus rufus*)

Allen's Hummingbird (*Selasphorus sasin*)

ORDER: PICIFORMES (Woodpeckers and Relatives)

FAMILY: PICIDAE (Woodpeckers and Wrynecks)

Red-Breasted Sapsucker (*Sphyrapicus ruber*)

Downy Woodpecker (*Picoides pubescens*)

*Northern Flicker (*Colaptes auratus*)

ORDER: PASSERIFORMES (Perching Birds)

FAMILY: TYRANNIDAE (Tyrant Flycatchers)

Willow Flycatcher (*Empidonax traillii*)

Ash-throated Flycatcher (*Myiarchus cinerascens*)

Black Phoebe (*Sayornis nigricans*)

*Say's Phoebe (*Sayornis saya*)

Western Kingbird (*Tyrannus verticalis*)

FAMILY: LANIIDAE (Shrikes)

Loggerhead Shrike (*Lanius ludovicianus*)

FAMILY: CORVIDAE (Jays, Magpies and Crows)

*Western Scrub-Jay (*Aphelocoma californica*)

Yellow-Billed Magpie (*Pica nuttallii*)

*American Crow (*Corvus brachyrhynchos*)

Common Raven (*Corvus corax*)

FAMILY: ALAUDIDAE (Larks)

Horned Lark (*Eremophila alpestris*)

FAMILY: HIRUNDINIDAE (Swallows)

Tree Swallow (*Tachycineta bicolor*)

Violet-green Swallow (*Tachycineta thalassina*)

Northern Rough-winged Swallow (*Stelgidopteryx serripennis*)

Cliff Swallow (*Petrochelidon pyrrhonota*)

Barn Swallow (*Hirundo rustica*)

FAMILY: AEGITHALIDAE (Bushtit)

Bushtit (*Psaltriparus minimus*)

FAMILY: TROGLODYTIDAE (Wrens)

House Wren (*Troglodytes aedon*)

FAMILY: MUSCICAPIDAE (Old World Warblers, Gnatcatchers, Kinglets, Thrushes, Bluebirds, and Wrentit)

*Ruby-crowned Kinglet (*Regulus calendula*)

Mountain Bluebird (*Sialia currucoides*)

Hermit Thrush (*Catharus guttatus*)

American Robin (*Turdus migratorius*)

FAMILY: MIMIDAE (Mockingbirds and Thrashers)

*Northern Mockingbird (*Mimus polyglottos*)

FAMILY: STURNIDAE (Starlings)

*European Starling (*Sturnus vulgaris*)

FAMILY: MOTACILLIDAE (Wagtails and Pipits)

American Pipit (*Anthus rubescens*)

FAMILY: BOMBYCILLIDAE (Waxwings)

Cedar Waxwing (*Bombycilla cedrorum*)

FAMILY: EMBERIZIDAE (Wood Warblers, Sparrows, Blackbirds, and Relatives)

*Yellow-rumped Warbler (*Dendroica coronata*)

Black-headed Grosbeak (*Pheucticus melanocephalus*)

Blue Grosbeak (*Guiraca caerulea*)

Lazuli Bunting (*Passerina amoena*)

California Towhee (*Pipilo crissalis*)

Chipping Sparrow (*Spizella passerina*)

Vesper Sparrow (*Pooecetes gramineus*)

Lark Sparrow (*Chondestes grammacus*)

Savannah Sparrow (*Passerculus sandwichensis*)

Fox Sparrow (*Passerella illiaca*)

Golden-crowned Sparrow (*Zonotrichia atricapilla*)

*White-crowned Sparrow (*Zonotrichia leucophrys*)

Dark-eyed Junco (*Junco hyemalis*)
Red-winged Blackbird (*Agelaius phoeniceus*)
Tricolored Blackbird (*Agelaius tricolor*)
*Western Meadowlark (*Sturnella neglecta*)
*Brewer's Blackbird (*Euphagus cyanocephalus*)
Brown-headed Cowbird (*Molothrus ater*)
Bullock's Oriole (*Icterus bullocki*)

FAMILY: FRINGILLIDAE (Finches)

*House Finch (*Carpodacus mexicanus*)
Pine Siskin (*Carduelis pinus*)
Lesser Goldfinch (*Carduelis psaltria*)
American Goldfinch (*Carduelis tristis*)

FAMILY: PASSERIDAE (Old World Sparrows)

House Sparrow (*Passer domesticus*)

CLASS: MAMMALIA

ORDER: MARSUPIALIA (Opossums, Kangaroos, and Relatives)

FAMILY: DIDELPHIDAE (Opossums)

Virginia Opossum (*Didelphis virginiana*)

ORDER: INSECTIVORA (Shrews and Moles)

FAMILY: TALPIDAE (Moles)

Broad-footed Mole (*Scapanus latimanus*)

ORDER: CHIROPTERA (Bats)

FAMILY: VESPERTILIONIDAE (Vespertilionid Bats)

Little Brown Myotis (*Myotis lucifugus*)
Yuma Myotis (*Myotis yumanensis*)
Long-eared Myotis, (*Myotis evotis*)
Fringed Myotis (*Myotis thysanodes*)
Long-legged Myotis (*Myotis volans*)
California Myotis (*Myotis californicus*)
Small-footed Myotis (*Myotis leibii*)
Western Pipistrelle (*Pipistrellus hesperus*)
Big Brown Bat (*Eptesicus fuscus*)
Red Bat (*Lasiurus borealis*)
Hoary Bat (*Lasiurus cinereus*)
Spotted Bat (*Euderma maculatum*)
Townsend's Big-eared Bat (*Plecotus townsendii*)
Pallid Bat (*Antrozous pallidus*)

FAMILY: MOLOSSIDAE (Free-tailed Bat)

Brazilian Free-tailed Bat (*Tadarida brasiliensis*)
Western Mastiff Bat (*Eumops perotis*)

ORDER: LAGOMORPHA (Rabbits, Hares, and Pikas)

FAMILY: LEPORIDAE (Rabbits and Hares)

Desert Cottontail (*Sylvilagus audubonii*)
Black-tailed Hare (*Lepus californicus*)

ORDER: RODENTIA (Squirrels, Rats, Mice, and Relatives)

FAMILY: SCIURIDAE (Squirrels, Chipmunks and Marmots)
*California Ground Squirrel (*Spermophilus beecheyi*)
FAMILY: GEOMYIDAE (Pocket Gophers)
*Botta's Pocket Gopher (*Thomomys bottae*)
FAMILY: CRICETIDAE (Deer Mice, Voles, and Relatives)
Western Harvest Mouse (*Reithrodontomys megalotis*)
Deer Mouse (*Peromyscus maniculatus*)
California Vole (*Microtus californicus*)
FAMILY: MURIDAE (Old World Rats and Mice)
Black Rat (*Rattus rattus*)
Norway Rat (*Rattus norvegicus*)
House Mouse (*Mus musculus*)
ORDER: CARNIVORA (Carnivores)
FAMILY: CANIDAE (Foxes, Wolves, and Relatives)
Coyote (*Canis latrans*)
Gray Fox (*Urocyon cinereoargenteus*)
FAMILY: PROCYONIDAE (Raccoons and Relatives)
Raccoon (*Procyon lotor*)
FAMILY: MUSTELIDAE (Weasels and Relatives)
Long-Tailed Weasel (*Mustela frenata*)
American Badger (*Taxidea taxus*)
FAMILY: MEPHITIDAE (Skunks)
Western Spotted Skunk (*Spilogale gracilis*)
Striped Skunk (*Mephitis mephitis*)
FAMILY: FELIDAE (Cats)
Feral Cat (*Felis catus*)

Appendix

6-3

Selected Photographs of the Project Site

Selected Photographs of the Project Site

Photo 1. Pasture

Photo 2. Orchard

Photo 3. Residence at North End of the Study Area

Photo 4. View of Mature Trees on Several Rural Residential Lots at Southeast Corner of the Study Area

Appendix
6-4

List of Special Status Species That Occur or Potentially Occur within the Project Site

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT OCCUR OR MAY OCCUR IN THE VICINITY OF THE PROPOSED CLOVIS FOURTH EDUCATIONAL CENTER.

PLANTS (adapted from CNDDB 2005 and CNPS 2001)

Species Listed as Threatened or Endangered

Species	Status	Habitat	Occurrence in the Study Area
Hartweg's Golden Sunburst (*Pseudobahia bahiifolia*)	FE, CE, CNPS 1B	Occurs in grasslands of the western foothills of the Sierra Nevada in heavy clay soils of the Porterville, Cibo, Mt. Olive and Centerville soil series. Blooms March-April.	**Absent.** Undisturbed soils of suitable type for this species are absent from the study area. This species has been observed approx. 15 air miles northwest of the study near the town of Friant (CDFG 2005).
Keck's Checkerbloom (*Sildalcea keckii*)	FE, CNPS 1B	Cismontane woodland, valley and foothill grassland with serpentine and/or clay soils. Blooms April-May.	**Absent.** Undisturbed soils of suitable type for this species are absent from the study area. The nearest location of this species to the study area is approx. 15 miles to the northeast near Tivy Mtn. and Piedra Dam (CDFG 2005).
San Joaquin Adobe Sunburst (*Pseudobahia peirsonii*)	FT, CE CNPS 1B	Occurs in grasslands of the western foothills of the Sierra Nevada in heavy clay soils of the Porterville, Cibo, Mt. Olive and Centerville series. Blooms March-April	**Absent.** Undisturbed soils of suitable type for this species are absent from the study area. The nearest location of this species to the study area is 2.5 miles to the northeast on the east side of Academy Avenue (CDFG 2005).
Hairy Orcutt Grass (*Orcuttia pilosa*)	FE, CE, CNPS 1B	California's Central Valley Pools. Requires deep pools with prolonged periods of inundation. Blooms May-September.	**Absent.** Vernal pools are not present in the study area. This species has been observed approx. 14 air miles northwest of the study area near Hwy 41 (CDFG 2005).
San Joaquin Orcutt Grass (*Orcuttia inaequalis*)	FE, CE CNPS 1B	Vernal pools California's Central Valley. Requires deep pools with prolonged periods of inundation. Blooms April-September.	**Absent.** Vernal pools are not present in the study area. The nearest known location of this species is approximately 12 air miles northwest near the intersection of Friant Road and Hwy 41 (CDFG 2005).
Greene's Tuctoria (*Tuctoria greenei*)	FT, CR CNPS 1B	Vernal pools of California's Central Valley. Requires deep pools with prolonged periods of inundation. Blooms May-September.	**Absent.** Vernal pools are not present in the study area. This species was once observed 3.5 air miles east of the study area near the intersection of Belmont Ave. and Academy. This population is
Succulent Owl's Clover (*Castelleja campestris succulenta*)	FT, CE CNPS 1B	Vernal Valley.	location of this species to the study area is approx. 6.5 miles to the north (CDFG 2005).

CNPS LISTED PLANTS

Madera Leptosiphon (*Loeptosiphon serrulatus*)	CNPS 1B	Occurs in cismontane woodland, foothill non-native grasslands and lower montane forest from Madera County south through Kern County. Blooms April-May	**Absent.** Undisturbed soils of suitable type for this species are absent from the study area. Nearest occurrence is 15 air miles near the south shore of Millerton Lake (CDFG 2005).

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT OCCUR OR MAY OCCUR IN THE VICINITY OF THE PROPOSED CLOVIS FOURTH EDUCATIONAL CENTER.

CNPS LISTED PLANTS (cont.)

Species	Status	Habitat	Occurrence in the Study Area
Spiny-sepaled Button Celery (*Eryngium spinosepalum*)	CNPS 1B	Vernal pools California's Central Valley. Blooms in April-May	**Absent.** Vernal pools are not present in the study area. The nearest location of this species to the study area is 3 to 4 air miles to the east along both sides of Academy Ave. (Live Oak Associates, Inc. observation in 2003).
Sanford's Arrowhead (*Sagittaria sanfordii*)	CNPS 1B	Freshwater marshes, pond margins, slow moving rivers, irrigation canals of California's Central Valley and low Sierra Foothills. Blooms May-October.	**Absent.** Habitat required for this species was not present in the study area. However, this species was observed during the field survey approximately 200 meters north of the study area in Redbank Slough.

ANIMALS (adapted from CNDDB 2005)

Species Listed as Threatened or Endangered

Species	Status	Habitat	*Occurrence in the Study Area
Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)	FT	Found in vernal pools of California's Central Valley.	**Absent.** Vernal pools required by this species are absent from the study area.
Vernal Pool Tadpole Shrimp (*Lepidurus packardi*)	FE	Found in deep vernal pools of California.	**Absent.** Vernal pools required by this species are absent from the study area.
Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)	FT	Lives in mature elderberry shrubs of California's Central Valley and Sierra Foothills.	**Absent.** Elderberry plants were not observed within or adjacent to the study area.
California Tiger Salamander (*Ambystoma californiense*)	FT	Requires vernal pools for breeding and rodent burrows in annual grasslands for refuge.	**Unlikely.** Breeding habitat was absent within the study area and on adjacent lands. Aestivation habitat in the form of rodent burrows was present on site.
California Red-legged Frog (*Rana aurora draytonii*)	FT, CSC	Perennial rivers, creeks and stock ponds of the Coast Range and northern Sierra foothills with overhanging vegetation.	**Absent.** The site is outside of the current known range of the red-legged frog. This species appears to have been extirpated from Fresno County.
Swainson's Hawk (*Buteo swainsoni*)	CT	Uncommon resident and migrant in the Central Valley. Forages in grasslands and fields close to riparian areas.	**Unlikely.** The study area provides marginal foraging habitat and this species is rarely seen in this part of Fresno County.
Peregrine Falcon (*Falco peregrinus*)	CE	Individuals breed on cliffs in the Sierra Nevada or in coastal habitats; occurs in many habitats of the state during migration and winter.	**Unlikely.** The study area provides marginal foraging habitat for transients and migrants. Suitable breeding habitat is absent.
Willow Flycatcher (*Empidonax traillii*)	CT	Breeds in willow thickets found in montane meadows of the Sierra Nevada.	**Unlikely.** This species would at most pass through the region during migration. The site, however, provides little cover for migrating individuals.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT OCCUR OR MAY OCCUR IN THE VICINITY OF THE PROPOSED CLOVIS FOURTH EDUCATIONAL CENTER.

ANIMALS (Cont.)

Species Listed as Threatened or Endangered

Species	Status	Habitat	*Occurrence in the Study Area
Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)	CE	Frequents valley foothill and desert riparian habitats in scattered locations in California	**Absent.** The study area provides no breeding or foraging habitat for this species. Although this species was reported only a mile south of the study area in the early 1900's (CDFG 2005), this species has not been sited in the area for many years and is presumed extirpated from the project vicinity.
Fresno Kangaroo Rat (*Dipodomys nitratoides exilis*)	FE, CE	Frequents alkali scrub and herbaceous habitats with scattered shrubs in the southwestern San Joaquin Valley.	**Absent.** The study area provides no suitable breeding and foraging habitat for this species. The site appears to be outside of the current range of this species.
San Joaquin Kit Fox (*Vulpes macrotis mutica*)	FE, CT	Frequents desert alkali scrub, annual grasslands and may forage in adjacent agricultural habitats.	**Unlikely.** The study area provides marginal breeding and foraging habitat for kit foxes. The study area is outside of the known range of the kit fox.

ANIMALS (adapted from CNDDB 2005)

State and Federal Species of Special Concern

Foothill Yellow-legged Frog (*Rana boylii*)	CSC	Frequents partly shaded, shallow streams and riffles with rocky substrate in a variety of habitats.	**Absent.** Aquatic habitats required by this species were absent in the study area..
Western Spadefoot Toad (*Scaphoipus hammondii*)	CSC	Frequents annual grasslands and foothill hardwood woodlands; requires vernal pools or other temporary wetlands for breeding.	**Unlikely.** No vernal pools or temporary wetlands were present in the study area and adjacent lands. Aestivation habitat in the form of rodent burrows was present on site.
Western Pond Turtle (*Clemmys marmorata*)	CSC	Frequents suitable aquatic habitats throughout California.	**Absent.** Aquatic habitats required by this species were absent in the study area.
California Horned Lizard (*Phrynosoma coronatum*)	CSC	Frequents sandy washes with scattered shrubs, grasslands, scrublands, and oak woodlands of Central California.	**Unlikely.** The study area provides unsuitable to marginal habitat for this species due to the effects of filling, grading, and agricultural practices on site.
White-tailed Kite (*Elanus caeruleus*)	CFP	Open grasslands and agricultural areas throughout central California.	**Possible.** The study area provides foraging habitat. Trees on site could provide nesting habitat.
Golden Eagle (*Aquila chrysaetos*)	CSC	Frequents rolling foothills, mountain areas, sage-juniper flats and desert habitats; requires cliffs or large trees for nesting.	**Possible.** The study area provides foraging habitat for this species, but no nesting habitat.
Northern Harrier (*Circus cyaneus*)	CSC	Frequents, grasslands, open rangelands, freshwater and emergent wetlands.	**Possible.** The study area provides suitable foraging habitat, but provides no habitat for nesting.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT OCCUR OR MAY OCCUR IN THE VICINITY OF THE PROPOSED CLOVIS FOURTH EDUCATIONAL CENTER.

ANIMALS (adapted from CNDDB 2005)

State and Federal Species of Special Concern

Species	Status	Habitat	*Occurrence in the Study Area
Sharp-shinned Hawk (*Accipiter striatus*)	CSC	Breeds in mixed conifer forests of the northern Sierra Nevada, but winters in a variety of Calif. habitats.	**Possible.** The study area provides suitable foraging habitat but no breeding habitat for this species.
Cooper's Hawk (*Accipiter cooperii*)	CSC	Breeds in oak woodlands, riparian forests and mixed conifer forests of the Sierra Nevada, but winters in a variety of California lowland woodland habitats.	**Present.** An individual was observed flying over the study area during one of LOA's site surveys. The study area provides suitable foraging and breeding habitat.
Ferruginous Hawk (*Buteo regalis*)	CSC	Breeds in the Pacific Northwest and Canada, but winters in a variety of Calif. habitats, including grass-lands, savannahs, wetlands, etc.	**Possible.** The study area provides seasonal (winter) foraging habitat for this species. The study area is outside the species breeding range.
Merlin (*Falco columbarius*)	CSC	Breeds in Canada, but winters in a variety of Calif. habitats, including grasslands, savannahs and wetlands.	**Possible.** The study area provides suitable foraging habitat for winter transients.
Prairie Falcon (*Falco mexicanus*)	CSC	Frequents annual grasslands to alpine meadows; requires cliffs or rock outcroppings for nesting.	**Possible.** The study area provides suitable foraging habitat, but no nesting habitat for this species.
Burrowing Owl (*Athene cunicularia*)	CSC	Frequents open, dry grasslands, deserts and ruderal areas; requires rodent burrows for nesting and roosting cover.	**Possible.** The study area provides suitable habitat for this species. Many rodent burrows were present in the study area at the time of the field survey.
Long-eared Owl (*Asio otus*)	CSC	Frequents riparian woodlands and forests of California.	**Unlikely.** The study area provides marginal breeding and foraging habitat for this species.
Short-eared Owl (*Asio flammeus*)	CSC	Frequents marshes, grasslands, irrigated lands, dunes and other treeless habitats of the Central Valley and western Sierra Nevada foothills.	**Unlikely.** The study area provides foraging habitat for this species and marginal breeding habitat is present in the form of rodent burrows.
Loggerhead Shrike (*Lanius iudovicianus*)	CSC	Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover. Can often be found in cropland.	**Likely.** This species was observed roosting in an almond tree 5 miles east of the study area (Live Oak Associates, Inc. observation in 2004). The study area provides suitable foraging and nesting habitat.
California Horned Lark (*Eremophila alpestris actia*)	CSC	Frequents a variety of open habitats where trees and shrubs are absent; requires grasslands and fallow fields for nesting.	**Likely.** Pasturelands on site provide suitable foraging habitat and nesting habitat.
Yellow Warbler (*Dendroica petechia brewster*)	CSC	Frequents riparian deciduous habitats of alder, willow and cottonwoods: requires forests with heavy brush under story for nesting.	**Absent.** The study area provides unsuitable breeding and foraging habitat for this species.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT OCCUR OR MAY OCCUR IN THE VICINITY OF THE PROPOSED CLOVIS FOURTH EDUCATIONAL CENTER.

ANIMALS (adapted from CNDDB 2005)

State and Federal Species of Special Concern

Species	Status	Habitat	*Occurrence in the Study Area
Tri-colored Blackbird (*Agelaius tricolor*)	CSC	Frequents grassland and cropland habitats; requires proximity to fresh water and emergent wetland vegetation with dense cattails and thickets of willow for nesting.	**Possible.** The study area provides suitable foraging habitat for this species. Nesting habitat was absent.
Townsend's Western Big-eared Bat (*Corynorhinus townsendii townsendii*)	CSC	Frequents all but subalpine and alpine habitats; requires buildings, mines, caves or tunnels for roosting and nesting.	**Possible.** The study area provides suitable foraging habitat for this species. Suitable roosting habitat may be available in onsite buildings.
Pallid Bat (*Antrozous pallidus*)	CSC	Grasslands, chaparral, wood-lands, and forests of California; most common in dry rocky open areas providing roosting opportunities.	**Possible.** The site provides suitable foraging habitat. Suitable roosting habitat may be found in residential buildings and hollowed trees on site.
Spotted Bat (*Euderma maculatum*)	CSC	Found in a variety of habitats from arid desert and grassland to mixed conifer forest.	**Possible.** The site could be used for foraging, suitable roosting habitat is absent
Western Mastiff Bat (*Eumops perotis*)	CSC	Occurs in a variety of habitats from woodlands to grasslands along central and southern coast and the Central Valley.	**Possible.** This species may forage on the site, but roosting habitat is absent.
American Badger (*Taxidea taxus*)	CSC	This species inhabits open and dry sections of grasslands, shrub, and forest habitats with friable soil.	**Possible.** Past filling and grading plus agricultural activity on the study area has resulted in compromised foraging and breeding habitat.

OCCURRENCE EXPLANATIONS

*Present: Species observed on the site at time of field surveys or during recent past.
Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.
Possible: Species not observed on the site, but it could occur there from time to time.
Unlikely: Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient.
Absent: Species not observed on the site, and precluded from occurring there because habitat requirements not met.

STATUS CODES

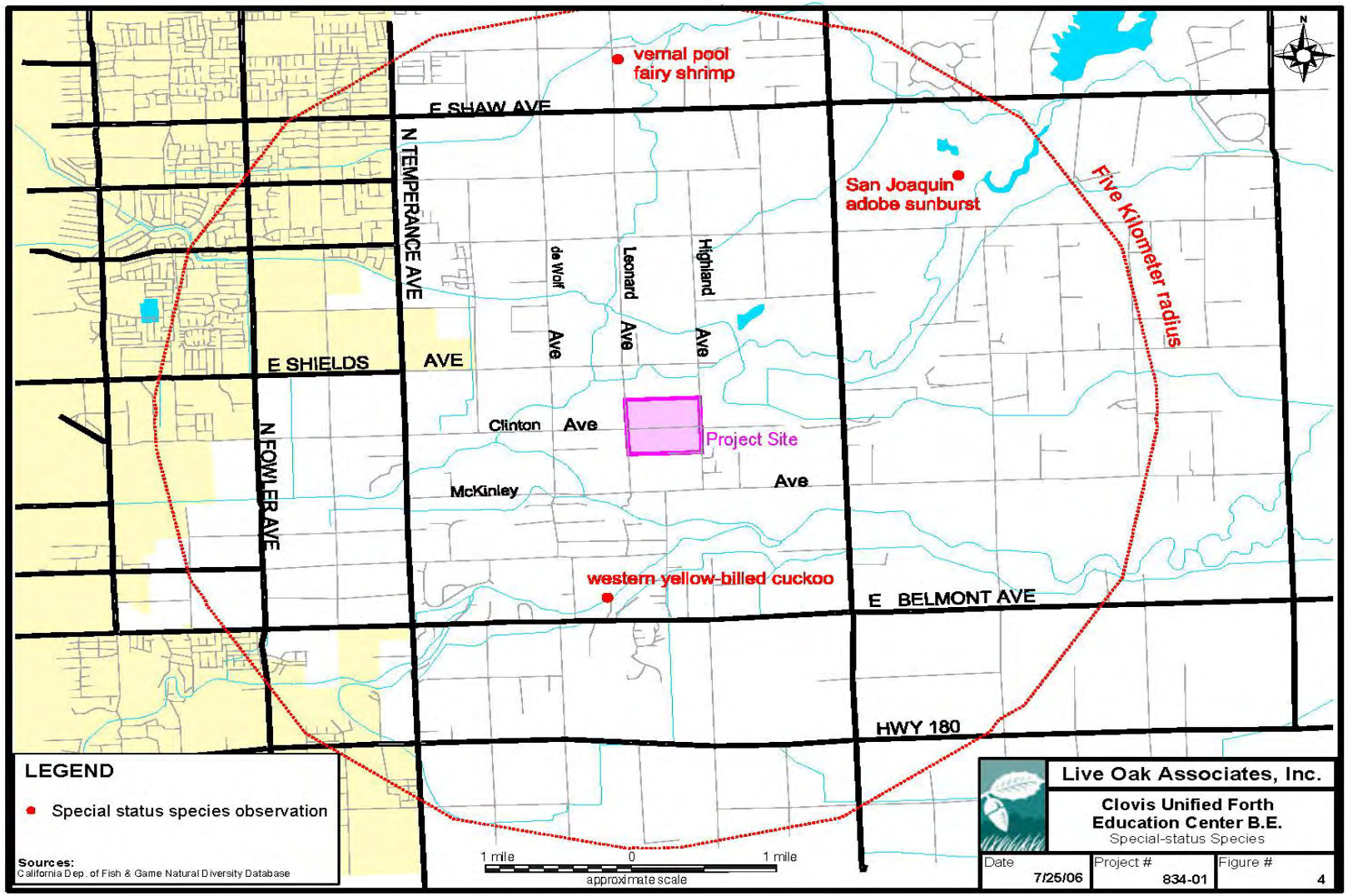
FE Federally Endangered
FT Federally Threatened
FPE Federally Endangered (Proposed)
FC Federal Candidate

CE California Endangered
CT California Threatened
CR California Rare
CSC California Species of Special Concern
CNPS 1B Plant is threatened, endangered California and elsewhere

Appendix

6-5

Special Status Species Occurring within Five Miles of the Project Site (Map)


vernal pool fairy shrimp
E SHAW AVE
N TEMPERANCE AVE
San Joaquin adobe sunburst
Five Kilometer radius
de Wolf Ave
Leonard Ave
Highland Ave
E SHIELDS AVE
Clinton Ave
Project Site
McKinley Ave
N FOWLER AVE
western yellow-billed cuckoo
E BELMONT AVE
HWY 180
N
LEGEND
Special status species observation
Sources:
California Dep. of Fish & Game Natural Diversity Database
1 mile
0
1 mile
approximate scale
Live Oak Associates, Inc.
Clovis Unified Forth Education Center B.E.
Special-status Species
Date
7/25/06
Project #
834-01
Figure #
4

Appendix
9-1

Traffic Modeling

Volumes for: Thursday, April 12, 2007 City: Fresno Project #: 07-8061-001

Location: Leonard Ave North of Shields

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	0		0					12:00	4		4				
00:15	1		0					12:15	11		1				
00:30	0		0					12:30	9		2				
00:45	0	1	0	0			1	12:45	3	27	8	15			42
01:00	0		0					13:00	7		3				
01:15	0		2					13:15	5		4				
01:30	0		0					13:30	3		4				
01:45	1	1	2	4			5	13:45	7	22	0	11			33
02:00	0		0					14:00	3		5				
02:15	0		0					14:15	4		6				
02:30	0		0					14:30	15		10				
02:45	1	1	0	0			1	14:45	75	97	12	33			130
03:00	0		0					15:00	12		15				
03:15	0		0					15:15	7		7				
03:30	0		0					15:30	8		4				
03:45	0	0	0	0				15:45	10	37	2	28			65
04:00	1		0					16:00	4		3				
04:15	0		0					16:15	5		6				
04:30	0		0					16:30	7		6				
04:45	1	2	0	0			2	16:45	11	27	13	28			55
05:00	2		0					17:00	12		5				
05:15	0		1					17:15	11		8				
05:30	1		1					17:30	6		3				
05:45	1	4	1	3			7	17:45	10	39	6	22			61
06:00	3		1					18:00	10		4				
06:15	6		3					18:15	3		4				
06:30	3		2					18:30	7		3				
06:45	2	14	6	12			26	18:45	5	25	3	14			39
07:00	10		34					19:00	3		3				
07:15	52		82					19:15	2		1				
07:30	69		50					19:30	5		2				
07:45	12	143	14	180			323	19:45	1	11	1	7			18
08:00	3		9					20:00	2		1				
08:15	3		9					20:15	1		1				
08:30	4		2					20:30	0		0				
08:45	5	15	5	25			40	20:45	3	6	1	3			9
09:00	7		6					21:00	1		0				
09:15	7		8					21:15	2		2				
09:30	5		4					21:30	0		0				
09:45	8	27	5	23			50	21:45	1	4	0	2			6
10:00	5		6					22:00	1		0				
10:15	5		3					22:15	0		0				
10:30	1		6					22:30	1		1				
10:45	2	13	5	20			33	22:45	0	2	0	1			3
11:00	2		3					23:00	0		0				
11:15	3		1					23:15	2		0				
11:30	6		5					23:30	1		0				
11:45	2	13	4	13			26	23:45	0	3	0	0			3
Total Vol.		234		280			**514**			300		164			**464**

Daily Totals

NB	SB	EB	WB	Combined
534	444			**978**

	AM			PM		
Split %	45.5%	54.5%	**52.6%**	64.7%	35.3%	**47.4%**
Peak Hour	07:00	07:00	**07:00**	14:30	14:30	**14:30**
Volume	143	180	**323**	109	44	**153**
P.H.F.	0.52	0.55	**0.60**	0.38	0.73	**0.44**

Volumes for: Thursday, April 12, 2007 City: Fresno Project #: 07-8061-002

Location: Leonard Ave South of Shields

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	0		0					12:00	2		2				
00:15	1		0					12:15	6		1				
00:30	0		0					12:30	4		3				
00:45	0	1	0	0			1	12:45	3	15	7	13			28
01:00	0		0					13:00	4		2				
01:15	0		0					13:15	6		5				
01:30	0		0					13:30	1		3				
01:45	0	0	0	0				13:45	4	15	2	12			27
02:00	0		0					14:00	2		5				
02:15	0		0					14:15	2		9				
02:30	0		0					14:30	9		7				
02:45	1	1	0	0			1	14:45	43	56	7	28			84
03:00	0		0					15:00	12		11				
03:15	0		0					15:15	6		5				
03:30	0		0					15:30	3		4				
03:45	0	0	0	0				15:45	7	28	6	26			54
04:00	1		0					16:00	5		3				
04:15	0		0					16:15	2		5				
04:30	0		0					16:30	4		3				
04:45	0	1	0	0			1	16:45	9	20	9	20			40
05:00	0		0					17:00	10		6				
05:15	0		1					17:15	6		5				
05:30	1		1					17:30	1		3				
05:45	0	1	1	3			4	17:45	5	22	4	18			40
06:00	0		1					18:00	4		6				
06:15	2		2					18:15	3		3				
06:30	3		4					18:30	3		3				
06:45	1	6	3	10			16	18:45	3	13	3	15			28
07:00	6		23					19:00	4		3				
07:15	18		48					19:15	3		0				
07:30	34		28					19:30	3		4				
07:45	9	67	11	110			177	19:45	0	10	0	7			17
08:00	1		4					20:00	1		1				
08:15	3		4					20:15	1		1				
08:30	3		1					20:30	0		1				
08:45	5	12	7	16			28	20:45	2	4	2	5			9
09:00	5		8					21:00	0		0				
09:15	5		5					21:15	0		2				
09:30	1		4					21:30	0		0				
09:45	4	15	2	19			34	21:45	2	2	0	2			4
10:00	3		4					22:00	0		1				
10:15	0		16					22:15	0		1				
10:30	0		7					22:30	1		1				
10:45	1	4	6	33			37	22:45	0	1	0	3			4
11:00	2		4					23:00	0		0				
11:15	2		0					23:15	4		0				
11:30	5		4					23:30	1		0				
11:45	0	9	4	12			21	23:45	0	5	0	0			5
Total Vol.		117		203			**320**			191		149			**340**

	Daily Totals				
	NB	SB	EB	WB	Combined
	308	352			**660**

	AM			PM		
Split %	36.6%	63.4%	**48.5%**	56.2%	43.8%	**51.5%**
Peak Hour	07:00	07:00	**07:00**	14:30	14:15	**14:15**
Volume	67	110	**177**	70	34	**100**
P.H.F.	0.49	0.57	**0.67**	0.44	0.77	**0.50**

Volumes for: Thursday, April 12, 2007 City: Fresno Project #: 07-8061-003

Location: Highland Ave South of Shields

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	0		0					12:00	8		6				
00:15	0		0					12:15	1		5				
00:30	0		0					12:30	5		6				
00:45	1	1	1	1			2	12:45	7	21	2	19			40
01:00	0		0					13:00	5		3				
01:15	1		0					13:15	3		4				
01:30	0		0					13:30	5		6				
01:45	1	2	0	0			2	13:45	4	17	6	19			36
02:00	1		0					14:00	6		2				
02:15	0		0					14:15	4		5				
02:30	0		0					14:30	5		7				
02:45	0	1	1	1			2	14:45	7	22	4	18			40
03:00	1		0					15:00	9		3				
03:15	1		0					15:15	6		7				
03:30	0		0					15:30	12		8				
03:45	1	3	2	2			5	15:45	8	35	9	27			62
04:00	0		0					16:00	12		10				
04:15	1		0					16:15	7		7				
04:30	1		0					16:30	5		3				
04:45	0	2	0	0			2	16:45	6	30	6	26			56
05:00	3		1					17:00	12		8				
05:15	0		0					17:15	11		7				
05:30	0		1					17:30	6		4				
05:45	4	7	1	3			10	17:45	4	33	7	26			59
06:00	1		0					18:00	8		5				
06:15	5		6					18:15	7		6				
06:30	7		7					18:30	6		4				
06:45	5	18	10	23			41	18:45	4	25	7	22			47
07:00	8		7					19:00	5		4				
07:15	8		6					19:15	4		3				
07:30	11		9					19:30	3		1				
07:45	6	33	9	31			64	19:45	1	13	3	11			24
08:00	7		5					20:00	3		1				
08:15	6		8					20:15	0		2				
08:30	7		3					20:30	2		1				
08:45	3	23	2	18			41	20:45	2	7	1	5			12
09:00	5		5					21:00	3		2				
09:15	4		3					21:15	4		1				
09:30	6		3					21:30	3		0				
09:45	4	19	2	13			32	21:45	1	11	0	3			14
10:00	6		5					22:00	1		0				
10:15	2		1					22:15	0		0				
10:30	3		3					22:30	1		1				
10:45	5	16	4	13			29	22:45	1	3	3	4			7
11:00	3		5					23:00	0		1				
11:15	4		6					23:15	0		0				
11:30	7		5					23:30	3		2				
11:45	5	19	7	23			42	23:45	0	3	1	4			7
Total Vol.		144		128			**272**			220		184			**404**

Daily Totals				
NB	SB	EB	WB	**Combined**
364	312			**676**

	AM			PM		
Split %	52.9%	47.1%	**40.2%**	54.5%	45.5%	**59.8%**
Peak Hour	07:00	06:45	**06:45**	15:30	15:15	**15:30**
Volume	33	32	**64**	39	34	**73**
P.H.F.	0.75	0.80	**0.80**	0.92	0.85	**0.83**

Volumes for: Thursday, April 12, 2007 City: Fresno Project #: 07-8061-004

Location: Highland Ave North of McKinley

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	0		0					12:00	8		6				
00:15	0		0					12:15	5		3				
00:30	0		0					12:30	3		4				
00:45	0	0	0	0				12:45	4	20	3	16			36
01:00	1		0					13:00	2		4				
01:15	1		1					13:15	2		5				
01:30	0		0					13:30	1		3				
01:45	1	3	0	1			4	13:45	6	11	5	17			28
02:00	1		0					14:00	3		2				
02:15	0		0					14:15	7		6				
02:30	0		0					14:30	7		5				
02:45	0	1	0	0			1	14:45	9	26	7	20			46
03:00	0		1					15:00	9		5				
03:15	0		0					15:15	8		6				
03:30	0		1					15:30	10		8				
03:45	0	0	1	3			3	15:45	6	33	4	23			56
04:00	0		0					16:00	13		11				
04:15	0		1					16:15	9		8				
04:30	1		0					16:30	6		4				
04:45	0	1	0	1			2	16:45	6	34	5	28			62
05:00	2		1					17:00	12		9				
05:15	1		0					17:15	11		9				
05:30	0		0					17:30	7		6				
05:45	4	7	2	3			10	17:45	4	34	2	26			60
06:00	1		1					18:00	6		5				
06:15	3		5					18:15	8		6				
06:30	6		8					18:30	6		6				
06:45	10	20	11	25			45	18:45	4	24	3	20			44
07:00	7		8					19:00	9		5				
07:15	5		7					19:15	6		5				
07:30	8		10					19:30	2		4				
07:45	7	27	9	34			61	19:45	1	18	0	14			32
08:00	2		4					20:00	3		1				
08:15	5		7					20:15	1		3				
08:30	4		3					20:30	1		1				
08:45	4	15	2	16			31	20:45	2	7	1	6			13
09:00	4		6					21:00	2		1				
09:15	2		3					21:15	3		0				
09:30	6		6					21:30	1		1				
09:45	2	14	1	16			30	21:45	2	8	0	2			10
10:00	3		5					22:00	2		0				
10:15	2		2					22:15	1		1				
10:30	1		3					22:30	2		0				
10:45	3	9	5	15			24	22:45	1	6	2	3			9
11:00	3		4					23:00	0		0				
11:15	3		5					23:15	0		0				
11:30	4		5					23:30	1		1				
11:45	5	15	7	21			36	23:45	0	1	2	3			4
Total Vol.		112		135			**247**			222		178			**400**

	Daily Totals				
	NB	SB	EB	WB	Combined
	334	313			**647**

	AM			PM			
Split %	45.3%	54.7%	**38.2%**	55.5%	44.5%		**61.8%**
Peak Hour	06:45	06:45	**06:45**	15:30	15:30		**15:30**
Volume	30	36	**66**	38	31		69
P.H.F.	0.75	0.82	**0.79**	0.81	0.70		**0.72**

Volumes for: Thursday, April 12, 2007 City: Fresno Project #: 07-8061-005

Location: DeWolf Ave North of Shields

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	0		0					12:00	9		8				
00:15	1		1					12:15	5		7				
00:30	1		0					12:30	6		7				
00:45	0	2	0	1			3	12:45	4	24	6	28			52
01:00	1		0					13:00	4		8				
01:15	0		0					13:15	8		4				
01:30	0		0					13:30	11		2				
01:45	1	2	0	0			2	13:45	13	36	5	19			55
02:00	0		0					14:00	8		7				
02:15	1		0					14:15	13		15				
02:30	1		0					14:30	17		26				
02:45	0	2	0	0			2	14:45	52	90	28	76			166
03:00	0		0					15:00	18		14				
03:15	0		0					15:15	26		15				
03:30	0		0					15:30	11		11				
03:45	0	0	0	0				15:45	18	73	8	48			121
04:00	0		0					16:00	11		12				
04:15	1		0					16:15	12		14				
04:30	2		0					16:30	6		17				
04:45	0	3	0	0			3	16:45	20	49	20	63			112
05:00	0		2					17:00	25		34				
05:15	1		0					17:15	28		20				
05:30	4		1					17:30	12		14				
05:45	0	5	1	4			9	17:45	6	71	6	74			145
06:00	4		6					18:00	2		10				
06:15	2		4					18:15	5		14				
06:30	12		8					18:30	9		8				
06:45	6	24	16	34			58	18:45	6	22	14	46			68
07:00	14		46					19:00	10		4				
07:15	53		124					19:15	9		6				
07:30	69		48					19:30	12		5				
07:45	34	170	8	226			396	19:45	6	37	3	18			55
08:00	11		16					20:00	2		1				
08:15	18		11					20:15	4		2				
08:30	7		4					20:30	4		0				
08:45	4	40	7	38			78	20:45	6	16	1	4			20
09:00	7		6					21:00	3		4				
09:15	7		7					21:15	7		1				
09:30	5		7					21:30	2		2				
09:45	4	23	8	28			51	21:45	2	14	2	9			23
10:00	5		6					22:00	3		1				
10:15	6		5					22:15	0		3				
10:30	5		18					22:30	1		0				
10:45	9	25	7	36			61	22:45	0	4	1	5			9
11:00	17		7					23:00	4		1				
11:15	4		7					23:15	0		0				
11:30	6		9					23:30	5		1				
11:45	7	34	7	30			64	23:45	0	9	1	3			12
Total Vol.		330		397			**727**			445		393			**838**

	Daily Totals				
	NB	SB	EB	WB	Combined
	775	790			**1565**

	AM			PM			
Split %	45.4%	54.6%	**46.5%**	53.1%	46.9%		**53.5%**
Peak Hour	07:00	06:45	**07:00**	14:30	16:30		**14:30**
Volume	170	234	**396**	113	91		196
P.H.F.	0.62	0.47	**0.56**	0.50	0.67		**0.61**

Volumes for: Thursday, April 12, 2007 City: Fresno Project #: 07-8061-006

Location: DeWolf Ave Between Shields and McKinley

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	0		1					12:00	8		6				
00:15	0		0					12:15	5		5				
00:30	0		0					12:30	2		8				
00:45	1	1	0	1			2	12:45	4	19	3	22			41
01:00	0		0					13:00	3		5				
01:15	1		1					13:15	8		2				
01:30	0		0					13:30	10		2				
01:45	0	1	0	1			2	13:45	7	28	5	14			42
02:00	0		0					14:00	8		4				
02:15	0		1					14:15	11		8				
02:30	1		0					14:30	12		16				
02:45	0	1	0	1			2	14:45	40	71	18	46			117
03:00	0		0					15:00	11		7				
03:15	0		0					15:15	13		11				
03:30	0		0					15:30	10		5				
03:45	0	0	0	0				15:45	11	45	6	29			74
04:00	0		0					16:00	7		9				
04:15	0		0					16:15	14		14				
04:30	1		0					16:30	5		9				
04:45	0	1	0	0			1	16:45	15	41	17	49			90
05:00	0		2					17:00	17		12				
05:15	1		0					17:15	16		12				
05:30	2		1					17:30	7		11				
05:45	1	4	3	6			10	17:45	5	45	7	42			87
06:00	2		2					18:00	2		9				
06:15	0		2					18:15	2		10				
06:30	5		6					18:30	7		9				
06:45	4	11	10	20			31	18:45	4	15	11	39			54
07:00	9		28					19:00	4		4				
07:15	26		41					19:15	5		3				
07:30	32		18					19:30	7		4				
07:45	12	79	6	93			172	19:45	1	17	3	14			31
08:00	8		12					20:00	1		3				
08:15	9		5					20:15	5		1				
08:30	3		7					20:30	5		2				
08:45	2	22	5	29			51	20:45	6	17	3	9			26
09:00	4		6					21:00	1		2				
09:15	5		7					21:15	5		0				
09:30	4		6					21:30	1		3				
09:45	6	19	4	23			42	21:45	2	9	0	5			14
10:00	4		5					22:00	2		1				
10:15	4		2					22:15	0		2				
10:30	5		2					22:30	1		0				
10:45	4	17	3	12			29	22:45	0	3	1	4			7
11:00	10		7					23:00	1		1				
11:15	6		4					23:15	0		0				
11:30	6		6					23:30	4		1				
11:45	2	24	4	21			45	23:45	1	6	1	3			9
Total Vol.		180		207			**387**			316		276			**592**

Daily Totals					
NB	SB	EB	WB	Combined
496	483			**979**

	AM			PM			
Split %	46.5%	53.5%	**39.5%**	53.4%	46.6%		**60.5%**
Peak Hour	07:00	06:45	**07:00**	14:30	14:30		**14:30**
Volume	79	97	**172**	76	52		**128**
P.H.F.	0.62	0.59	**0.64**	0.46	0.72		**0.55**

Volumes for: Thursday, April 12, 2007 City: Fresno Project #: 07-8061-007

Location: DeWolf Ave South of McKinley

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	1		0					12:00	4		5				
00:15	1		1					12:15	5		5				
00:30	0		0					12:30	7		4				
00:45	1	3	0	1			4	12:45	4	20	6	20			40
01:00	0		0					13:00	4		3				
01:15	0		0					13:15	7		6				
01:30	0		0					13:30	3		2				
01:45	0	0	0	0				13:45	5	19	5	16			35
02:00	1		0					14:00	4		3				
02:15	0		1					14:15	6		10				
02:30	1		0					14:30	14		17				
02:45	0	2	0	1			3	14:45	26	50	29	59			109
03:00	0		0					15:00	11		9				
03:15	0		0					15:15	14		12				
03:30	0		0					15:30	10		9				
03:45	0	0	0	0				15:45	11	46	8	38			84
04:00	0		0					16:00	10		6				
04:15	0		0					16:15	15		11				
04:30	0		0					16:30	11		6				
04:45	0	0	0	0				16:45	15	51	11	34			85
05:00	1		1					17:00	20		16				
05:15	2		1					17:15	18		13				
05:30	1		0					17:30	9		6				
05:45	1	5	0	2			7	17:45	9	56	5	40			96
06:00	3		3					18:00	10		5				
06:15	2		1					18:15	4		3				
06:30	7		6					18:30	12		10				
06:45	8	20	12	22			42	18:45	8	34	6	24			58
07:00	22		25					19:00	6		5				
07:15	41		47					19:15	4		2				
07:30	33		38					19:30	7		5				
07:45	13	109	18	128			237	19:45	4	21	3	15			36
08:00	7		10					20:00	1		3				
08:15	5		8					20:15	3		4				
08:30	6		7					20:30	4		6				
08:45	4	22	2	27			49	20:45	3	11	5	18			29
09:00	7		6					21:00	2		4				
09:15	6		6					21:15	3		2				
09:30	5		4					21:30	2		1				
09:45	6	24	5	21			45	21:45	1	8	1	8			16
10:00	4		3					22:00	1		1				
10:15	2		4					22:15	1		0				
10:30	2		3					22:30	0		0				
10:45	4	12	6	16			28	22:45	1	3	0	1			4
11:00	6		8					23:00	1		1				
11:15	3		5					23:15	1		0				
11:30	5		7					23:30	3		2				
11:45	3	17	6	26			43	23:45	1	6	1	4			10
Total Vol.		214		244			**458**			325		277			**602**

Daily Totals

NB	SB	EB	WB	Combined
539	521			**1060**

	AM			PM			
Split %	46.7%	53.3%	**43.2%**	54.0%	46.0%		**56.8%**
Peak Hour	07:00	07:00	**07:00**	14:30	14:30		**14:30**
Volume	109	128	**237**	65	67		132
P.H.F.	0.66	0.68	**0.67**	0.60	0.58		**0.60**

Volumes for: Thursday, April 12, 2007 City: Fresno Project #: 07-8061-008

Location: Fancher Ave South of McKinley

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	0		0					12:00	4		4				
00:15	0		0					12:15	5		7				
00:30	0		1					12:30	7		8				
00:45	0	0	0	1			1	12:45	3	19	4	23			42
01:00	0		0					13:00	6		7				
01:15	0		0					13:15	8		4				
01:30	1		0					13:30	4		5				
01:45	0	1	0	0			1	13:45	3	21	5	21			42
02:00	0		0					14:00	2		3				
02:15	0		1					14:15	9		7				
02:30	0		0					14:30	9		8				
02:45	0	0	1	2			2	14:45	16	36	15	33			69
03:00	0		0					15:00	9		8				
03:15	0		0					15:15	11		9				
03:30	0		0					15:30	11		10				
03:45	0	0	0	0				15:45	7	38	6	33			71
04:00	0		0					16:00	16		15				
04:15	0		0					16:15	6		5				
04:30	0		0					16:30	13		10				
04:45	0	0	1	1			1	16:45	11	46	8	38			84
05:00	1		2					17:00	10		8				
05:15	2		0					17:15	14		12				
05:30	0		1					17:30	7		4				
05:45	1	4	3	6			10	17:45	10	41	7	31			72
06:00	2		2					18:00	5		3				
06:15	3		5					18:15	6		5				
06:30	5		6					18:30	7		6				
06:45	8	18	6	19			37	18:45	5	23	3	17			40
07:00	12		13					19:00	7		5				
07:15	17		18					19:15	2		3				
07:30	14		15					19:30	3		4				
07:45	9	52	10	56			108	19:45	3	15	3	15			30
08:00	11		12					20:00	1		2				
08:15	7		8					20:15	2		4				
08:30	3		4					20:30	1		3				
08:45	6	27	7	31			58	20:45	4	8	6	15			23
09:00	5		7					21:00	1		3				
09:15	2		4					21:15	0		2				
09:30	3		6					21:30	0		2				
09:45	4	14	5	22			36	21:45	2	3	2	9			12
10:00	3		5					22:00	0		0				
10:15	4		6					22:15	5		3				
10:30	1		3					22:30	2		1				
10:45	5	13	7	21			34	22:45	3	10	0	4			14
11:00	5		4					23:00	2		1				
11:15	4		5					23:15	1		0				
11:30	3		4					23:30	1		1				
11:45	2	14	5	18			32	23:45	1	5	1	3			8
Total Vol.		143		177			**320**			265		242			**507**

Daily Totals				
NB	SB	EB	WB	Combined
408	419			**827**

	AM			PM			
Split %	44.7%	55.3%	**38.7%**	52.3%	47.7%		**61.3%**
Peak Hour	07:00	07:00	**07:00**	16:30	14:45		**14:45**
Volume	52	56	**108**	48	42		**89**
P.H.F.	0.76	0.78	**0.77**	0.85	0.70		**0.72**

Volumes for: Thursday, April 12, 2007 City: Fresno Project #: 07-8061-009

Location: Fancher Ave North of Belmont

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	0		0					12:00	6		5				
00:15	0		0					12:15	6		8				
00:30	0		1					12:30	8		9				
00:45	0	0	0	1			1	12:45	5	25	6	28			53
01:00	1		1					13:00	5		3				
01:15	0		0					13:15	4		5				
01:30	0		1					13:30	9		7				
01:45	0	1	0	2			3	13:45	5	23	6	21			44
02:00	0		0					14:00	6		7				
02:15	1		0					14:15	10		7				
02:30	0		0					14:30	8		9				
02:45	0	1	1	1			2	14:45	10	34	11	34			68
03:00	0		0					15:00	12		10				
03:15	0		0					15:15	6		5				
03:30	0		0					15:30	14		12				
03:45	0	0	0	0				15:45	5	37	3	30			67
04:00	0		0					16:00	12		10				
04:15	0		0					16:15	10		9				
04:30	0		2					16:30	11		8				
04:45	0	0	1	3			3	16:45	13	46	12	39			85
05:00	2		0					17:00	15		13				
05:15	0		1					17:15	16		14				
05:30	3		1					17:30	9		8				
05:45	1	6	1	3			9	17:45	7	47	6	41			88
06:00	2		3					18:00	9		7				
06:15	3		5					18:15	7		5				
06:30	3		4					18:30	8		6				
06:45	6	14	8	20			34	18:45	6	30	4	22			52
07:00	7		9					19:00	8		6				
07:15	15		17					19:15	5		3				
07:30	13		15					19:30	3		4				
07:45	9	44	10	51			95	19:45	4	20	3	16			36
08:00	8		10					20:00	3		1				
08:15	7		5					20:15	2		2				
08:30	5		7					20:30	3		1				
08:45	5	25	6	28			53	20:45	4	12	2	6			18
09:00	4		5					21:00	1		4				
09:15	3		5					21:15	3		2				
09:30	3		4					21:30	4		3				
09:45	6	16	7	21			37	21:45	1	9	2	11			20
10:00	3		5					22:00	1		1				
10:15	5		6					22:15	2		2				
10:30	2		3					22:30	2		3				
10:45	3	13	5	19			32	22:45	0	5	0	6			11
11:00	4		5					23:00	0		1				
11:15	3		5					23:15	0		0				
11:30	4		2					23:30	0		1				
11:45	2	13	4	16			29	23:45	0	0	0	2			2
Total Vol.		133		165			**298**			288		256			**544**

	Daily Totals				
	NB	SB	EB	WB	Combined
	421	421			**842**

	AM			PM			
Split %	44.6%	55.4%	**35.4%**	52.9%	47.1%		**64.6%**
Peak Hour	07:15	07:15	**07:15**	16:30	16:30		**16:30**
Volume	45	52	**97**	55	47		**102**
P.H.F.	0.75	0.76	**0.76**	0.90	0.84		**0.85**

Volumes for: Thursday, April 12, 2007 City: Fresno Project #: 07-8061-010

Location: Shields Ave Between Locan and DeWolf

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			0		2			12:00			5		11		
00:15			1		2			12:15			5		6		
00:30			0		0			12:30			13		8		
00:45			0	1	2	6	7	12:45			7	30	9	34	64
01:00			1		1			13:00			4		9		
01:15			1		3			13:15			7		10		
01:30			1		1			13:30			7		6		
01:45			1	4	2	7	11	13:45			6	24	11	36	60
02:00			0		0			14:00			6		12		
02:15			0		0			14:15			6		16		
02:30			0		1			14:30			9		20		
02:45			0	0	0	1	1	14:45			51	72	25	73	145
03:00			0		0			15:00			13		26		
03:15			0		1			15:15			12		15		
03:30			0		0			15:30			8		17		
03:45			0	0	1	2	2	15:45			6	39	12	70	109
04:00			1		0			16:00			8		19		
04:15			2		0			16:15			4		15		
04:30			0		0			16:30			13		24		
04:45			1	4	0	0	4	16:45			7	32	45	103	135
05:00			2		0			17:00			19		40		
05:15			2		0			17:15			20		35		
05:30			4		2			17:30			11		21		
05:45			6	14	3	5	19	17:45			12	62	13	109	171
06:00			8		5			18:00			5		12		
06:15			12		7			18:15			5		19		
06:30			15		9			18:30			5		15		
06:45			24	59	18	39	98	18:45			5	20	15	61	81
07:00			26		45			19:00			5		10		
07:15			59		43			19:15			4		13		
07:30			87		52			19:30			6		8		
07:45			40	212	13	153	365	19:45			5	20	3	34	54
08:00			22		21			20:00			4		9		
08:15			20		15			20:15			8		1		
08:30			15		5			20:30			2		3		
08:45			14	71	11	52	123	20:45			3	17	4	17	34
09:00			3		7			21:00			2		2		
09:15			11		8			21:15			5		4		
09:30			9		4			21:30			3		3		
09:45			9	32	6	25	57	21:45			0	10	5	14	24
10:00			3		9			22:00			2		0		
10:15			8		5			22:15			2		3		
10:30			7		8			22:30			0		2		
10:45			10	28	9	31	59	22:45			0	4	3	8	12
11:00			6		6			23:00			2		0		
11:15			3		9			23:15			0		2		
11:30			2		10			23:30			0		4		
11:45			5	16	11	36	52	23:45			0	2	2	8	10
Total Vol.				441		357	**798**					332		567	**899**

Daily Totals

NB	SB	EB	WB	Combined
		773	924	**1697**

	AM			PM		
Split %	55.3%	44.7%	**47.0%**	36.9%	63.1%	**53.0%**
Peak Hour	07:00	06:45	**07:00**	14:30	16:30	**16:30**
Volume	212	158	**365**	85	144	**203**
P.H.F.	0.61	0.76	**0.66**	0.42	0.80	**0.86**

Volumes for: Thursday, April 12, 2007 City: Fresno Project #: 07-8061-011

Location: Shields Ave Between DeWolf and Leonard

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			0		2			12:00			2		8		
00:15			0		1			12:15			5		3		
00:30			0		0			12:30			9		8		
00:45			0	0	1	4	4	12:45			3	19	5	24	43
01:00			0		1			13:00			2		4		
01:15			0		2			13:15			4		11		
01:30			1		2			13:30			6		4		
01:45			0	1	2	7	8	13:45			4	16	8	27	43
02:00			0		0			14:00			4		10		
02:15			0		0			14:15			5		10		
02:30			0		1			14:30			3		11		
02:45			0	0	0	1	1	14:45			38	50	15	46	96
03:00			0		0			15:00			9		18		
03:15			0		1			15:15			5		11		
03:30			0		0			15:30			9		14		
03:45			0	0	1	2	2	15:45			3	26	9	52	78
04:00			1		0			16:00			7		16		
04:15			1		0			16:15			3		11		
04:30			0		0			16:30			13		14		
04:45			1	3	0	0	3	16:45			5	28	35	76	104
05:00			2		0			17:00			8		25		
05:15			2		0			17:15			11		22		
05:30			2		1			17:30			10		16		
05:45			5	11	2	3	14	17:45			7	36	11	74	110
06:00			7		2			18:00			2		8		
06:15			10		5			18:15			4		12		
06:30			11		6			18:30			3		12		
06:45			19	47	12	25	72	18:45			2	11	9	41	52
07:00			17		23			19:00			3		7		
07:15			34		42			19:15			0		10		
07:30			48		34			19:30			4		3		
07:45			21	120	15	114	234	19:45			2	9	4	24	33
08:00			12		10			20:00			1		7		
08:15			13		10			20:15			6		3		
08:30			7		4			20:30			0		2		
08:45			9	41	7	31	72	20:45			0	7	4	16	23
09:00			3		9			21:00			1		1		
09:15			7		7			21:15			3		6		
09:30			6		3			21:30			1		1		
09:45			7	23	3	22	45	21:45			0	5	3	11	16
10:00			0		6			22:00			0		0		
10:15			7		1			22:15			0		0		
10:30			2		4			22:30			0		2		
10:45			3	12	5	16	28	22:45			0	0	1	3	3
11:00			2		7			23:00			1		1		
11:15			2		5			23:15			0		2		
11:30			3		5			23:30			0		3		
11:45			5	12	11	28	40	23:45			0	1	2	8	9
Total Vol.				270		253	**523**					208		402	**610**

			Daily Totals		
	NB	SB	EB	WB	**Combined**
			478	655	**1133**

	AM			**PM**		
Split %	51.6%	48.4%	**46.2%**	34.1%	65.9%	**53.8%**
Peak Hour	07:00	07:00	**07:00**	14:45	16:45	**16:30**
Volume	120	114	**234**	61	98	**133**
P.H.F.	0.63	0.68	**0.71**	0.40	0.70	**0.83**

Volumes for: Thursday, April 12, 2007 City: Fresno Project #: 07-8061-012

Location: Shields Ave Between Leonard and Highland

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			0		2			12:00			3		6		
00:15			0		1			12:15			2		2		
00:30			0		0			12:30			4		5		
00:45			0	0	0	3	3	12:45			2	11	4	17	28
01:00			0		2			13:00			2		4		
01:15			1		1			13:15			1		7		
01:30			1		2			13:30			6		2		
01:45			0	2	1	6	8	13:45			3	12	11	24	36
02:00			0		0			14:00			3		8		
02:15			0		0			14:15			4		5		
02:30			0		0			14:30			1		7		
02:45			0	0	0	0		14:45			4	12	8	28	40
03:00			0		0			15:00			7		10		
03:15			0		1			15:15			5		6		
03:30			0		0			15:30			6		15		
03:45			0	0	1	2	2	15:45			1	19	9	40	59
04:00			1		0			16:00			5		15		
04:15			1		0			16:15			2		14		
04:30			0		0			16:30			11		8		
04:45			0	2	0	0	2	16:45			2	20	25	62	82
05:00			0		0			17:00			5		21		
05:15			2		0			17:15			8		18		
05:30			2		1			17:30			7		14		
05:45			6	10	3	4	14	17:45			5	25	11	64	89
06:00			5		1			18:00			1		7		
06:15			6		5			18:15			5		9		
06:30			8		3			18:30			2		14		
06:45			18	37	11	20	57	18:45			1	9	8	38	47
07:00			12		8			19:00			2		6		
07:15			10		4			19:15			0		7		
07:30			15		10			19:30			2		2		
07:45			16	53	6	28	81	19:45			2	6	3	18	24
08:00			10		6			20:00			3		5		
08:15			10		6			20:15			7		2		
08:30			7		3			20:30			0		1		
08:45			5	32	7	22	54	20:45			1	11	2	10	21
09:00			4		7			21:00			1		2		
09:15			5		2			21:15			0		6		
09:30			4		2			21:30			1		1		
09:45			8	21	3	14	35	21:45			1	3	1	10	13
10:00			4		6			22:00			0		0		
10:15			6		3			22:15			0		1		
10:30			0		2			22:30			0		2		
10:45			1	11	5	16	27	22:45			0	0	1	4	4
11:00			0		1			23:00			1		0		
11:15			3		4			23:15			1		1		
11:30			0		2			23:30			0		3		
11:45			4	7	6	13	20	23:45			0	2	2	6	8
Total Vol.				175		128	**303**					130		321	**451**

Daily Totals

NB	SB	EB	WB	Combined
		305	449	**754**

	AM			PM		
Split %	57.8%	42.2%	**40.2%**	28.8%	71.2%	**59.8%**
Peak Hour	06:45	06:45	**06:45**	16:30	16:45	**16:45**
Volume	55	33	**88**	26	78	**100**
P.H.F.	0.76	0.75	**0.76**	0.59	0.78	**0.93**

Volumes for: Tuesday, April 17, 2007 City: Fresno Project #: 07-8061-013

Location: McKinley Ave Between DeWolf and Temperance

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			0		3			12:00			12		8		
00:15			1		3			12:15			18		12		
00:30			1		2			12:30			28		13		
00:45			1	3	3	11	14	12:45			16	74	15	48	122
01:00			0		3			13:00			23		15		
01:15			3		0			13:15			20		7		
01:30			1		1			13:30			16		13		
01:45			0	4	1	5	9	13:45			19	78	8	43	121
02:00			0		0			14:00			20		20		
02:15			0		0			14:15			22		23		
02:30			1		0			14:30			26		23		
02:45			1	2	1	1	3	14:45			42	110	21	87	197
03:00			0		0			15:00			13		25		
03:15			2		0			15:15			38		22		
03:30			1		0			15:30			29		27		
03:45			2	5	1	1	6	15:45			25	105	22	96	201
04:00			2		0			16:00			30		36		
04:15			5		0			16:15			31		44		
04:30			2		0			16:30			29		43		
04:45			5	14	0	0	14	16:45			25	115	31	154	269
05:00			4		0			17:00			28		39		
05:15			11		2			17:15			19		38		
05:30			23		9			17:30			26		36		
05:45			29	67	6	17	84	17:45			30	103	28	141	244
06:00			30		4			18:00			16		17		
06:15			25		8			18:15			21		28		
06:30			48		9			18:30			26		22		
06:45			41	144	15	36	180	18:45			15	78	16	83	161
07:00			47		29			19:00			21		16		
07:15			62		29			19:15			16		16		
07:30			54		29			19:30			18		13		
07:45			56	219	33	120	339	19:45			14	69	11	56	125
08:00			66		27			20:00			13		16		
08:15			41		20			20:15			9		16		
08:30			36		11			20:30			12		19		
08:45			23	166	13	71	237	20:45			1	35	16	67	102
09:00			15		14			21:00			5		16		
09:15			24		12			21:15			10		10		
09:30			23		12			21:30			4		5		
09:45			28	90	16	54	144	21:45			4	23	9	40	63
10:00			24		14			22:00			4		6		
10:15			14		8			22:15			4		8		
10:30			16		5			22:30			3		6		
10:45			15	69	7	34	103	22:45			1	12	4	24	36
11:00			21		10			23:00			4		5		
11:15			25		11			23:15			0		2		
11:30			32		10			23:30			0		2		
11:45			31	109	12	43	152	23:45			1	5	1	10	15
Total Vol.				892		393	**1285**					807		849	**1656**

			Daily Totals		
	NB	SB	EB	WB	**Combined**
			1699	1242	**2941**

	AM			**PM**		
Split %	69.4%	30.6%	**43.7%**	48.7%	51.3%	**56.3%**
Peak Hour	07:15	07:00	**07:15**	14:45	16:15	**16:15**
Volume	238	120	**356**	122	157	**270**
P.H.F.	0.90	0.91	**0.96**	0.73	0.89	**0.90**

Volumes for: Tuesday, April 17, 2007 City: Fresno Project #: 07-8061-014

Location: McKinley Ave Between Leonard and DeWolf

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			0		2			12:00			18		10		
00:15			1		2			12:15			19		18		
00:30			1		3			12:30			30		17		
00:45			1	3	3	10	13	12:45			18	85	15	60	145
01:00			0		2			13:00			20		9		
01:15			3		1			13:15			18		11		
01:30			1		1			13:30			16		13		
01:45			0	4	1	5	9	13:45			19	73	14	47	120
02:00			0		0			14:00			20		6		
02:15			0		0			14:15			27		32		
02:30			0		0			14:30			25		21		
02:45			1	1	0	0	1	14:45			49	121	15	74	195
03:00			0		0			15:00			21		21		
03:15			2		0			15:15			32		26		
03:30			1		0			15:30			31		28		
03:45			2	5	1	1	6	15:45			29	113	26	101	214
04:00			1		1			16:00			32		34		
04:15			5		0			16:15			37		38		
04:30			2		0			16:30			26		40		
04:45			6	14	0	1	15	16:45			30	125	31	143	268
05:00			4		0			17:00			29		36		
05:15			14		3			17:15			23		37		
05:30			20		9			17:30			30		38		
05:45			30	68	5	17	85	17:45			28	110	25	136	246
06:00			33		7			18:00			14		21		
06:15			27		5			18:15			21		26		
06:30			50		14			18:30			26		19		
06:45			43	153	14	40	193	18:45			15	76	16	82	158
07:00			51		23			19:00			21		21		
07:15			62		36			19:15			17		17		
07:30			64		34			19:30			17		12		
07:45			71	248	50	143	391	19:45			12	67	11	61	128
08:00			67		29			20:00			13		14		
08:15			40		22			20:15			9		16		
08:30			37		13			20:30			11		22		
08:45			26	170	13	77	247	20:45			2	35	17	69	104
09:00			18		16			21:00			5		16		
09:15			24		11			21:15			10		8		
09:30			18		15			21:30			2		11		
09:45			31	91	17	59	150	21:45			5	22	9	44	66
10:00			24		17			22:00			5		6		
10:15			13		7			22:15			4		7		
10:30			16		9			22:30			3		6		
10:45			16	69	7	40	109	22:45			2	14	3	22	36
11:00			22		8			23:00			4		4		
11:15			25		13			23:15			0		2		
11:30			32		11			23:30			0		2		
11:45			28	107	8	40	147	23:45			1	5	2	10	15
Total Vol.				933		433	**1366**					846		849	**1695**

			Daily Totals		
	NB	SB	EB	WB	**Combined**
			1779	1282	**3061**

	AM			**PM**		
Split %	68.3%	31.7%	**44.6%**	49.9%	50.1%	**55.4%**
Peak Hour	07:15	07:15	**07:15**	14:45	16:15	**16:00**
Volume	264	149	**413**	133	145	**268**
P.H.F.	0.93	0.75	**0.85**	0.68	0.91	**0.89**

Volumes for: Tuesday, April 17, 2007 City: Fresno Project #: 07-8061-015

Location: McKinley Ave Between Fancher and Leonard

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			0		2			12:00			18		11		
00:15			1		2			12:15			18		12		
00:30			1		3			12:30			27		15		
00:45			1	3	3	10	13	12:45			18	81	14	52	133
01:00			0		2			13:00			19		11		
01:15			2		2			13:15			14		13		
01:30			1		1			13:30			15		15		
01:45			0	3	1	6	9	13:45			20	68	13	52	120
02:00			0		0			14:00			15		10		
02:15			0		0			14:15			26		24		
02:30			0		0			14:30			22		22		
02:45			0	0	2	2	2	14:45			32	95	24	80	175
03:00			0		0			15:00			14		21		
03:15			1		1			15:15			30		26		
03:30			1		0			15:30			29		29		
03:45			0	2	3	4	6	15:45			26	99	25	101	200
04:00			2		1			16:00			25		33		
04:15			3		0			16:15			35		38		
04:30			2		0			16:30			25		42		
04:45			4	11	1	2	13	16:45			27	112	34	147	259
05:00			4		0			17:00			26		39		
05:15			10		5			17:15			18		35		
05:30			14		13			17:30			27		34		
05:45			25	53	7	25	78	17:45			28	99	27	135	234
06:00			28		9			18:00			14		20		
06:15			30		5			18:15			22		27		
06:30			45		15			18:30			23		21		
06:45			38	141	17	46	187	18:45			17	76	15	83	159
07:00			48		16			19:00			17		22		
07:15			58		29			19:15			17		16		
07:30			57		23			19:30			18		11		
07:45			61	224	19	87	311	19:45			13	65	11	60	125
08:00			51		26			20:00			12		14		
08:15			37		21			20:15			8		17		
08:30			31		12			20:30			12		23		
08:45			26	145	8	67	212	20:45			2	34	14	68	102
09:00			18		14			21:00			4		17		
09:15			20		10			21:15			7		10		
09:30			23		14			21:30			1		9		
09:45			25	86	15	53	139	21:45			5	17	8	44	61
10:00			19		18			22:00			4		4		
10:15			12		7			22:15			4		8		
10:30			16		9			22:30			3		6		
10:45			13	60	5	39	99	22:45			1	12	3	21	33
11:00			15		11			23:00			4		4		
11:15			19		12			23:15			0		1		
11:30			35		12			23:30			0		2		
11:45			25	94	6	41	135	23:45			1	5	1	8	13
Total Vol.				822		382	**1204**					763		851	**1614**

	AM			PM		
Split %	68.3%	31.7%	**42.7%**	47.3%	52.7%	**57.3%**
Peak Hour	07:15	07:15	**07:15**	15:30	16:15	**16:15**
Volume	227	97	**324**	115	153	**266**
P.H.F.	0.93	0.84	**0.93**	0.82	0.91	**0.91**

Daily Totals

NB	SB	EB	WB	Combined
		1585	1233	**2818**

Volumes for: Tuesday, April 17, 2007 City: Fresno Project #: 07-8061-016

Location: McKinley Ave Between Highland and Fancher

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			0		2			12:00			10		17		
00:15			1		2			12:15			21		18		
00:30			1		3			12:30			24		15		
00:45			0	2	5	12	14	12:45			21	76	16	66	142
01:00			0		2			13:00			19		15		
01:15			1		3			13:15			13		14		
01:30			1		1			13:30			14		23		
01:45			0	2	1	7	9	13:45			20	66	19	71	137
02:00			0		0			14:00			17		14		
02:15			0		0			14:15			24		21		
02:30			0		0			14:30			21		23		
02:45			1	1	0	0	1	14:45			31	93	26	84	177
03:00			0		0			15:00			15		21		
03:15			1		1			15:15			30		31		
03:30			1		0			15:30			30		33		
03:45			2	4	0	1	5	15:45			26	101	31	116	217
04:00			4		1			16:00			29		42		
04:15			1		1			16:15			34		47		
04:30			3		2			16:30			27		48		
04:45			4	12	1	5	17	16:45			25	115	40	177	292
05:00			4		1			17:00			25		44		
05:15			13		3			17:15			20		43		
05:30			20		9			17:30			33		44		
05:45			25	62	7	20	82	17:45			25	103	33	164	267
06:00			30		11			18:00			14		25		
06:15			30		9			18:15			25		31		
06:30			49		19			18:30			21		22		
06:45			41	150	21	60	210	18:45			12	72	17	95	167
07:00			51		10			19:00			19		21		
07:15			59		25			19:15			15		21		
07:30			64		23			19:30			19		17		
07:45			48	222	26	84	306	19:45			10	63	14	73	136
08:00			56		27			20:00			11		15		
08:15			39		20			20:15			11		20		
08:30			32		13			20:30			14		22		
08:45			22	149	10	70	219	20:45			1	37	17	74	111
09:00			18		15			21:00			5		17		
09:15			20		14			21:15			8		11		
09:30			21		13			21:30			2		9		
09:45			31	90	15	57	147	21:45			4	19	9	46	65
10:00			21		18			22:00			4		7		
10:15			15		6			22:15			3		8		
10:30			16		9			22:30			2		6		
10:45			14	66	10	43	109	22:45			1	10	3	24	34
11:00			20		12			23:00			4		6		
11:15			18		14			23:15			0		1		
11:30			31		22			23:30			0		3		
11:45			26	95	11	59	154	23:45			1	5	2	12	17
Total Vol.				855		418	**1273**					760		1002	**1762**

	AM			PM		
				Daily Totals		
	NB	SB	EB	WB	**Combined**	
			1615	1420	**3035**	
Split %	67.2%	32.8%	**41.9%**	43.1%	56.9%	**58.1%**
Peak Hour	07:15	07:15	**07:15**	15:30	16:15	**16:00**
Volume	227	101	**328**	119	179	**292**
P.H.F.	0.89	0.94	**0.94**	0.88	0.93	**0.90**

Volumes for: Tuesday, April 17, 2007 City: Fresno Project #: 07-8061-017

Location: McKinley Ave Between McCall and Highland

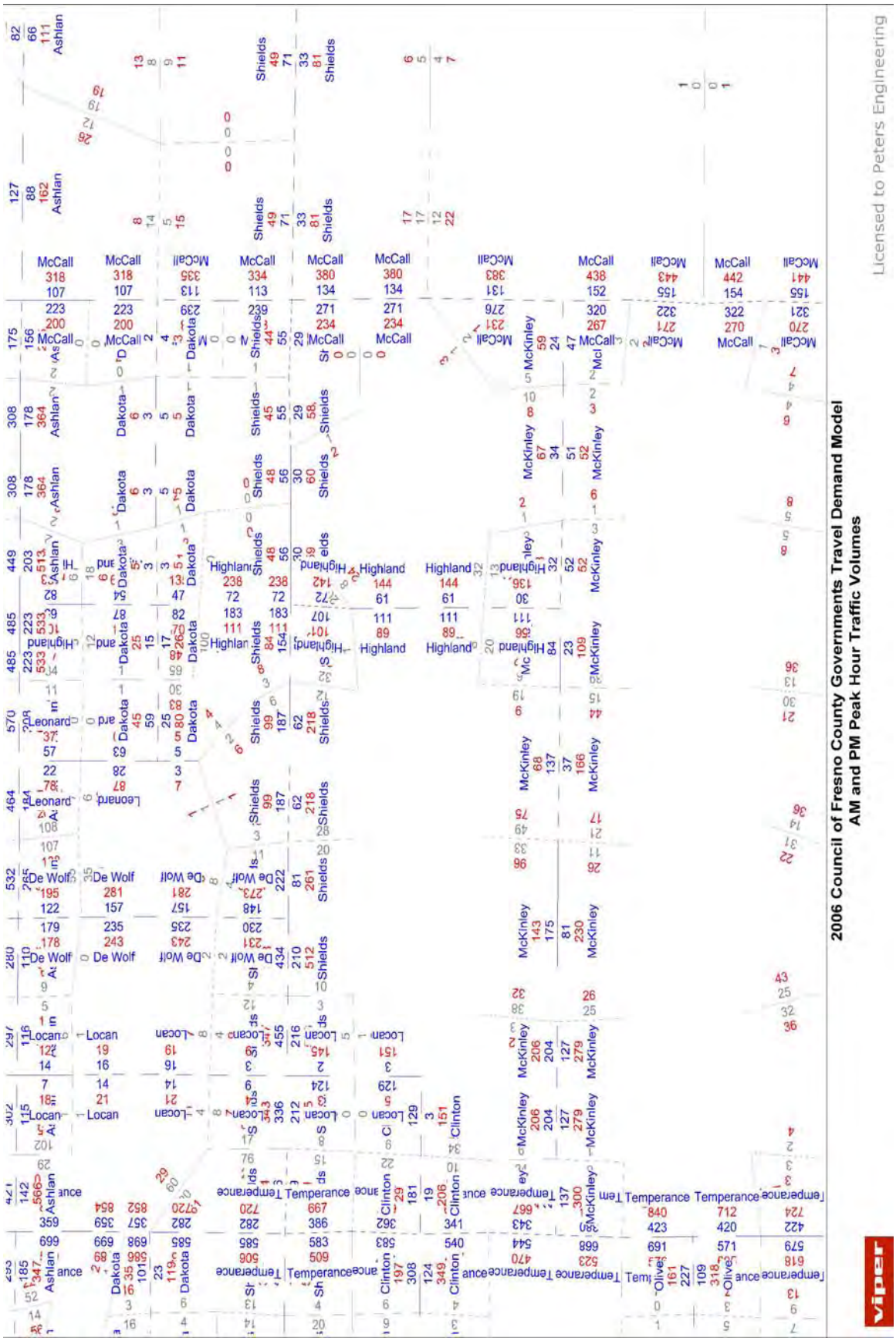
AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			0		2			12:00			7		20		
00:15			1		2			12:15			23		17		
00:30			1		3			12:30			25		15		
00:45			1	3	7	14	17	12:45			19	74	15	67	141
01:00			0		3			13:00			24		12		
01:15			2		2			13:15			15		11		
01:30			1		1			13:30			13		22		
01:45			0	3	0	6	9	13:45			25	77	23	68	145
02:00			0		0			14:00			18		17		
02:15			0		0			14:15			25		24		
02:30			0		0			14:30			22		28		
02:45			1	1	0	0	1	14:45			28	93	29	98	191
03:00			0		0			15:00			16		23		
03:15			2		0			15:15			29		40		
03:30			1		0			15:30			25		40		
03:45			2	5	1	1	6	15:45			27	97	32	135	232
04:00			3		1			16:00			27		47		
04:15			1		0			16:15			31		48		
04:30			3		1			16:30			28		49		
04:45			5	12	0	2	14	16:45			27	113	47	191	304
05:00			4		0			17:00			29		49		
05:15			17		2			17:15			26		49		
05:30			20		11			17:30			29		49		
05:45			23	64	8	21	85	17:45			26	110	32	179	289
06:00			32		12			18:00			18		28		
06:15			29		8			18:15			24		35		
06:30			55		14			18:30			22		28		
06:45			51	167	21	55	222	18:45			13	77	20	111	188
07:00			46		17			19:00			21		23		
07:15			65		29			19:15			14		26		
07:30			60		27			19:30			18		20		
07:45			59	230	30	103	333	19:45			9	62	15	84	146
08:00			54		28			20:00			13		13		
08:15			35		16			20:15			9		22		
08:30			32		17			20:30			11		20		
08:45			23	144	10	71	215	20:45			1	34	17	72	106
09:00			23		12			21:00			6		16		
09:15			24		13			21:15			9		12		
09:30			19		19			21:30			5		8		
09:45			17	83	14	58	141	21:45			4	24	9	45	69
10:00			15		21			22:00			4		8		
10:15			14		5			22:15			3		9		
10:30			16		12			22:30			2		7		
10:45			15	60	12	50	110	22:45			1	10	3	27	37
11:00			19		14			23:00			4		6		
11:15			20		13			23:15			0		3		
11:30			31		16			23:30			0		2		
11:45			25	95	13	56	151	23:45			1	5	2	13	18
Total Vol.				867		437	**1304**					776		1090	**1866**

			Daily Totals		
	NB	SB	EB	WB	**Combined**
			1643	1527	**3170**

	AM			**PM**		
Split %	66.5%	33.5%	**41.1%**	41.6%	58.4%	**58.9%**
Peak Hour	07:15	07:15	**07:15**	16:15	16:30	**16:15**
Volume	238	114	**352**	115	194	**308**
P.H.F.	0.92	0.95	**0.94**	0.93	0.99	**0.97**

Appendix
9-2

Fresno COG Travel Model


2006 Council of Fresno County Governments Travel Demand Model
AM and PM Peak Hour Traffic Volumes
Licensed to Peters Engineering
viper

2025 Council of Fresno County Governments Travel Demand Model
AM and PM Peak Hour Traffic Volumes
Licensed to Peters Engineering
viper

Appendix

9-3

Florida Department of Transportation Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas

GENERALIZED **PEAK HOUR DIRECTIONAL** VOLUMES FOR FLORIDA'S **URBANIZED AREAS***

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Divided	Level of Service A	B	C	D	E
1	Undivided	100	340	670	950	1,300
2	Divided	1,060	1,720	2,500	3,230	3,670
3	Divided	1,600	2,590	3,740	4,840	5,500

STATE TWO-WAY ARTERIALS

Class I (>0.00 to 1.99 signalized intersections per mile)

Lanes	Divided	Level of Service A	B	C	D	E
1	Undivided	**	220	720	860	890
2	Divided	250	1,530	1,810	1,860	***
3	Divided	380	2,330	2,720	2,790	***
4	Divided	490	3,030	3,460	3,540	***

Class II (2.00 to 4.50 signalized intersections per mile)

Lanes	Divided	Level of Service A	B	C	D	E
1	Undivided	**	100	590	810	850
2	Divided	**	220	1,360	1,710	1,800
3	Divided	**	340	2,110	2,570	2,710
4	Divided	**	440	2,790	3,330	3,500

Class III (more than 4.5 signalized intersections per mile and not within primary city central business district of an urbanized area over 750,000)

Lanes	Divided	Level of Service A	B	C	D	E
1	Undivided	**	**	280	660	810
2	Divided	**	**	650	1,510	1,720
3	Divided	**	**	1,020	2,330	2,580
4	Divided	**	**	1,350	3,070	3,330

Class IV (more than 4.5 signalized intersections per mile and within primary city central business district of an urbanized area over 750,000)

Lanes	Divided	Level of Service A	B	C	D	E
1	Undivided	**	**	270	720	780
2	Divided	**	**	650	1,580	1,660
3	Divided	**	**	1,000	2,390	2,490
4	Divided	**	**	1,350	3,130	3,250

NON-STATE ROADWAYS

Major City/County Roadways

Lanes	Divided	Level of Service A	B	C	D	E
1	Undivided	**	**	480	760	810
2	Divided	**	**	1,120	1,620	1,720
3	Divided	**	**	1,740	2,450	2,580

Other Signalized Roadways
(signalized intersection analysis)

Lanes	Divided	Level of Service A	B	C	D	E
1	Undivided	**	**	250	530	660
2	Divided	**	**	580	1,140	1,320

Source: Florida Department of Transportation 02/22/02
Systems Planning Office
605 Suwannee Street, MS 19
Tallahassee, FL 32399-0450
http://www11.myflorida.com/planning/systems/sm/los/default.htm

FREEWAYS

Interchange spacing ≥ 2 mi. apart

Lanes	Level of Service A	B	C	D	E
2	1,270	2,110	2,940	3,580	3,980
3	1,970	3,260	4,550	5,530	6,150
4	2,660	4,410	6,150	7,480	8,320
5	3,360	5,560	7,760	9,440	10,480
6	4,050	6,710	9,360	11,390	12,650

Interchange spacing < 2 mi. apart

Lanes	Level of Service A	B	C	D	E
2	1,130	1,840	2,660	3,440	3,910
3	1,780	2,890	4,180	5,410	6,150
4	2,340	3,940	5,700	7,380	8,380
5	3,080	4,990	7,220	9,340	10,620
6	3,730	6,040	8,740	11,310	12,850

BICYCLE MODE

(**Note**: Level of service for the bicycle mode in this table is based on roadway geometrics at 40 mph posted speed and traffic conditions, not number of bicyclists using the facility.) (Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine maximum service volumes.)

Paved Shoulder/ Bicycle Lane Coverage	Level of Service A	B	C	D	E
0-49%	**	**	170	720	>720
50-84%	**	130	210	>210	***
85-100%	160	380	>380	***	***

PEDESTRIAN MODE

(**Note:** Level of service for the pedestrian mode in this table is based on roadway geometrics at 40 mph posted speed and traffic conditions, not the number of pedestrians using the facility.) (Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine maximum service volumes.)

Sidewalk Coverage	Level of Service A	B	C	D	E
0-49%	**	**	**	330	810
50-84%	**	**	**	520	990
85-100%	**	120	590	>590	***

BUS MODE (Scheduled Fixed Route)

(Buses per hour)

Sidewalk Coverage	Level of Service A	B	C	D	E
0-84%	**	>5	≥4	≥3	≥2
85-100%	>6	>4	≥3	≥2	≥1

ARTERIAL/NON-STATE ROADWAY ADJUSTMENTS

DIVIDED/UNDIVIDED
(alter corresponding volumes by the indicated percent)

Lanes	Median	Left Turns Lanes	Adjustment Factors
1	Divided	Yes	+5%
1	Undivided	No	-20%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

ONE WAY FACILITIES
Increase corresponding volume 20%

*This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Values shown are hourly directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. Level of service letter grade thresholds are probably not comparable across modes and, therefore, cross modal comparisons should be made with caution. Furthermore, combining levels of service of different modes into one overall roadway level of service is not recommended. To convert to annual average daily traffic volumes, these volumes must be divided by appropriate D and K factors. The table's input value defaults and level of service criteria appear on the following page. Calculations are based on planning applications of the Highway Capacity Manual, Bicycle LOS Model, Pedestrian LOS Model and Transit Capacity and Quality of Service Manual, respectively for the automobile/truck, bicycle, pedestrian and bus modes.

**Cannot be achieved using table input value defaults.

***Not applicable for that level of service letter grade. For automobile/truck modes, volumes greater than level of service D become F because intersection capacities have been reached. For bicycle and pedestrian modes, the level of service letter grade (including F) is not achievable, because there is no maximum vehicle volume threshold using table input value defaults.

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Appendix

10-1

Summary of Applicable SJAPCD Regulations

Summary of Applicable SJVAPCD Regulations

The following is a summary of SJVAPCD Rules and Regulations that may be applicable to the proposed project. SJVAPCD Rules and Regulations are periodically revised and new regulations are promulgated. Project applicants are strongly advised to contact the SJVAPCD to determine the Rules and Regulations applicable to the proposed project.

Regulation VIII (Fugitive Dust Prohibitions). Regulation VIII (Rules 8011-8081) is a series of rules designed to reduce particulate emissions generated by human activity, including construction and demolition activities, carryout and trackout, paved and unpaved roads, bulk material handling and storage, unpaved vehicle/traffic areas, open space areas, etc. If a non-residential area is 5.0 or more acres in area, a Dust Control Plan must be submitted as specified in Section 6.3.1 of Rule 8021. Additional requirements may apply, depending on total area of disturbance.

Rule 4002 (National Emissions Standards for Hazardous Air Pollutants). This rule may apply to projects in which portions of an existing building would be renovated, partially demolished or removed. Prior to demolition activity, an asbestos survey of the existing structure may be required to identify the presence of any asbestos containing building materials (ACBM). Removal of identified ACBM must be removed by a certified asbestos contractor in accordance withCAL-OSHA requirements.

Rule 3135 (Dust Control Plan Fee). In addition to submittal of a Dust Control Plan, as specified in Regulation VIII, submittal of a fee may be required. The purpose of this fee is to reimburse the District for the cost of reviewing the Dust Control Plan.

Rule 4102 (Nuisance). Applies to any source operation that emits or may emit air contaminants or other materials.

Rule 4103 (Open Burning). This rule regulates the use of open burning and specifies the types of materials that may be open burned. Section 5.1 of this rule prohibits the burning of trees and other vegetative (non-agricultural) material whenever the land is being developed for non-agricultural purposes.

Rule 4601 (Architectural Coatings). Limits volatile organic compounds from architectural coatings.

Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). This rule applies to the manufacture and use of cutback, slow cure, and emulsified asphalt during paving and maintenance operations.

Regulation IX, Rule 9310 (School Bus Fleets). Generally, older school buses emit more TACs and other air pollutants than more current models. More than one-third of the school buses are fifteen years old or older, and are subject to less stringent emission standards than those for later model school buses and would benefit most from replacement or repower in reducing emissions. The purpose of this rule is to limit emissions of nitrogen oxides (NOx), particulate matter (PM) and diesel toxic air contaminants from school bus fleets and to provide administrative requirements for school bus fleet operators. This rule is intended to achieve greater and earlier NOx and PM emission reductions than would occur through the normal vehicle replacement process for fleets in public service. Emissions could be reduced in a number of ways, including (1) replacing mobile sources before scheduled retirement; (2) replacing engines/power trains of existing sources with cleaner technology; (3) retrofitting emission control technology to existing sources; or (4) switching to cleaner fuels. This rule is in the initial stages of development, and as a result, specific rule details are not yet available (SJVAPCD 2007).

Appendix
10-2

Emissions Modeling

4/15/2008 6:50:03 PM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\Kurt Legleiter\Application Data\Urbemis\Version9a\Projects\Clovis 4th Ed Center Construction.urb924

Project Name: Clovis 4th Ed Center - Construction

Project Location: Fresno County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (tons/year unmitigated)	0.21	1.64	12.47	0.08	12.56	2.61	0.07	2.68	194.10
2013 TOTALS (tons/year mitigated)	0.21	1.64	0.94	0.08	1.02	0.20	0.07	0.27	194.10
Percent Reduction	0.00	0.00	92.48	0.00	91.88	92.48	0.00	89.90	0.00
2014 TOTALS (tons/year unmitigated)	5.60	2.40	0.04	0.14	0.18	0.01	0.13	0.14	1,017.92
2014 TOTALS (tons/year mitigated)	5.60	2.40	0.04	0.14	0.18	0.01	0.13	0.14	1,017.92
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015 TOTALS (tons/year unmitigated)	3.23	1.28	0.02	0.08	0.10	0.01	0.07	0.08	592.86
2015 TOTALS (tons/year mitigated)	3.23	1.28	0.02	0.08	0.10	0.01	0.07	0.08	592.86
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013	0.21	1.64	12.47	0.08	12.56	2.61	0.07	2.68	194.10
Demolition 09/25/2013-10/29/2013	0.04	0.32	0.07	0.02	0.09	0.02	0.02	0.03	39.90
Fugitive Dust	0.00	0.00	0.34	0.00	0.34	0.07	0.00	0.07	0.00
Demo Off Road Diesel	0.04	0.27	0.00	0.02	0.02	0.00	0.01	0.01	28.52
Demo On Road Diesel	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	9.79
Demo Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.60
Fine Grading 10/30/2013-12/11/2013	0.15	1.22	12.40	0.06	12.46	2.59	0.05	2.64	141.04
Fine Grading Dust	0.00	0.00	12.40	0.00	12.40	2.59	0.00	2.59	0.00
Fine Grading Off Road Diesel	0.15	1.22	0.00	0.06	0.06	0.00	0.05	0.05	137.06
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.97
Asphalt 12/12/2013-12/27/2013	0.03	0.10	0.00	0.01	0.01	0.00	0.01	0.01	13.16
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.08	0.00	0.01	0.01	0.00	0.01	0.01	6.79
Paving On Road Diesel	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	5.14
Paving Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.23

2014	5.60	2.40	0.04	0.14	0.18	0.01	0.13	0.14	1,017.92
Building 01/01/2014-07/31/2015	0.52	2.40	0.04	0.14	0.18	0.01	0.13	0.14	1,011.85
Building Off Road Diesel	0.34	1.69	0.00	0.11	0.11	0.00	0.10	0.10	211.57
Building Vendor Trips	0.04	0.47	0.01	0.02	0.02	0.00	0.02	0.02	158.02
Building Worker Trips	0.14	0.23	0.03	0.02	0.05	0.01	0.01	0.03	642.26
Coating 01/01/2014-07/31/2015	5.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.07
Architectural Coating	5.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.07
2015	3.23	1.28	0.02	0.08	0.10	0.01	0.07	0.08	592.86
Building 01/01/2014-07/31/2015	0.28	1.28	0.02	0.08	0.10	0.01	0.07	0.08	589.32
Building Off Road Diesel	0.18	0.91	0.00	0.06	0.06	0.00	0.05	0.05	123.21
Building Vendor Trips	0.02	0.24	0.00	0.01	0.01	0.00	0.01	0.01	92.04
Building Worker Trips	0.07	0.12	0.02	0.01	0.03	0.01	0.01	0.01	374.06
Coating 01/01/2014-07/31/2015	2.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.54
Architectural Coating	2.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.54

Phase Assumptions

Phase: Demolition 9/25/2013 - 10/29/2013 - Demolition

Building Volume Total (cubic feet): 810000

Building Volume Daily (cubic feet): 14000

On Road Truck Travel (VMT): 194.44

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Fine Grading 10/30/2013 - 12/11/2013 - Fine Site Grading Description

Total Acres Disturbed: 160.5

Maximum Daily Acreage Disturbed: 40

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

3 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 12/12/2013 - 12/27/2013 - Paving Description

Acres to be Paved: 8.61

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 1/1/2014 - 7/31/2015 - Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 1/1/2014 - 7/31/2015 - Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 130

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 130

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

4/15/2008 7:59:43 AM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\Kurt Legleiter\Application Data\Urbemis\Version9a\Projects\Clovis 4th Ed Center.urb924

Project Name: Clovis 4th Ed Center - Operational

Project Location: Fresno County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.56	0.78	0.00	0.00	922.71

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	12.62	14.02	9.80	2.21	11,610.82

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	13.18	14.80	9.80	2.21	12,533.53

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	PM10	PM2.5	CO2
Natural Gas	0.06	0.77	0.00	0.00	921.95
Hearth	0.00	0.00	0.00	0.00	0.00
Landscape	0.03	0.01	0.00	0.00	0.76
Consumer Products	0.00				
Architectural Coatings	0.47				
TOTALS (tons/year, unmitigated)	0.56	0.78	0.00	0.00	922.71

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	PM10	PM25	CO2
Elementary school	1.56	1.58	1.11	0.25	1,313.15
Junior high school	3.56	3.98	2.78	0.63	3,298.15
High school	7.50	8.46	5.91	1.33	6,999.52
TOTALS (tons/year, unmitigated)	12.62	14.02	9.80	2.21	11,610.82

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

4/15/2008 7:59:43 AM

Analysis Year: 2015 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Elementary school		1.29	students	700.00	903.00	7,025.34
Junior high school		1.62	students	1,400.00	2,268.00	17,645.04
High school		1.71	students	2,900.00	4,959.00	37,514.84
					8,130.00	62,185.22

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	44.2	0.2	99.6	0.2
Light Truck < 3750 lbs	10.7	0.9	95.4	3.7
Light Truck 3751-5750 lbs	21.9	0.5	99.5	0.0
Med Truck 5751-8500 lbs	12.1	0.8	99.2	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.1	0.0	76.2	23.8
Lite-Heavy Truck 10,001-14,000 lbs	0.8	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.4	0.0	14.3	85.7
Heavy-Heavy Truck 33,001-60,000 lbs	2.3	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	3.5	48.6	51.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.8	0.0	87.5	12.5

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Elementary school				20.0	10.0	70.0
Junior high school				20.0	10.0	70.0
High school				10.0	5.0	85.0

GREENHOUSE GAS EMISSIONS SUMMARY

EMISSIONS INVENTORIES	ANNUAL (YEAR 2004) EMISSIONS INVENTORY (CO2e)
CALIFORNIA	5.0E+08

OPERATIONAL EMISSIONS SUMMARY - PROPOSED PROJECT				
	CO2 EQUIV TONS/YR			
SOURCE	CO2	N20	CH4	TOTAL
MOTOR VEHICLES	10,533.1	538.0	26.7	11,097.8
ELECTRICITY USE	2,664.1	3.8	6.9	2,674.8
NAT GAS	837.5	0.2	0.9	838.7
			TOTAL CO2 EQUIV (TONS/YR):	14,611.3
			PERCENT OF CA INVENTORY:	0.003

ELECTRICITY

		GHG EMISSIONS (TONS/YR)			**CO2 EQUIV EMISSIONS (TONS/YR)**			
SOURCE	ELECTRICITY USE (MWH/YR)	CO2	N20	CH4	CO2	N20	CH4	TOTAL
PROPOSED PROJECT	6,623	2,664.1	0.0	0.0	2,664.1	3.8	6.9	2,674.8
NOTES: Based on ratio of state-wide emissions calculated based on percentage of statewide energy use according to ratio from US Bureau of the Census, California Dept. of Finance, Population Estimates.								

NATURAL GAS

					CO2 EQUIVALENT (TONS/YR)			
	NATURAL GAS USE(THERMS/YR)	N20 (TONS/YEAR)	CH4 (TONS/YEAR)	CO2 (TONS/YR)	CO2 (TONS/YR)	N20 (TONS/YEAR)	CH4 (TONS/YEAR)	TOTAL (N2O,CH4,CO2)
PROPOSED PROJECT	66,227.7	0.00	0.04	921.95	836.4	0.2	0.9	837.5
CO2 emissions calculated using the URBEMIS2007 computer program. CH4 AND N20 emission factors derived from CA Climate Change Action Registry General Reporting Protocol, Version 2.2, March 2007; Appn C, Table C-1.								

MOBILE-SOURCE EMISSIONS

N20 & CH4 **GASOLINE**

			CH4		N2O	
VEHICLE TYPE	**VEH. FLEET MIX**	**FUEL FRACTION**	**EMFAC**	**WT EMFAC**	**EMFAC**	**WT EMFAC**
Light Auto	0.442	0.996	0.040	0.018	0.040	0.018
Light Truck < 3750 lbs	0.107	0.954	0.050	0.005	0.060	0.006
Light Truck 3751-5750 lbs	0.219	0.995	0.050	0.011	0.060	0.013
Med Truck 5751-8500 lbs	0.121	0.992	0.120	0.014	0.200	0.024
Lite-Heavy Truck 8501-10,000 lbs	0.021	0.762	0.120	0.002	0.200	0.003
Lite-Heavy Truck 10,001-14,000 lbs	0.008	0.500	0.120	0.000	0.200	0.001
Med-Heavy Truck 14,001-33,000 lbs	0.014	0.143	0.120	0.000	0.200	0.000
Heavy-Heavy Truck 33,001-60,000 lbs	0.023	0.000	0.120	0.000	0.200	0.000
Other Bus	0.001	0.000	0.120	0.000	0.200	0.000
Urban Bus	0.000	0.000				
Motorcycle	0.035	0.514	0.090	0.002	0.010	0.000
School Bus	0.001	0.000	0.120	0.000	0.200	0.000
Motor Home	0.008	0.875	0.120	0.001	0.200	0.001
				0.053		0.067

Vehicle fleet mix derived from URBEMIS2007 (version 9.2.2) computer program. Emission factors derived from California Climate Action Registry General Reporting Protocol, Version 2.2, March 2007.

N20 & CH4 **DIESEL**

			CH4		N2O	
VEHICLE TYPE	**VEH. FLEET MIX**	**FUEL FRACTION**	**EMFAC**	**WT EMFAC**	**EMFAC**	**WT EMFAC**
Light Auto	0.442	0.002	0.010	0.000	0.040	0.000
Light Truck < 3750 lbs	0.107	0.037	0.010	0.000	0.060	0.000
Light Truck 3751-5750 lbs	0.219	0.000	0.010	0.000	0.060	0.000
Med Truck 5751-8500 lbs	0.121	0.000	0.060	0.000	0.200	0.000
Lite-Heavy Truck 8501-10,000 lbs	0.021	0.238	0.060	0.000	0.200	0.001
Lite-Heavy Truck 10,001-14,000 lbs	0.008	0.500	0.060	0.000	0.200	0.001
Med-Heavy Truck 14,001-33,000 lbs	0.014	0.857	0.060	0.001	0.200	0.002
Heavy-Heavy Truck 33,001-60,000 lbs	0.023	1.000	0.060	0.001	0.200	0.005
Other Bus	0.001	1.000	0.060	0.000	0.200	0.000
Urban Bus	0.000	0.000				
Motorcycle	0.035	0.000	0.090	0.000	0.010	0.000
School Bus	0.001	1.000	0.060	0.000	0.200	0.000
Motor Home	0.008	0.125	0.060	0.000	0.200	0.000
				0.003		0.010

Vehicle fleet mix derived from URBEMIS2007 (version 9.2.4) computer program for Fresno County, year 2015. Emission factors derived from California Climate Action Registry General Reporting Protocol, Version 2.2, March 2007.

	TOTAL (tons/yr)	TOTAL (Mtons/yr)
CO2	11,610.8	10533.1037
GWP		1
Annual CO2e		10,533.1
SOURCE: URBEMIS2007, VERSION 9.2.4		

MOBILE-SOURCE EMISSIONS SUMMARY

		Composite EMFACs (g/mi)		Tons (short)/Year			CO2e (Tons/Year)			
	ANNUAL VMT	CH4	N2O	CH4	N2O	CO2	CH4	N2O	CO2	TOTAL
Mobile-Source Emissions	2.27E+07	0.056	0.076	1.4	1.9	10,533.1	26.7	538.0	10,533.1	11,097.8

Based on an increase of 62185.22 miles/day obtained from the Urbemis modeling conducted for this project.

ELECTRICITY USAGE RATES - PG&E FCZ3								
END USE	PROPOSED PROJECT (DU/KSF)	UNIT	CEC's EUFS END-USE FLOOR STOCK - SEGMENT TOTAL (KSF)	CEC's ANNUAL ENERGY USAGE SEGMENT TOTAL (GWh)	CALCULATED ANNUAL AVG USAGE RATE/UNIT		PROPOSED PROJECT TOTAL	
School	750	KSF	39,636	350	8,830	KWh/KSF	6,622,767	kWh
						Sum	6,622,767	kWh
Derived from California Energy Commission. 2008. California Commercial End-Use Survey. http://capabilities.itron.com/CeusWeb/Chart.aspx, based on annual summary statistics.								

NATURAL GAS USAGE RATES - PG&E FCZ3								
END USE	PROPOSED USE	UNIT	CEC's EUFS END-USE FLOOR STOCK - SEGMENT TOTAL (KSF)	CEC's ANNUAL ENERGY USAGE SEGMENT TOTAL (10k Therms)	CALCULATED ANNUAL AVG USAGE RATE/UNIT		PROPOSED PROJECT TOTAL	
School	750	KSF	39,636	350	88	therms/year/KSF	66,228	therms
						Sum	66,228	therms
Derived from California Energy Commission. 2008. California Commercial End-Use Survey. http://capabilities.itron.com/CeusWeb/Chart.aspx, based on annual summary statistics.								

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Appendix

11-1

Noise Prediction Modeling

```
    TRAFFIC DISTRIBUTION PERCENTAGES
    DAY       EVENING    NIGHT
    ---       -------    -----
AUTOS
    75.51     12.57      9.34
M-TRUCKS
    1.56      0.09       0.19
H-TRUCKS
    0.64      0.02       0.08
```

EXISTING

```
SHIELDS, LOCAN TO DW
ADT: 2060     SPEED: 45     ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT    GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 57.38
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL  65 CNEL  60 CNEL  55 CNEL
-------  -------  -------  -------
  0.0      0.0      56.2     120.5

SHIELDS, DW TO LEONARD
ADT: 2180     SPEED: 45     ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT    GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 57.63
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL  65 CNEL  60 CNEL  55 CNEL
-------  -------  -------  -------
  0.0      0.0      58.3     125.1

SHIELDS, LEONARD TO HIGHLAND
ADT: 1040     SPEED: 45     ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT    GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 54.41
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL  65 CNEL  60 CNEL  55 CNEL
-------  -------  -------  -------
  0.0      0.0      0.0      76.5

LEONARD, SHEIDLS TO CLINTON
ADT: 520      SPEED: 45     ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT    GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 51.40
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL  65 CNEL  60 CNEL  55 CNEL
-------  -------  -------  -------
  0.0      0.0      0.0      0.0

LEONARD, CLINTON TO MCKINLEY
ADT: 520      SPEED: 45     ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT    GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 51.40
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL  65 CNEL  60 CNEL  55 CNEL
-------  -------  -------  -------
  0.0      0.0      0.0      0.0
```

HIGHLAND, SHIELDS TO PROJECT SITE
ADT: 610 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 52.10
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 0.0 53.8

HIGHLAND PROJECT SITE TO MCK
ADT: 650 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 52.37
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 0.0 56.1

MCK, TEMPERENCE TO DW
ADT: 2720 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 58.59
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 67.5 144.9

MCK, DW TO FANCHER
ADT: 2700 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 58.56
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 67.2 144.2

MCK FANCHER TO THOMPSON
ADT: 3080 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 59.13
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 73.3 157.4

FANCHER, MCK TO OLIVE
ADT: 930 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 53.93
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 0.0 71.1

LEONARD, SHIELDS TO ASHLAN
ADT: 730 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 52.88
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 0.0 60.6

HIGHLAND, SHIELDS TO ASHLAN
ADT: 610 SPEED: 45 ACTIVE HALF WIDTH (FT): 6

SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 52.10
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 0.0 53.8

DW, SHIELDS TO CLINTON
ADT: 1070 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 54.54
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 0.0 78.0

DW, CLINTON TO MCK
ADT: 1070 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 54.54
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 0.0 78.0

EXISTING PLUS PROJECT

SHIELDS, LOCAN TO DW
ADT: 3340 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 59.48
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 77.3 166.2

SHIELDS, DW TO LEONARD
ADT: 3010 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 59.03
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 72.2 155.1

SHIELDS, LEONARD TO HIGHLAND
ADT: 1420 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 55.77
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 0.0 94.1

LEONARD, SHEIDLS TO CLINTON
ADT: 2070 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 57.40
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 56.4 120.9

LEONARD, CLINTON TO MCKINLEY
ADT: 2600 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 58.39
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 65.5 140.7

HIGHLAND SHIELDS TO PROJ
ADT: 1250 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 55.21
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 0.0 86.5

HIGHLAND PROJ TO MCK
ADT: 1470 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 55.92
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 0.0 96.3

MCK TEMPERENCE TO DW
ADT: 4820 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 61.07
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 98.6 212.1

MCK DW TO FANCHER
ADT: 4600 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 60.87
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 95.6 205.6

MCK FANCHER TO THOMPSON
ADT: 3270 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 59.39
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 76.2 163.8

FANCHER MCK TO OLIVE
ADT: 1680 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 56.50
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 0.0 105.2

LEONARD SHIELDS TO ASHLAN

ADT: 1450 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 55.86
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
--- --- --- ---
0.0 0.0 0.0 95.4

HIGHLAND SHIELDS TO ASHLAN
ADT: 1050 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 54.46
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
--- --- --- ---
0.0 0.0 0.0 77.0

DW SHIELDS TO CLINTON
ADT: 1760 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 56.70
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
--- --- --- ---
0.0 0.0 50.7 108.5

DW CLINTON TO MCK
ADT: 2540 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 58.29
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
--- --- --- ---
0.0 0.0 64.5 138.5

CUMULATIVE WITHOUT PROJECT

SHIELDS, LOCAN TO DW
ADT: 9110 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.84
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
--- --- --- ---
0.0 70.1 150.6 324.2

SHIELDS, DW TO LEONARD
ADT: 12670 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 65.27
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
--- --- --- ---
0.0 87.2 187.6 403.9

SHIELDS, LEONARD TO HIGHLAND
ADT: 8690 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.63
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
--- --- --- ---
0.0 68.0 145.9 314.1

LEONARD, SHEIDLS TO CLINTON

ADT: 7800 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.17
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 63.3 135.8 292.3

LEONARD, CLINTON TO MCKINLEY
ADT: 7800 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.17
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 63.3 135.8 292.3

HIGHLAND SHIELDS TO PROJ
ADT: 10820 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 64.59
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 78.6 168.9 363.5

HIGHLAND PROJ TO MCK
ADT: 10150 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 64.31
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 75.3 161.8 348.4

MCK TEMPERENCE TO DW
ADT: 15760 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 66.22
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 100.8 216.9 467.1

MCK DW TO FANCHER
ADT: 12610 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 65.25
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 87.0 187.0 402.6

MCK FANCEHR TO THOMP
ADT: 6890 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 62.63
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 58.3 125.0 269.1

FANCER, MCK TO OLIVE
ADT: 4100 SPEED: 45 ACTIVE HALF WIDTH (FT): 6

SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 60.37
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 88.6 190.5

LEONARD SHEILDS TO ASHLAN
ADT: 9190 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.88
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 70.5 151.5 326.1

HIGHLAND SHIELDS TO ASHLAN
ADT: 11370 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 64.80
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 81.2 174.5 375.7

DWSHILES TO CLINTON
ADT: 5260 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 61.45
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 104.5 224.9

DW CLINTON TO MCK
ADT: 5260 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 61.45
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 104.5 224.9

<u>CUMULATIVE WITH PROJECT</u>

SHIELDS, LOCAN TO DW
ADT: 10390 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 64.41
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 76.5 164.4 353.8

SHIELDS, DW TO LEONARD
ADT: 13500 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 65.55
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 91.0 195.7 421.3

SHIELDS, LEONARD TO HIGHLAND
ADT: 8860 SPEED: 45 ACTIVE HALF WIDTH (FT): 6

SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.72
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 68.8 147.8 318.2

LEONARD, SHEIDLS TO CLINTON
ADT: 9370 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.96
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 71.4 153.4 330.3

LEONARD, CLINTON TO MCKINLEY
ADT: 9370 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.96
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 71.4 153.4 330.3

HIGHLAND SHIELDS TO PROJ
ADT: 11460 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 64.84
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 81.6 175.4 377.7

HIGHLAND PROJ TO MCK
ADT: 10780 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 64.57
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 78.4 168.4 362.6

MCK TEMP TO DW
ADT: 17860 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 66.76
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
51.1 109.6 235.7 507.6

MCK DW TO FANCHER
ADT: 14510 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 65.86
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 95.5 205.3 442.1

MCK FANCHER TO THOMP
ADT: 7550 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.02
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 61.9 132.9 286.0

FANCHER MCK TO OLIVE
ADT: 4850 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 61.10
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 0.0 99.0 213.0

LEONARD SHIELDS TO ASHLAN
ADT: 10010 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 64.25
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 74.6 160.3 345.2

HIGHALN SHIELDS TO ASHLAN
ADT: 12010 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 65.04
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 84.2 181.0 389.7

DW SHILEDS TO CLINTON
ADT: 6730 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 62.52
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 57.4 123.1 264.9

DW CLINTON TO MCK
ADT: 6730 SPEED: 45 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 75 FT FROM NEAR TRAVEL LANE CENTERLINE = 62.52
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------ ------ ------ ------
0.0 57.4 123.1 264.9

Typical Stadium Noise Levels

Location	Measured dBA Leq	Predicted dBA Leq at 500 feet	Distance to Predicted 60 dBA Leq Noise Contour (No Shielding)	Notes
Recreational Events				
Tustin High School[1]				Measured 11/17/00. Stadium is "open bleacher design", PA partially localized (i.e., few speakers) mounted on lighting stanchions at a height of approximately 40 feet.
In-line with Field-300 feet	67.8	63.4	775	
In-line with Field-300 feet	63.7	59.3	485	
Side of Field-250 feet	71.0	65.0	835	
Side of Field-250 feet	68.9	63.9	735	
Irvine High School[1]				Measured 10/12/01. Stadium is build-up berm with concrete "closed bleachers"; many localized PA speakers at height of approximately 20 feet
In-line with Field-230 feet	71.2	64.5	785	
In-line with Field-108 feet	71.8	62.9	440	
Top of Bleachers-50 feet	77.9	57.9	415	
To Side of Field-330 feet	61.0	57.4	390	
Mission Viejo High School[1]				Measured 11/16/01. North side of stadium is built-up berm with concrete "closed bleachers"; "open bleacher design on south side; many "localized speakers" at a height of approximately 20 feet.
In-line with Field-135 feet	70.2	58.8	410	
Top of Bleachers-100 feet	75.6	61.6	640	
Santa Ana Stadium[1]				Measured 11/30/01. Stadium is built-up concrete "closed speakers"; "Centralized" PA system on scoreboard.
In-line with Field-200 feet	79.8	71.8	2,050	
In-line with Field-400 feet	72.8	70.9	1,850	
Natomas High School[2]				Measured 09/14/06. "Open bleachers"; "localized speakers" at height of approximately 20 feet and "central speaker" in bleachers. Included PA system, musical instruments in bleacher section
In-line with Field-400 feet from center of field/main bleachers	65.8	63.9	815	
Musical/Band Presentations				
Irvine High School[1]				
Top of Bleachers-50 feet	78.1	58.1	425	Marching band during half-time
Santa Ana Stadium[1]				
In-line with Field-200 feet	84.4	76.4	3,100	Pre-game show with PA and dance squad
Natomas High School[2]				
In-line with Field-400 feet from center of field/main bleachers	69.2	67.3	1,200	Marching band during half-time

1. Source: Santa Ana Unified School District, August 16, 2005. Segerstrom High School Expansion Project SEIRS.
2. Measurements conducted by AMBIENT Air Quality & Noise Consulting using a Larson Davis Type 1, Model 820 sound level meter placed at a height of 4.5 feet above ground surface.