DRAFT ENVIRONMENTAL IMPACT REPORT

MERCED UNION HIGH SCHOOL DISTRICT
BELLEVUE ROAD AREA HIGH SCHOOL

August 2007

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Draft EIR Revisions and Recirculation Process

The Merced Union High School District has determined that an EIR must be prepared for the proposed Bellevue Road Area High School project in accordance with the requirements of CEQA. On September 5, 2005 a Notice of Preparation (NOP) was circulated for review and comment by responsible, trustee, and local agencies. A copy of the Notice of Preparation is included in Appendix A of this EIR.

This document is a revision of the Draft EIR for the project. The Draft EIR was circulated from July 3, 2006 through August 3, 2006. The Draft is being revised and recirculated in order to provide to the public, to lead agency decision makers, and to responsible and trustee agencies supplemental and clarifying information regarding the project and its potential environmental effects.

In accord with CEQA Guidelines Section 15088.5, Merced Union High School District has elected not to respond to comments made or received during the earlier Draft EIR circulation period. Although such comments remain part of the administrative record, new comments should be submitted, if applicable, for this revised and recirculated Draft EIR.

Further consultation with responsible and trustee agencies has been requested. A noticed public hearing on the revised Draft EIR will be scheduled.

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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

Project Description

The proposed project (herein referred to as *Bellevue High School*) is located in northeast Merced, Merced County, California (Figures 1 and 2). The Bellevue High School will provide classroom space for up to 2,000 students (with the ability to expand, if necessary, to 2,400 students) in grades 9 through 12, and school staff of approximately 100 on a 58-acre site. Buildings will total approximately 190,000 square feet, with a gymnasium building, cafeteria, administration building, and a total of 83 classrooms in 2-story classroom wings. These buildings and related improvements will be constructed in one phase. The preliminary site plan drawing is enclosed.

As additional funding becomes available in the future, a 4,000 seat athletic stadium (used primarily for football, soccer and track) is planned as phase two. The environmental impacts of this proposed stadium are included in this EIR.

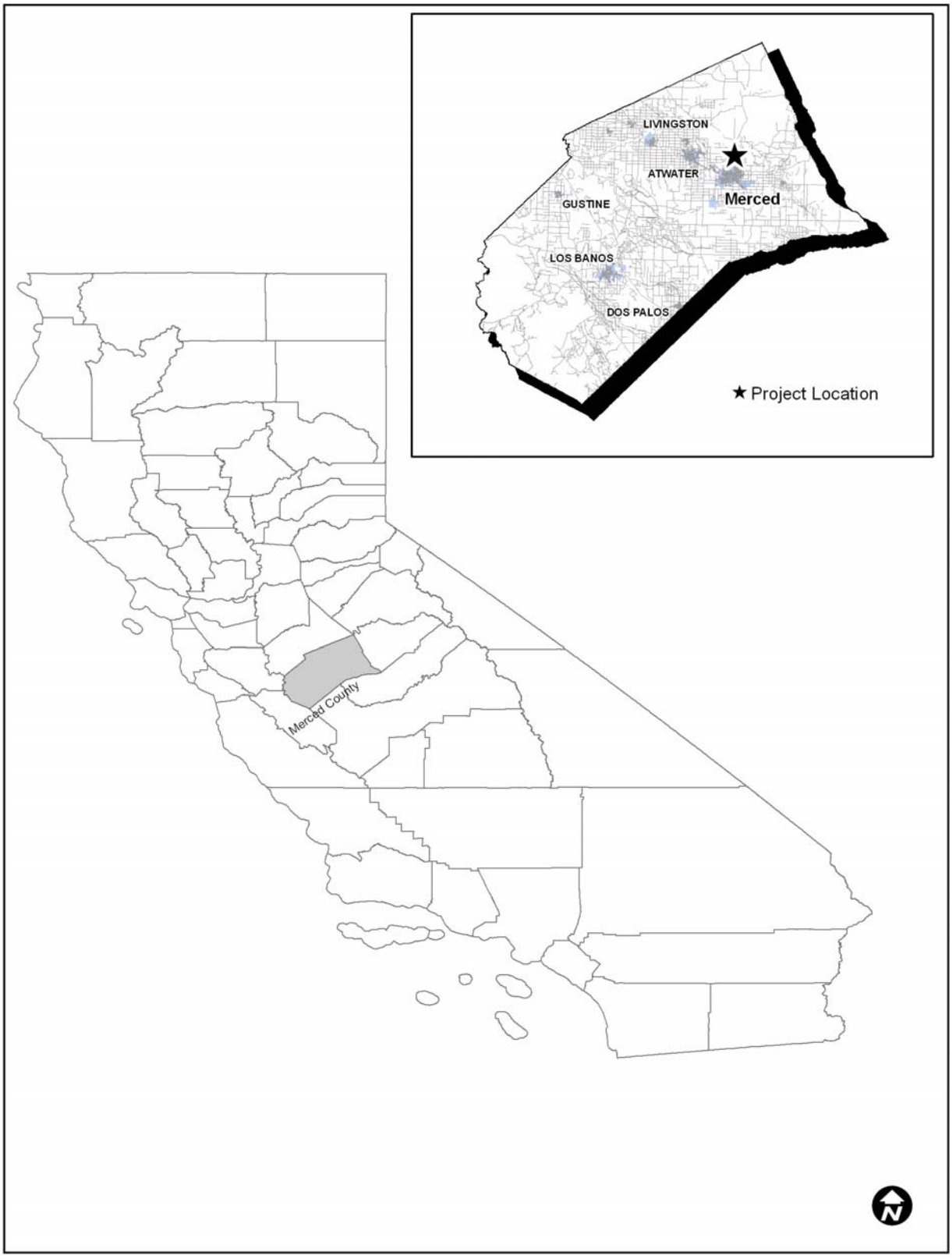
Buildings will occupy approximately ten percent of the site; parking and roadways, twenty percent; workways, twenty percent; and athletic facilities, fifty percent. Approximately 562 parking spaces will be provided on site and will include new roadways (Barclay Avenue and Farmland Avenue). In accordance with the Bellevue Ranch Master Development Plan, an open space buffer zone is provided along Fahrens Creek.

Project Objectives

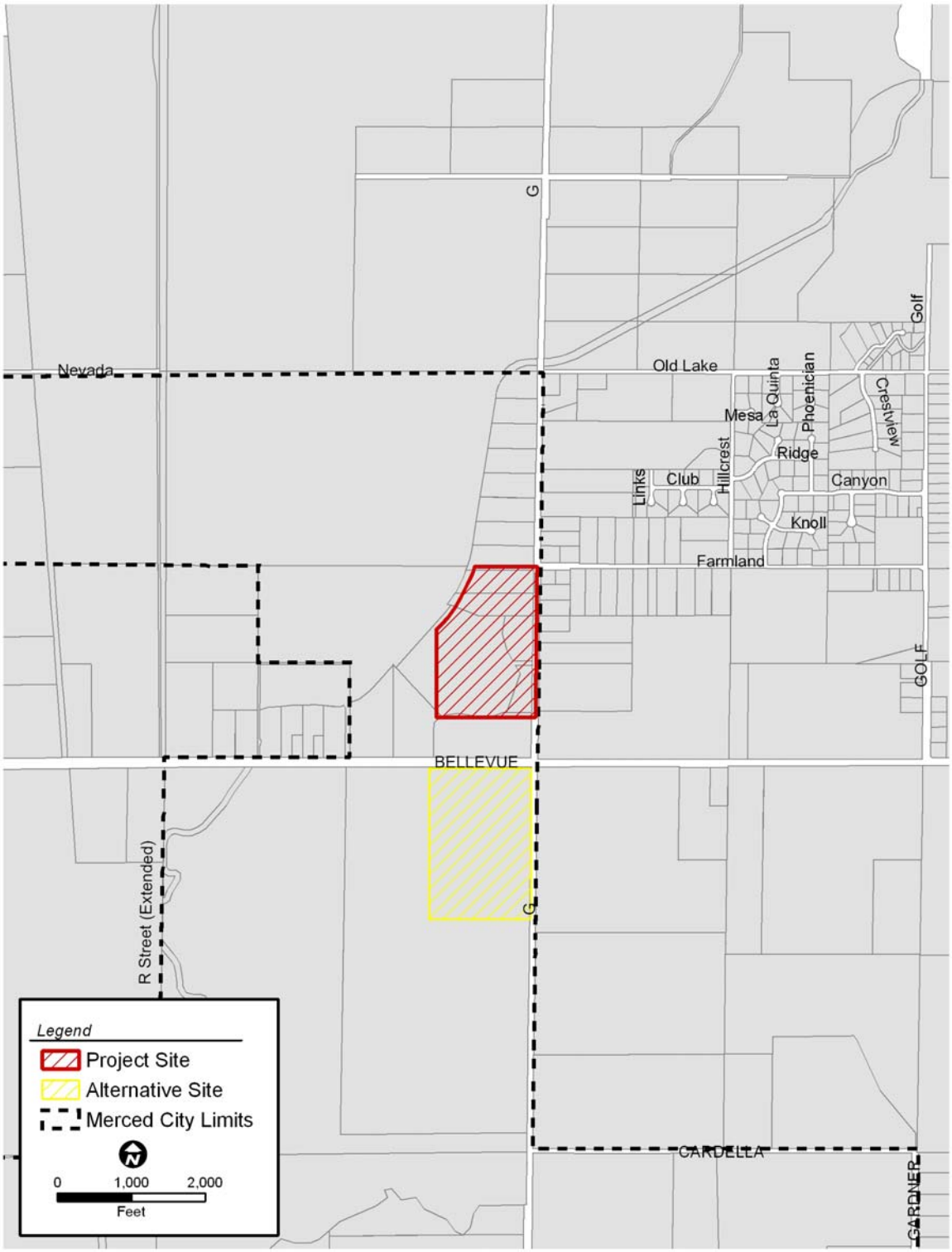
The objective of this project is to provide a new High School for the current and projected increase in population and student enrollment within the Merced Union High School District.

Summary of Impacts and Mitigation Measures

Section 15123(b)(1) of the *Guidelines for Implementation of the California Environmental Quality Act* (State CEQA Guidelines) provides that the summary shall identify each significant effect with proposed mitigation measures that would reduce or avoid that effect. This information is summarized in Table ES-1, Summary of Potential Impacts, Mitigation Measures, and Mitigation Monitoring Program, and Table ES-2, Summary of Mitigation Measures Included in the Bellevue Ranch EIR that Must be Implemented for the Bellevue High School. Both of these tables are at the end of this Executive Summary.



Quad Knopf	REGIONAL LOCATION	Figure ES - 1



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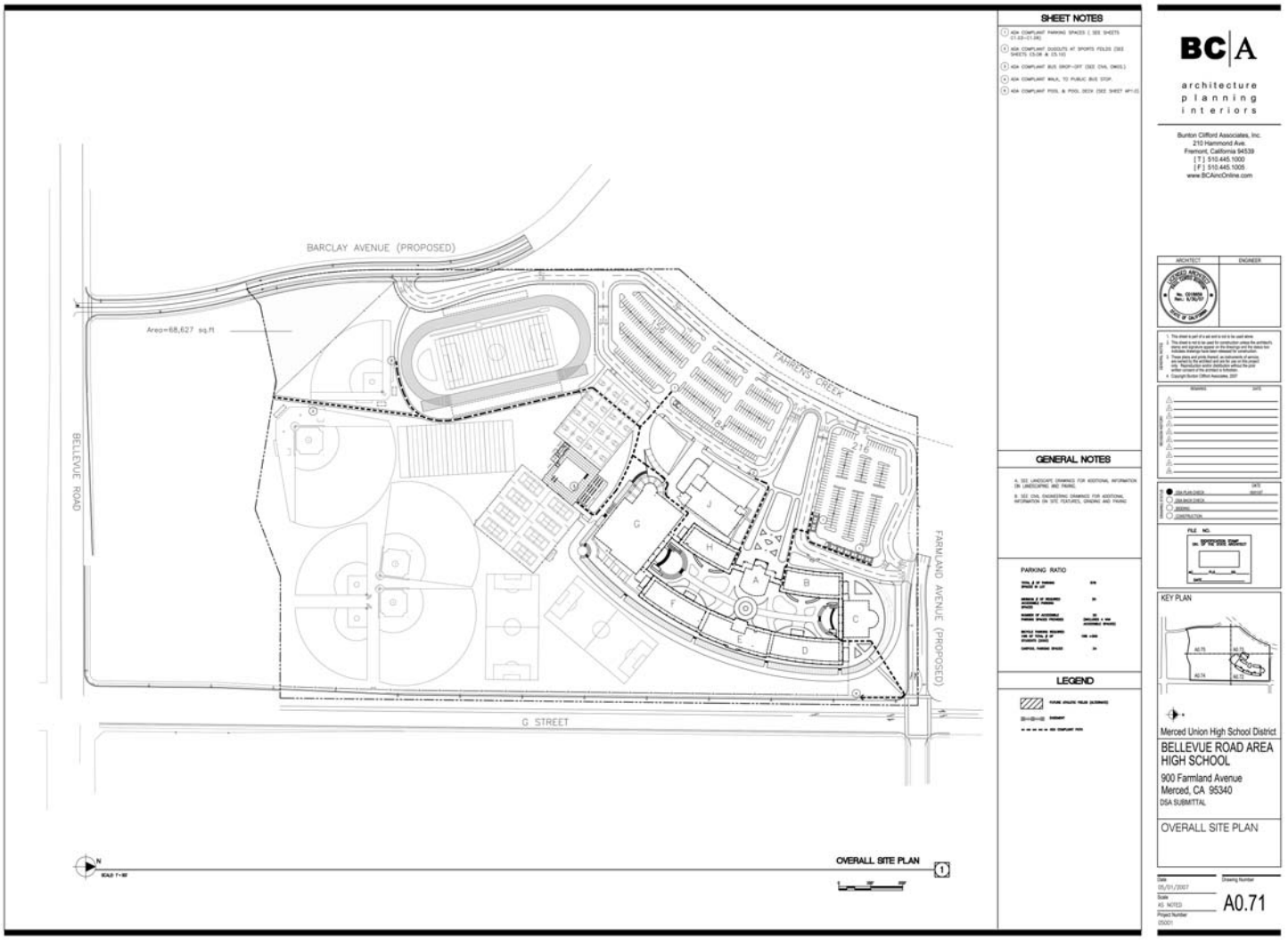
VICINITY MAP

Figure ES - 2



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SITE PLAN

Figure ES - 3

Potential Areas of Controversy

Potential Areas of Controversy and Issues to be Resolved Based on the responses to the Initial Study/Notice of Preparation, public scoping meetings, and other responses, the following issues are considered to be the most likely to produce controversy in reviewing and considering the proposed project:

- Aesthetics
- Air Quality
- Biological Resources
- Traffic
- Water Supply
- Utilities
- Alternatives Analysis
- Cumulative Impacts
- Noise

Alternatives to the Proposed Project

Section 15126.6 of the State CEQA Guidelines requires the EIR to describe a reasonable range of alternatives to the project or to the location of the project which would reduce or avoid significant impacts, and which could feasibly accomplish the basic objectives of the project, and to evaluate the comparative merits of the alternatives. Alternatives that would reduce or avoid significant impacts represent environmentally superior alternatives to the proposed project. However, if the environmentally superior alternative is the 'no project" alternative, the EIR must also identify an environmentally superior alternative among the other alternatives.

The project alternatives include:

- No Project - With this alternative, the high school would not be built. This alternative does not achieve the basic objective of the project, although traffic and air quality impacts are eliminated. Based upon the analysis contained and documented in this EIR, the no-project alternative is environmentally superior, but it does not achieve the project objective.

- Alternate Sites – Under this alternative, 4 sites elsewhere in the City of Merced are evaluated. The Project Site was selected as the proposed first school site based on its central location, existing accessibility, feasibility of the site acquisition, and the District's size and access criteria as well as the access criteria. No reductions in overall significant impacts could be identified for the alternate sites.

Table ES-1
Mitigation Monitoring and Reporting Program

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
Impact #3.1-1 - Create a new source of substantial light or glare which would adversely affect day or night time views in the area.	**Mitigation Measure #3.1-1:** Lighting will be designed to avoid direct lighting of off-site areas and to reduce associated glare to surrounding areas. A lighting plan will be developed by a registered illumination engineer, which demonstrates that the resultant lighting levels conform to the following standards: ▪ Off site lighting and glare will be limited to no more than 0.5 foot-candle illumination (0.5 lumen per square foot). Lighting on-site shall be limited to no more than 7 footcandle illumination, except directly within the stadium and athletic fields. ▪ All lighting fixtures on the perimeter of the project shall be outfitted with hoods and cut-off lenses so that the light source itself is not visible to the naked eye from neighboring properties or to drivers or pedestrians from neighboring streets. The developer shall submit a lighting plan, which demonstrates that the resultant lighting levels conform to this standard before issuance of a Building Use Permit. ▪ All yard, security and canopy lighting in excess of 150 watts shall be hooded or shielded so that it is not visible to the naked eye form adjacent properties.	Project architect/engineer	This measure shall be included in the District's construction plans and specifications. Monitoring shall be accomplished by the District by review of these documents prior to construction and site inspection following construction.	Prior to issuance of building permits for lighting and prior to occupancy.
Impact # 3.2-1 - Loss of Prime Farmland.	**Mitigation Measure #3.2-1:** There are no mitigation measures for the loss of prime farmland. The loss of Prime Farmland will be ***significant and unavoidable.***	N/A	N/A	N/A

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
Impact #3.3-1 - Construction Emissions - Particulate Matter.	**Mitigation Measure #3.3-1:** The Mandatory Control measures provided in Table 3.3-4 shall be implemented to reduce construction emissions. The following control measures shall also be implemented to reduce particulate matter emissions: ▪ Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent. ▪ Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use. ▪ Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways. (For curtailment during periods of high ambient pollutant concentrations, the criteria should be set in terms of the Air Quality Index.)	Construction Contractor/ Applicant	Monitoring shall be the responsibility of the SJVAPCD.	Ongoing during construction.

Table 3.3-4
Mandatory Control Measures for Construction, Excavation, Extraction, and Other Earthmoving Activities

A. Pre-Activity:

A1: Pre-water site sufficient to limit Visible Dust Emissions (VDE) to 20% opacity

A2: Phase work to reduce the amount of disturbed surface area at any one time.

B. During Active Operations:

B1: Apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20% opacity

B2: Construct and maintain wind barriers sufficient to limit VDE to 20% opacity. If utilizing wind barriers, control measure B1 above shall also be implemented.

B3: Apply water or chemical/organic stabilizers/suppressants to unpaved haul/access roads and unpaved vehicle/equipment traffic areas sufficient to limit VDE to 20% opacity and meet the conditions of a stabilized unpaved road surface.

C. Temporary Stabilization During Periods Of Inactivity:

C1: Restrict vehicular access to the area

C2: Apply water or chemical/organic stabilizers/suppressants, sufficient to comply with the conditions of a stabilized surface. If an area having 0.5 acres or more of disturbed surface area remains unused for seven or more days, the area must comply with the conditions for a stabilized surface area as defined below:

Stabilized Surface: any disturbed surface area or open bulk material storage pile that is resistant to wind blown fugitive dust emissions. A surface is considered to be stabilized if it meets at least one of the following conditions:

- A visible crust; or
- A threshold friction velocity (TFV) for disturbed surface areas corrected for non-erodible elements of 100 centimeters per second or greater; or
- A flat vegetative cover of at least 50 percent that is attached or rooted vegetation; or unattached vegetative debris lying on the surface with a predominant horizontal orientation that is not subject to movement by wind; or
- A standing vegetative cover of at least 30 percent that is attached or rooted vegetation with a predominant vertical orientation; or
- A standing vegetative cover that is attached or rooted vegetation with a predominant vertical orientation that is at least 10 percent and where the TFV is at least 43 centimeters per second when corrected for nonerodible elements; or
- A surface that is greater than or equal to 10 percent of non-erodible elements such as rocks, stones, or hard-packed clumps of soil.

D. Speed Limitations and Posting of Speed Limit Signs

D1: Limit the speed of vehicles traveling on uncontrolled unpaved access/haul roads within construction sites to a maximum of 15 miles per hour.

D2: Post speed limit signs that meet State and Federal Department of Transportation standards at each construction site's uncontrolled unpaved access/haul road entrance. At a minimum, speed limit signs shall also be posted at least every 500 feet and shall be readable in both directions of travel along uncontrolled unpaved access/haul roads.

E. Wind Generated Fugitive Dust Requirements

E1: Cease outdoor construction, excavation, extraction, and other earthmoving activities that disturb the soil whenever VDE exceeds 20% opacity. Indoor activities such as electrical, plumbing, dry wall installation, painting, and any other activity that does not cause any disturbances to the soil are not subject to this requirement.

E2: Continue operation of water trucks/devices when outdoor construction excavation, extraction, and other earthmoving activities cease, unless unsafe to do so.

Table ES-1
Mitigation Monitoring and Reporting Program (Continued)

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
Impact #3.3.2 – Construction Emissions - Gaseous Emissions.	**Mitigation Measures #3.3-2:** The following measures from the GAMAQI (January 2002) shall be implemented in order to reduce gaseous construction emissions: ▪ Use alternative fueled or catalyst equipped diesel construction equipment where feasible. ▪ Minimize idling time to a maximum of 10 minutes. ▪ Where feasible, replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable fossil fuel generator set). ▪ Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways.	Construction Contractor/ Applicant	Monitoring shall be the responsibility of the SJVAPCD.	Ongoing during construction and prior to occupancy for improvements.
Impact #3.3-3 - Operational Air Emissions.	**Mitigation Measure #3.3-3:** Require the following design features be implemented: ▪ Use energy efficient design including automated control system for heating/air conditioning and energy efficiency, utilize lighting controls and energy-efficient lighting in buildings and use light colored roof materials to reflect heat.	Construction Contractor/ District Inspector	The Districts construction inspector to enforce the provisions as set forth in the contractor agreement.	Ongoing during construction and prior to occupancy for improvements.

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	▪ Plant deciduous trees on the south and westerly facing sides of buildings. ▪ Provide low nitrogen oxide (NOx) emitting and/or high efficiency water heaters. ▪ Purchase low-emission, alternatively-fueled or electrical-driven maintenance vehicles and equipment. ▪ Promote pedestrian, bicycle and transit modes of travel through informational programs and provision of amenities such as transit shelters, secure bicycle parking and attractive pedestrian pathways. ▪ Designate an on-site Transportation Systems Management coordinator. ▪ Implement carpool/vanpool program, e.g., carpool ride-matching for employees, assistance with vanpool formation, provision of vanpool vehicles, student carpooling incentives, etc. ▪ Coordinate with the local transit operators to extend or expand service to the Project Area. ▪ Provide transit use incentives, provide transit alternatives information such as printed schedules and establish transit information kiosks at appropriate locations. ▪ Implement parking cash-out program for employees (non-driving employees receive			

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	transportation allowance equivalent to the value of subsidized parking). ▪ Provide showers and lockers for employees bicycling or walking to work.			
Impact #3.4-1a - Development Of The Project Would Have A Potentially Significant Adverse Impact On Nesting Raptors.	**Mitigation Measure #3.4-1a:** If construction would commence between March 1 and September 1, surveys should be conducted 30 days prior to construction of the project. The raptor nesting surveys shall include examination of all trees and shrubs within the area of influence of the proposed project. For the purposes of this document, the "area of influence" is within 1,000 feet of the project site. If nesting raptors are identified during the surveys on the project site, the dripline of the nest tree or shrub must be fenced with orange construction fencing and a 300-foot radius buffer around the nest tree or shrub must be fenced with bright orange construction fencing. This 300-foot buffer may be reduced in size if a qualified raptor biologist determines through monitoring that the nesting raptors are acclimated to people and disturbance, and otherwise would not be adversely affected by construction activities. At a minimum, however, the non-disturbance buffer shall be a radius of 100 feet around the nest tree or shrub. If the nest site is on an adjacent property, the portion of the buffer that occurs on the project site shall be fenced with orange construction fencing. When construction buffers are reduced in size, the raptor biologist shall monitor distress levels of the nesting birds while the birds nest and construction persists. If at any time the nesting raptors show levels of distress that could cause	District/Construction Contractor	Monitoring shall be the responsibility of the California Department of Fish and Game.	Prior to issuance of building permits and ongoing enforcement during construction.

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	nest failure or abandonment, the raptor biologist shall have the right to re-implement the full 300-foot buffer. Instances when the buffer could be reduced in size would be if the raptors were well acclimated to disturbance and/or if there were physical barriers between the nest site and the construction project that would reduce disturbance to the nesting raptors. No construction or earth-moving activity should occur within the non-disturbance buffer until it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by July 1st. Regardless, the resource agencies consider September 1st the end of the nesting period unless otherwise determined by a qualified raptor biologist. Once the raptors have completed the nesting cycle, that is the young have reached independence of the nest, no further regard for the nest site shall be required. No other compensatory mitigation is required. When implemented these mitigation measures would reduce impacts to nesting raptors to a level considered *less than significant*.			
Impact #3.4-1b - Development Of The Project Would Have A Potentially Significant Adverse Effect On The Swainson's Hawk.	**Mitigation Measure #3.4-1b - Mitigation for Swainson's Hawk:** CDFG has prepared guidelines for conducting surveys for Swainson's hawk entitled: Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (CDFG 2000). These survey recommendations were developed by the Swainson's Hawk Technical Advisory Committee (TAC) to	District/Construction Contractor	Monitoring shall be the responsibility of the California Department of Fish and Game.	Prior to issuance of building permits and ongoing enforcement during construction.

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	maximize the potential for locating nesting Swainson's hawks, and thus reduce the potential for nest failures as a result of project activities and/or disturbances. To meet the CDFG's recommendations for mitigation and protection of Swainson's hawks, surveys should be conducted for a half-mile radius around all project activities and should be completed for at least the two survey periods immediately prior to a project's initiation. The guidelines provide specific recommendations regarding the number of surveys based on the project is scheduled to begin and the time of year the surveys are conducted. If Swainson's hawks are found to be nesting on or in the immediate vicinity of the project site, consultation with CDFG and mitigation compensation would be required. At that time, the necessity of acquiring a Fish and Game Section 2081 management authorization should be determined. CDFG has prepared a *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California* (CDFG 1994) (hereinafter the Mitigation Guidelines) that prescribes avoidance and mitigation guidelines for impacts to Swainson's hawk nesting and foraging habitats. The Mitigation Guidelines require applicants to replace any impacted Swainson's hawk nesting and/or foraging habitat with other suitable Swainson's hawk nesting/foraging habitat. Because there is extensive foraging habitats for Swainson's hawks north and northeast of the project site in a local perspective, Merced Unified School District has determined that impacting potential agricultural foraging habitat from implementation of the project would not			

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	constitute a significant adverse impact pursuant to the CEQA. However, if Swainson's hawks nest on or within the area of influence of the project site (within 1,000 feet of the project site), impacts to nesting Swainson's hawks would be regarded as significant and adverse, and mitigation compensation would be required. Mitigation required would include a 1:1 impact to replacement ratio (58 acres of mitigation land) for all project disturbed habitat. The CDFG Mitigation Guidelines states that acceptable mitigation to offset impacts to Swainson's hawk foraging habitat can be met by Fee Title acquisition of Swainson's hawk habitat, or by acquisition of the right to record a conservation easement over lands that can be managed for this hawk species (hereinafter Habitat Management Lands). Any land acquired through Fee Title would have to be donated to a suitable conservation organization for management. In addition to providing Habitat Management Lands, the applicant would be assessed a management fee for the long-term management of the Habitat Management Lands by a suitable conservation organization. Implementation of the above mitigation measures would reduce impacts to Swainson's hawk to a level considered *less than significant.*			
Impact #3.4-1c - Development Of The Project Would Have A Potentially Significant Adverse Effect On The Western Burrowing Owl.	**Mitigation Measure #3.4-1c - Mitigation for Western Burrowing Owl:** <u>Mitigation Measure A.</u> A nesting survey shall be conducted for ground nesting raptors, such as western burrowing owl and northern harrier. The survey should be conducted in accordance with	District/Construction Contractor	Monitoring shall be the responsibility of the California Department of Fish and Game.	Prior to issuance of building permits and ongoing enforcement during construction.

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	the survey requirements detailed in the CDFG's October 17, 1995 *Staff Report on Burrowing Owl Mitigation.* Surveys shall be conducted in both the breeding season (April 15-July 15) and non-breeding season (December-January) to assess use of the project site by this species. If burrowing owls are present on the project site during the breeding season (peak of the breeding season is April 15 through July 15), and appear to be engaged in nesting behavior, a fenced 75 meter (276-foot) buffer would be required between the nest site(s) (i.e., the active burrow(s)) and any earth-moving activity or other disturbance on the project site. This 276-foot buffer could be removed once it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest). Typically, the young fledge by August 31. This date may be earlier than August 31, or later, and would have to be determined by a qualified raptor biologist. If northern harriers are identified on the project site, mitigation measures detailed above for nesting raptors (Mitigation Measure BIO-1) should be implemented. Additionally, if burrowing owls are identified nesting onsite or within the area of influence of the project site (within 1,000 feet of the project site), an upland mitigation area for burrowing owls shall be established either on or offsite. The mitigation site must be determined to be suitable by a qualified biologist. The size of the required mitigation site will be based on the number of burrowing owls observed on the project site with a minimum of 6.5 acres preserved per pair of owls or single owl observed using the site. The number of owls for			

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	which mitigation is required shall be based on the combined results of the protocol-level survey and the preconstruction surveys (i.e., if two pairs of owls are observed on the project site during the protocol-level survey, the mitigation requirement shall be 2 x 6.5 = 13 acres provided that no more than two pairs of owls are observed during the preconstruction survey; if three pairs of owls are observed during the preconstruction survey, then the mitigation requirement shall be 3 x 6.5 = 19.5 acres). A detailed mitigation and monitoring plan shall be developed for the burrowing owl mitigation area. This plan must be prepared in coordination with CDFG, and approved by this agency. Mitigation Measure B. Preconstruction surveys of the project site shall be conducted no more than 30 days prior to ground disturbing activities. If more than 30 days lapse between the time of the preconstruction survey and the start of ground-disturbing activities, another preconstruction survey must be completed. This process should be repeated until the habitat is converted to non-habitat (e.g., graded and developed). Mitigation Measure C. If burrowing owls must be passively relocated from the project site, as approved by CDFG, passive relocation shall not commence until October 1st and must be completed by February 1st. After passive relocation, the project site and vicinity will be monitored by a qualified biologist daily for one week and once per week for an additional two weeks to document where the relocated owls move and to ensure that the owls are not			

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	reoccupying the project site. A report detailing the results of the relocation and subsequent monitoring will be submitted to CDFG within two months of the relocation. Mitigation Measure D. If an upland mitigation site is designated for burrowing owls, it shall be approved as a suitable burrowing owl mitigation property by CDFG. The preserved area shall be preserved in perpetuity as wildlife habitat via recordation of a conservation easement that designates the California Department of Fish and Game (CDFG), or any other qualified conservation organization as the Grantee of the easement. Mitigation Measure E: If a conservation easement is established over burrowing owl habitat, an endowment to cover the management of the mitigation area and implementation of the mitigation and monitoring plan shall be provided by the project applicant to the Grantee of the Conservation Easement within six months of breaking ground on the project site. Implementation of the mitigation measures above would reduce impacts to western burrowing owl to a level considered ***less than significant***.			
Impact #3.4-1d - Development Of The Project Would Have A Potentially Significant Adverse Effect On Common And Special-Status Nesting Birds.	**Mitigation Measure #3.4-1d - Mitigation for Common and Special-Status Nesting Birds:** In order to avoid impacts to common and special-status nesting birds protected pursuant to the Migratory Bird Treat Act and California Department of Fish and Game Codes §3503, §3503.5, and §3800, a nesting survey should be	District/Construction Contractor	Monitoring shall be the responsibility of the California Department of Fish and Game.	Prior to issuance of building permits and ongoing enforcement during construction.

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	conducted prior to commencing with construction work if construction work would commence between March 15th and August 31st. If special-status birds are identified nesting within the area of influence, a 100-foot non-disturbance radius around the nest must be fenced (this fencing requirement shall not replace or be constructed in lieu of fencing discussed above for impacts to nesting raptors). No construction or earth-moving activity shall occur within this 100-foot staked buffer until it is determined by a qualified ornithologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by July 1st. This date may be earlier or later, and would have to be determined by a qualified ornithologist. Similarly, the qualified ornithologist could modify the size of the buffer based upon site conditions and the bird's apparent acclimation to human activities. If common (that is, not special-status) passerine birds (that is, perching birds such as northern mockingbirds) are identified nesting in any tree or shrub proposed for removal, tree removal would have to be postponed until it is determined by a qualified ornithologist that the young have fledged and have attained sufficient flight skills to leave the project site. Typically, most passerine birds can be expected to complete nesting by July 1st, with young attaining sufficient flight skills by this date that are sufficient for young to avoid project construction zones. Unless otherwise prescribed for special-status bird species, upon completion of nesting no further protection or mitigation measures would be warranted for nesting birds.			

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
Impact #3.4-2 - Adverse Affect on any Riparian Habitat or Other Sensitive Natural Community.	**Mitigation Measure:** There are none required.			
Impact #3.4-3 - Disturbance to Wetlands and Jurisdictional Waters.	**Mitigation Measures:** There are none required.			
Impact #3.4-4 - Interfere substantially with the movement of fish or wildlife, impede wildlife corridors, or disturb wildlife nursery sites.	**Mitigation Measures:** None are required.			
Impact #3.5-1 – Potential disruption to significant historical or archeological resources.	**Mitigation Measure #3.5-1:** In the event of accidental discovery of human remains or items of historical or archaeological significance, the guidelines set forth in Section 15064.5 of CEQA require that the project be halted immediately, an archaeologist and the City called to the site to investigate further.	Construction contractor and District's construction inspector	The construction contractor and/or inspector to notify the Center for Archaeological Research at California State University, Bakersfield if any cultural resources are found. The Native American Heritage Commission shall be notified if human remains are found.	Ongoing during construction.
Impact #3.6-1 - Strong ground shaking.	**Mitigation Measure #3.6-1**. ▪ The project will be designed in compliance with Title 24 of the Uniform Building Code, Earthquake Requirements for Seismic Zone	District	District	Prior to construction.

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	three and will be inspected by City building inspectors during the construction phase. ▪ The project will be designed by an engineer to resist any seismic-related impacts. ▪ The project will be designed for the appropriate soil type by an engineer to resist spreading, subsidence, or collapse.			
Impact #3.6-2 - Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving land subsidence.	**Mitigation Measures:** None are needed.			
Impact #3.6-3 - Result in substantial soil degradation or contamination.	**Mitigation Measure #3.6-3:** To reduce soil contamination from construction equipment, the following measures will be implemented: 1. All maintenance and refueling of construction equipment will be conducted at a pre-approved location on site. All used oil and other contaminants will be collected and disposed of properly. 2. All equipment will be regularly and properly maintained to reduce leakage of fuel, oil, and other potential soil contaminants. 3. Any soil that is contaminated by fuel spills, oil spills, or spills of other potential soil contaminants will be removed from the site and disposed of at a suitable toxic waste facility.	Construction Contractor and Districts Construction Inspector	Specific measures to be incorporated into construction documents and enforced by District's Construction Inspector.	Ongoing during construction.

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
Impact # 3.7-1 - Presence of Toxic and Hazardous Substances.	**Mitigation Measure #3.7-1:** The District will complete a PEA form for submittal to the DTSC for evaluation. Should the PEA report determine the Project Site contains residue of organo-chlorine pesticides or other hazardous materials; the District is required to follow DTSC cleanup guidelines and implement the last step of the DTSC Three-Step Process, the Response Action, described below: ▪ The District shall amend the existing Environmental Oversight Agreement (EOA) to a Voluntary Cleanup Agreement (VCA), or School Cleanup Agreement (SCA). ▪ The District shall then be required to conduct a Supplemental Site Investigation, Removal Action Work Plan, Remedial Investigation, Feasibility Study or Remedial Action Plan following DTSC guidelines.	District	District	Prior to issuance of building permits.
Impact # 3.7-2 - Proximity to High-Voltage Transmission Line.	**Mitigation Measure # 3.7-2:** The 70 kV transmission lines and poles located on the west side of G Street adjacent to the proposed project site will be relocated to the east side of G Street in the City of Merced's right-of-way.	PG&E	District	Prior to issuance of building permits.
Impact # 3.7-3 – Transport and Storage of Hazardous Substances.	**Mitigation Measures:** None are needed.			
Impact #3.8-1 – Flooding of the project site.	**Mitigation Measure #3.8-1:** The elevation of the Project Site will be increased using fill to reduce the potential of site flooding. The amount of fill required and other site-specific	District	District	Prior to issuance of building permits and during construction.

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	requirements that will be implemented are provided in the Yosemite Lake Dam Failure Analysis (Appendix G). The Project site will be graded and raised approximately 3.5 feet to meet flood inundation levels. The building foundation pads and campus quad area will be elevated 1.5 feet above the inundation elevations. A licensed surveyor shall be retained to adjust the elevations reported to 1988 NAVD (*North American Vertical Datum* of 1988) and verify elevations and fill height.			
Impact #3.9-1 – Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.	**Mitigation Measure #3.9-1:** The MUHSD will apply for approval for a General Plan Amendment, a Site Utilization Plan (SUP) Revision, a Rezoning and encroachment permits for any work done in the rights-of-way (road work).	District	District	Prior to issuance of building permits.
Impact #3.11-1 - Traffic Noise.	**Mitigation Measures:** None are required.			
Impact #3.11-2 - Construction Noise.	**Mitigation Measures #3.11-2:** The operation of noise producing equipment used during construction shall be restricted to the hours from 7:00 a.m. to 7:00 pm., Monday through Friday, and 9:00 a.m. to 6:00 p.m. on Saturday and Sunday. Effective mufflers shall be fitted to gas- and diesel-powered equipment.	Construction contractor/ inspector for the project	The construction contractor/inspector shall insure that work is done during non-restricted hours and mufflers are fitted on gas- and diesel-powered equipment.	Ongoing during construction.
Impact #3.11-3 – Stadium Noise.	**Mitigation Measure #3.11.3 Stadium Noise (a, b, d):** The District shall establish procedures for the installation and operation of the public	District	District	Ongoing.

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	address systems. Specific measures shall include location and direction of loudspeakers and establishment of maximum volume levels in compliance with the daytime 65dB CNEL at adjacent residential properties. The District shall set 10:00 p.m. as the targeted time to end all football games and all other outdoor stadium events that attract large numbers of spectators.			
Impact #3.15-1 - Increase in Traffic.	**Mitigation Measure #3.15-1:** Traffic mitigation measures are outlined in Table 3.15-4. In addition to the District's improvements, additional roadway infrastructure will be necessary as the Bellevue Ranch Master Development Phasing Plan progresses. The District will pay it's approximately $1.53 million in local transportation impact fees and regional transportation impact fees. Traffic impact fees were calculated using the city's Institutional Land Use impact fee schedule ($6,174 per 1,000 sq. ft. of building space) and the Regional Transportation impact fee schedule ($1,900 per 1,000 sq. ft. of building space) for a total of $8,074 per 1,000 sq. ft. The proposed project includes approximately 190,000 sq. ft. for a total impact fee of $1,534,060. **Participation in local offsite improvements.** Regarding construction of the bridges on Farmland and Barclay, MUHSD has proposed that the District will pay a proportionate share of bridge construction costs based on a 24-hou contribution of traffic flows utilizing the bridges at full build-out of the BRMDP area. The	District/Caltrans	District/Caltrans	Prior to occupancy.

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	"school's 24-hour contribution of traffic flows is estimated to be 10%. **State Highway Improvements.** There is currently no adopted mitigation fee mechanism developed by the City of Merced for SR59 improvement participation.			

Table 3.15-4
Traffic Mitigation Table

	Impact	Condition		Description of Mitigation	Method To Implement Mitigation Measure: Improvement or Payment of Fees			Reimbursable Or Credit for Improvement
		Peak Hour vs. Peak Period *	Project or Cumulative *		Improvement by District	Impact Fees paid by District	Other Fee	
"G" Street / Yosemite Avenue								
1	Level of Service E	PH	Project	Add lanes on G Street	No	Yes	No	NA
"G" Street / Farmland								
2	Level of Service on WB Farmland Approach is LOS F	PH	Project	None – not significant itself due to (a) small volume; (b) presence of alternate road; (c) only one approach of intersection is substandard.	No	No	No	NA
"G" Street / Farmland Avenue Intersection								
4.	"Above Capacity" Conditions	PP	Project	Configure EB approach with right turn lane, through lane and separate right turn lane on Farmland Ave from HS driveway to G Street	Yes	NA	No	No
5				Signalize Intersection and Overlap phasing for EB Farmland Right turn with NB left turn.	Yes	NA	No	87.5% of cost reimbursed
6	Long northbound queue on G Street	PP	C+ Project	Construct extended northbound left turn lane on G Street (850 feet)	Yes	No	No	No

Table 3.15-4
Traffic Mitigation Table (Cont.)

	Impact	Condition		Description of Mitigation	Method To Implement Mitigation Measure: Improvement or Payment of Fees			Reimbursable Or Credit for Improvement
		Peak Hour vs. Peak Period *	Project or Cumulative *		Improvement by District	Impact Fees paid by District	Other Fee	
Bellevue Road / Barclay Avenue Intersection								
7	"Above Capacity" conditions	PP	Project	Construct a separate SB right turn lane, a SB left, and SB through	NA - Built by Paseo	Yes	No	NA
8				Construct extended EB left turn lane on Bellevue Road (925 feet).	NA - Built by Crosswinds	Yes	No	NA
9				Restripe center SB lane from "through" to a combination SB left and through, and modify signal related improvements to provide for this change.	No	Yes	No	No
"G" Street / Bellevue Road								
11	"Above Capacity" Conditions	PP	Project	Construct 2nd NB and SB lanes on G Street	NA - Built by Others	Yes	No	NA
13				Construct NB dual left turn lanes.	NA - Built by Others	Yes	No	NA
Farmland Avenue / HS Access								
15	Long westbound Queue on Farmland Ave	PP	Project	Construct WB Farmland between High School driveway and G Street with separate left turn lane and though lanes	***Yes***	No	No	North side of centerline reimbursable from adjoining property owners

Table 3.15-4
Traffic Mitigation Table (Cont.)

	Impact	Condition		Description of Mitigation	Method To Implement Mitigation Measure: Improvement or Payment of Fees			Reimbursable Or Credit for Improvement
		Peak Hour vs. Peak Period *	Project or Cumulative *		Improvement by District	Impact Fees paid by District	Other Fee	
G Street Frontage								
16	Cumulative traffic impacts city streets	PH	C	Improve G Street frontage to ½ ultimate 6 lane Arterial section	Yes	No	No	Credit for asphalt section more than collector road standard
Farmland Ave Frontage								
17	Cumulative traffic impacts city streets	PH	C	Improve Farmland Frontage to full ultimate collector section except parkstrip and sidewalk on north side.	Yes	No	No	North side of centerline reimbursable from adjoining developer
Barclay Ave Frontage								
18	Cumulative traffic impacts city streets	PH	C	Improve Barclay Avenue to full ultimate collector frontage except parkstrip and sidewalk on west side.	Yes	No	No	West side of centerline are reimbursable from adjoining developer
Bridges of Fahrens Creek at Barclay and Farmland								
19	Cumulative traffic impacts to City Streets	PH	C	Contribute to City a Fair-Share fee for cost to improve these bridges prior to awarding bid for Project.	No	No	Yes	No

* PP = Peak Period Impact; PH = Peak Hour Impact; EX + Project = project impact; C = cumulative impact; C + Project = cumulative impact created by project

In addition to the mitigation measures that are required specifically for the Bellevue High School project, there are mitigation measures that were developed for the Bellevue Ranch project that apply and must be implemented. These additional measures are provided in Table 5-2 and must be implemented and monitored by the District.

Table ES-2
Mitigation Measures for Bellevue Ranch
That Must be Implemented for the Bellevue High School Project

MM 4.2.1	The project applicant, in cooperation with adjacent land owners, shall provide interim buffers between future urbanized areas and existing agricultural uses that use pesticides, herbicides, or create dust and/or odors. Width and location of buffers shall be determined prior to approval of tentative maps, and shall be maintained until the project applicant has demonstrated that adjacent agriculture uses have ceased.
MM 4.5.1	Prior to the approval of building permits, the City shall require a detailed geotechnical report to be prepared by a California registered geotechnical engineer for each project.
MM 4.5.2	The City shall require the recommendations contained in the geotechnical report be incorporated into the design prior to approval of building permits.
MM 4.5.3	During construction, the geotechnical engineer shall provide inspection to ensure that recommendations and plans are properly implemented.
MM 4.7.4	A comprehensive plan to prevent erosion, siltation, and contamination of storm water during construction will be required for any development proposal within the Bellevue Ranch project area prior to approval of the improvement plans.
MM 4.9.1	Prior to the approval of a tentative map, the project applicant shall submit to the City of Merced Public Works Department detailed water supply and delivery plans for review and approval.
MM 4.9.2	The following two water conservation measures shall be implemented as required by state law – all buildings shall include low-flow fixtures and insulation of hot water lines in water recirculation systems.
MM 4.9.3	Prior to the approval of a tentative map, the project applicant will submit to the City Planning Department for review and approval general landscaping plans (as specified by the City's CUP submittal requirements).
MM 4.9.4	The project applicant, as approved by the City Public Works Department and Fire Department, will demonstrate that the water system proposed for the project is designed to meet the projected water capacity and fire flow requirements as well as all City specifications, prior to the approval of the first final map.

Table ES-2
Mitigation Measures for Bellevue Ranch
That Must be Implemented for the Bellevue High School Project (Continued)

MM 4.9.5	Prior to the approval of a tentative map, the project applicant will submit to the City Public Works Department detailed wastewater service plans for review and approval.
MM 4.9.6	Prior to the approval of a tentative map, the project applicant will demonstrate to the City that they have coordinated with Pacific Gas and Electric regarding the location and phases of natural gas and electrical facilities to serve the area.
MM 4.9.7	Prior to the issuance of building permits, the project applicant shall demonstrate to the City that their architect(s) have consulted with Pacific Gas and Electric regarding the incorporation of energy conservation techniques into building and landscape design.
MM 4.9.8	Prior to the approval of a tentative map, the project applicant will demonstrate to the City that they have coordinated with Pacific Bell regarding the extension, location, and phasing of telecommunication facilities to serve the project.
MM 4.9.9	The project applicant shall pay all Cost Revenue Impact System fees, or other applicable program fees as defined by the City, which are intended to cover all Police Department costs.
MM 4.9.10	Developers associated with Bellevue Ranch shall meet with the Merced Police Department prior to issuance of building permits. Specific security mitigation, as agreed between the Department and the developer, shall be incorporated into the construction plans.
MM 4.9.12	Payment of Cost Revenue Impact System fees or other applicable fees as determined by the City of Merced.
MM 4.9.13	Construction of exterior and interior water lines, fire hydrants, and provision of sufficient water pressure shall be determined by the Merced Fire Department.
MM 4.11.1	To ensure that construction mitigation is utilized, final approval shall not be granted to any development until the developer or contractor submits a satisfactory construction mitigation plan.
MM 4.11.2	As a condition of project approval, the project applicant shall coordinate with the City to implement a Transportation Demand Program.
MM 4.11.3	Employers within the Master Plan area shall coordinate with the City to implement a strong Transportation Demand Management program for all employment generating use.

Table ES-2
Mitigation Measures for Bellevue Ranch
That Must be Implemented for the Bellevue High School Project (Continued)

MM 4.11.4	Project design shall be reviewed by the City Planning Department prior to tentative map approvals to encourage telecommuting.
MM 4.11.5	Project design shall be reviewed by the City Planning Department prior to approval of the Master Development Plan to encourage the provision of park-and-ride amenities within the project.
MM 4.12.1	For the year 2010 with the project scenario noise environment, 6 to 12 foot sound walls, earth berms, or other acoustical shielding would need to be constructed to meet the City's recommended outdoor noise goal of DNL 65 db. A detailed noise study should be performed along impacted roadway segments to corroborate the actual noise environment and the required acoustical shielding.
MM 4.12.3	Trucks used for the development of Bellevue Ranch will be required to use the City's designated truck routes.
MM 4.12.4	All construction activity shall be conducted in accordance with City of Merced Standards for times of operations.

CHAPTER ONE

INTRODUCTION

CHAPTER ONE - INTRODUCTION

1.1 Project Objectives and Site Selection

The project objective is to meet the demand of an increasing secondary school enrollment of the Merced Union High School District (District) in the City of Merced. Project site selection must comport with the California Department of Education's School Site Selection and Approval Guide, which includes: safety, location, environment, soils, topography, size and shape, accessibility, public services, utilities, cost, availability and public acceptance. District selection criteria include consistency with the Merced County General Plan, risk of hazards, physical constraints on the site, impacts to natural communities, the availability of water and sewer, cost of acquisition, level of access and site configuration. A site suitability study was performed by EIP Associates to identify sites that met these objectives; four sites were identified. The study is found in Appendix F of this report.

The Project Site was selected as the proposed school site based on its central location, existing accessibility, feasibility of site acquisition, and the District's size and access criteria. The District currently has an option to purchase the proposed site.

1.2 Project Description

The project involves the construction of a new public school facility, grades 9 through 12, on a 58-acre site located at the southwest corner of East Farmland Avenue and G Street in the city of Merced, California. The proposed campus will include classrooms, administrative buildings, a library, an outdoor athletic stadium, and various athletic facilities. The buildings will occupy 190,000 square feet, the parking area 204,900 square feet (562 spaces), and the athletic fields 1,409,000 square feet. A more detailed project description is found in Chapter Two of this Draft Environmental Impact Report (DEIR). The entire project is planned to be built as one phase, with the exception of the stadium, which is subject to the availability of later funding and is considered to be part of the proposed project.

The following are the educational functions and programs of the school district for the new campus:

Core Academic Programs

- Pre-vocational Programs
- Special Education Programs
- Extra Curricular Student Activities
- Student Counseling and Guidance Services
- Physical Education
- Campus Administrative Operational Services

1.3 Procedures

Prior to the preparation of this DEIR, an Initial Study was conducted by Quad Knopf, Inc. of Visalia, as a consultant for the District. The District is the lead agency for the Bellevue High

School project. The purpose of the Initial Study was to determine if the proposed Bellevue High School project may have significant effects (also called "impacts") on the environment. Based on the results of the Initial Study (Appendix A), the Lead Agency determined that the project may cause one or more significant effects on the environment and the preparation of an EIR was required. These effects and alternatives to the project are discussed in detail within this DEIR. The Initial Study is included as Appendix A in this DEIR.

The Initial Study and the DEIR were prepared to meet all requirements of the California Environmental Quality Act (CEQA) and *Guidelines for the Implementation of the California Environmental Quality Act* (California Administrative Code [CAC], Title 14, Chapter 3 – hereinafter called the *CEQA Guidelines*).

Under CEQA, the lead agency is normally the public agency that has discretionary authority to approve the project. In this case, the body with the final authority to approve the project is the District Board of Trustees.

Section 15121(a) of the *CEQA Guidelines* defines an EIR as an informational document that will:

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

The construction and operation of the new public school facility is the action that constitutes the project for purposes of this EIR. As defined in Section 15378 of the *CEQA Guidelines*, a "project" is an action that "*…has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment ..."*

Under Section 15091 of the *CEQA Guidelines*, the lead agency must make findings prior to approving the project. For each significant environmental effect identified in the EIR, one or more of the following findings must be made:

- Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen (i.e., mitigate) the significant environmental effect as identified in the Final EIR.

- Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

- Specific economic, legal, social, technical or other considerations, including provisions of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR.

Section 15093 of the *CEQA Guidelines* requires the lead agency decision-makers to balance the economic, legal, social, technical or other benefits of a proposed project against any unavoidable environmental effects of the project. If, in the lead agency's opinion, the benefits of the project outweigh the unavoidable adverse environmental effects, the decision-makers may adopt a

Statement of Overriding Considerations, finding that the environmental effects are considered acceptable. For the purpose of determining whether impacts are significant, Appendix G of the *CEQA Guidelines* are used.

Section 15004 of the *CEQA Guidelines* states that EIRs should be prepared as early as feasible in project planning to enable environmental considerations to influence project design. Thus, the EIR must be completed and certified by the lead agency before the agency approves the project itself.

The EIR provides an opportunity to change the project's design or adopt alternatives to mitigate any potential environmental impacts before project approval.

Section 15145 of the *CEQA Guidelines* discourages discussion of impacts that are speculative. The *CEQA Guidelines* instructs the lead agency to terminate discussion of any impact it concludes is speculative and to make note of it in the Draft EIR.

The Draft EIR will be subject to public review as required under Section 15087 of the *CEQA Guidelines.* CEQA requires that the lead agency consider input from other agencies, citizen groups, and individuals. CEQA is a public process requiring full public disclosure of the expected environmental consequences of the project and its alternatives. The public must be given a meaningful opportunity to comment. The *CEQA Guidelines* require a public review period of no less than thirty days but no more than ninety days. A 30 or 45 day review period is customary for a project of this nature. CEQA specifies how the public must be notified and that the Draft EIR is available for review. During the review period, the public and all responsible, trustee, or other interested agencies may comment, orally or in writing, on Draft EIR contents. The lead agency often holds a public hearing to receive comments during the review period, but CEQA does not explicitly require a public hearing on the Draft EIR.

Section 15132 of the *CEQA Guidelines* requires that each comment made during the public review period must be responded to in writing. The Final EIR that will be considered for certification by the District will consist of:

- The Draft EIR with any necessary revisions resulting from public and agency comments;
- Comments on the Draft EIR;
- A list of individuals, organizations, or agencies that commented on the Draft EIR; and
- Lead agency responses to the comments.

Upon completion, the District can certify that the Final EIR has been completed, it complies with CEQA, and the information in the Final EIR was reviewed and considered prior to making a decision on the project. The decision-makers (the Board of Trustees) will review the EIR. Typically, lead agency staff prepares a report of EIR findings and staff recommendations to assist the decision-makers in absorbing and interpreting the EIR. After reviewing and considering the EIR, including public comments on the Draft EIR and responses to those comments, the District will make its findings as explained above.

Finally, the District will adopt a Mitigation Monitoring and Reporting Program as required by Public Resource Code, Section 21081.6 adopted under Assembly Bill 3180 (Cortese 1989). The

Mitigation Monitoring and Reporting Program is required to ensure that mitigation measures identified in the EIR are carried out and produce the desired results. The Mitigation Monitoring and Reporting Program is presented in Chapter 5 of this DEIR and identifies the person or agency responsible for implementing each mitigation measure, the agency to whom implementation of the measure should be reported, and a timetable for implementation and monitoring. Mitigation Monitoring and Reporting Programs also often include performance standards used to judge how effective a measure is in meeting its objectives and contingency plans that will take effect if performance standards are not achieved.

Under CEQA, the lead agency conducting an EIR must independently evaluate the consequences of its own actions. The agency may rely on consulting experts to perform such independent evaluation, but it cannot merely rely on the opinion of another agency. For example, the fact that a project is given a compliance permit by a local air pollution control district does not relieve the lead agency from determining independently whether the proposed action will result in significant air quality effects.

1.4 Methodology/Scope of EIR

The CEQA process begins with scoping to determine the type and extent of environmental documentation necessary for the project and provide an initial opportunity for public and agency input. Scoping can include preparation of an Initial Study, distribution of a Notice of Preparation, an Administrative Draft EIR (ADEIR) and public scoping sessions. The NOP and Initial Study are included in Appendix A of this report.

Scoping often begins, as in this instance, with preparation of an "Initial Study," which includes a checklist of anticipated impacts. The Initial Study helps the lead agency to decide whether to prepare an EIR or a Negative Declaration. The District prepared and circulated an Initial Study and sent a Notice of Preparation (NOP) to the Governor's Office of Planning and Research (OPR) State Clearinghouse. The State Clearinghouse distributed the NOP and Initial Study to potential State responsible and trustee agencies, and local agencies.

All responsible and trustee agencies, as well as other interested agencies, citizen groups, and individuals had thirty days to respond to the NOP. These responses helped determine the range of environmental issues that this DEIR and final EIR must address.

A list of agencies that commented on the NOP/Initial Study and their comments are included in Appendix A.

1.5 Organization of the EIR

Preceding this chapter is the Executive Summary. Section 15123 of the *CEQA Guidelines* states that an EIR "*shall contain a brief summary of the proposed actions and its consequences…The summary shall identify each significant effect 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.*" The Executive Summary of this EIR contains a table (Table ES-1) which summarizes all impacts,

recommended mitigation measures, and the agency responsible for implementing the mitigation measures.

The purpose of Chapter One is to state the nature of the project and inform the reader of the reason for preparing the EIR. It also explains the purposes of CEQA and briefly summarizes the CEQA process.

Chapter Two of this report describes the site location, the project's objectives, project description, the required permits and approvals, the general environmental setting of the project site and surrounding area, and includes a brief discussion of relevant regulations and plans as they relate to the project.

Chapter Three details the environmental setting as it relates to each topical area (e.g., noise, traffic, air quality), identifies and evaluates impacts, including cumulative impacts, and proposes mitigation measures to reduce impacts to less than significant levels, where feasible. The format and content of this chapter are described as follows:

INTRODUCTION

Where applicable, a brief introduction is presented under each general topical heading (e.g., Noise, Air Quality).

IMPACT EVALUATION CRITERIA/REGULATORY CONTEXT

This section of each subchapter defines the standard by which impacts are measured or the threshold of significance. The purpose is to establish the level at which an environmental impact will be considered significant. The thresholds of significance as defined in Appendix G of the *CEQA Guidelines* will be used throughout this DEIR.

The standard by which impacts are measured or the threshold of significance is presented. The purpose is to establish the level at which an environmental impact will be considered significant.

SETTING

The existing setting and conditions with respect to the environmental topic being discussed are briefly described. Where applicable to the proposed project, mitigation measures from the Bellevue Ranch Master Development Plan EIR are presented as part of the regulatory setting.

IMPACTS AND MITIGATION MEASURES

- **Impact #**: Each identified environmental impact is numbered for reference. They are numbered in accord with the chapter subsection (e.g., #3.8-1).

- **Conclusion:** This is a statement of whether or not an identified impact is significant, less than significant, cumulatively significant, etc.

- **Mitigation Measure #**: Each mitigation measure is numbered in accord with its chapter subsection and correlated with the impact to which it applies.

- **Effectiveness of Measure:** For significant impacts, a statement is made regarding whether the impact can be mitigated to a less than significant level or, alternatively, whether the impact is only partially mitigated, immitigable, unavoidable, and/or irreversible, based on the Impact Evaluation Criteria.

The above format is intended to conform to standards for adequacy of the EIR as described in Section 15151 of the *CEQA Guidelines,* which states:

> *"An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection, but for adequacy, completeness, and good faith effort at full disclosure."*

Chapter Four describes and evaluates alternatives to the proposed project. Per requirements of Section 15126.6 of the *CEQA Guidelines,* the "no project" alternative must be considered to compare the environmental consequences of the project as proposed to the consequences of taking no action. The potential environmental impact of these alternatives will be compared to the environmental impact of the project as proposed.

Chapter Five presents the Mitigation Monitoring and Reporting Program. The following format is used for the Mitigation Monitoring Plan, which includes the number of the mitigating measure, the agency responsible for the mitigation and the reporting requirements:

- **Mitigation Implementation/Monitoring Measure**

  Mitigation Measure
  Enforcing Agency
  Enforcement Mechanism

Chapter Six discusses other mandatory CEQA requirements including cumulative impacts of the proposed project and other approved pending projects nearby.

Appendices include the NOP/Initial Study, comments received during the early public review period and in response to the NOP/Initial Study, technical reports cited in the text, and the names of agencies or individuals contacted for information during EIR preparation.

The above format is intended to conform to standards for adequacy of the EIR as described in *CEQA Guidelines §15151, which states:*

An EIR shall be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is

reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR shall summarize the main points of disagreement among the experts. The courts have looked not for perfection, but for adequacy, completeness, and good faith effort at full disclosure.

CHAPTER TWO

PROJECT LOCATION AND DESCRIPTION

CHAPTER TWO – PROJECT LOCATION AND DESCRIPTION

2.1 Project Background and Location

The Merced Union High School District (District) was established in 1968, however, educational services have been provided to residents of the area for many years prior to that time. Merced High School, for example, has been in existence for over 100 years. The District currently oversees the operation of seven high schools; two in Atwater, one in Livingston, three in the City of Merced, plus an adult school and a special educational center, both located in the City of Merced.

The District proposes to construct a new 58-acre high school to serve the northeast section of the City of Merced. See Figures 2-1 through 2-3 for the regional and vicinity maps, and the proposed site plan.

2.2 Project Description

The proposed project (herein referred to as *Bellevue High School*) will provide classroom space for up to 2,000 students (with the ability to expand, if necessary, to 2,400 students) in grades 9 through 12, and school staff of approximately 100 on a 58-acre site. Buildings will total approximately 190,000 square feet, with a gymnasium building, cafeteria, administration building, and a total of 83 classrooms in 2-story classroom wings. These buildings and related improvements will be constructed in one phase. The preliminary site plan drawing is enclosed.

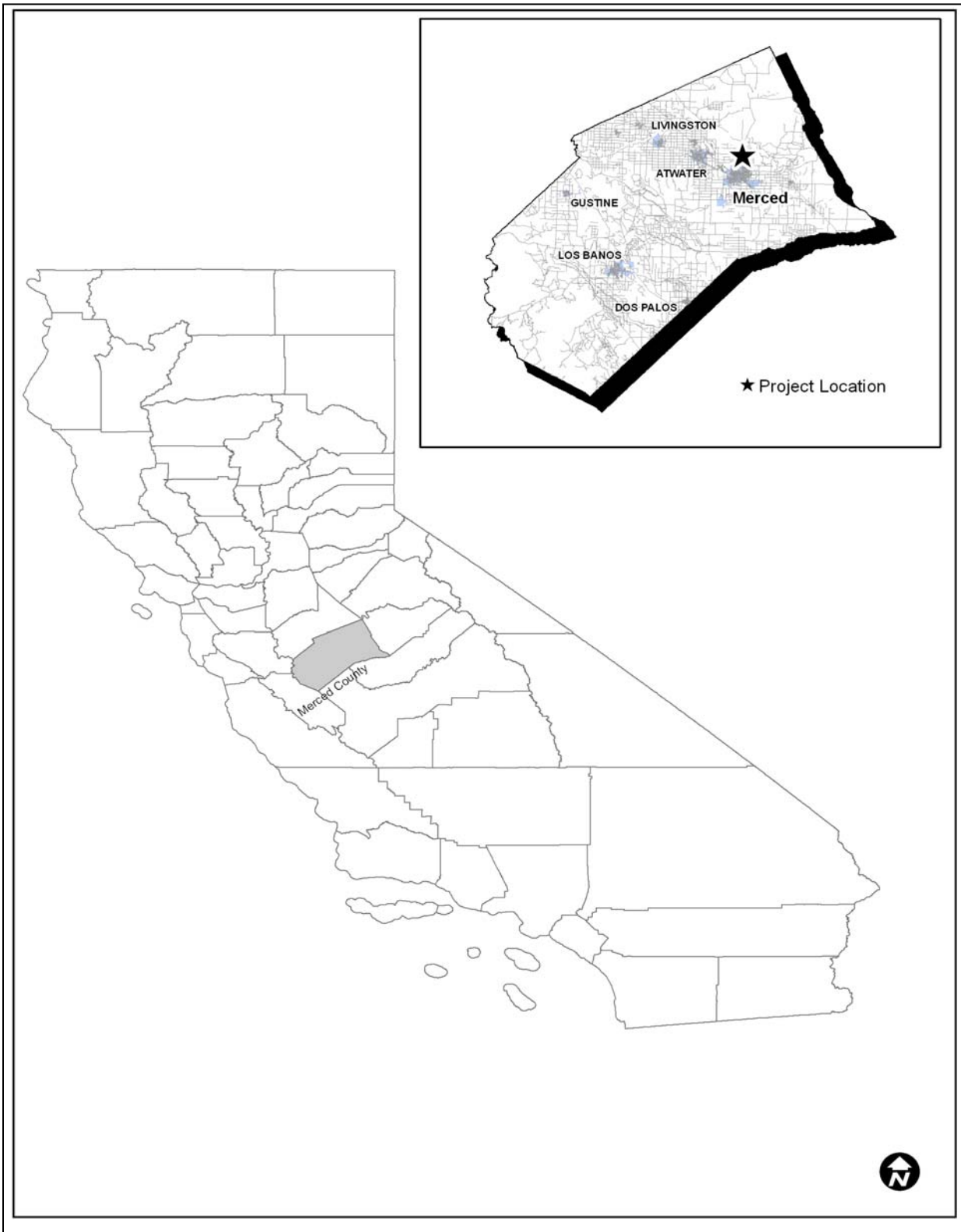
As additional funding becomes available in the future, a 4,000 seat athletic stadium (used primarily for football, soccer and track) is planned as phase two. The environmental impacts of this proposed stadium are included in this EIR.

Buildings will occupy approximately ten percent of the site; parking and roadways, twenty percent; workways, twenty percent; and athletic facilities, fifty percent. Approximately 562 parking spaces will be provided on site and will include new roadways (Barclay Avenue and Farmland Avenue), (see Figure 2-3). In accordance with the Bellevue Ranch Master Development Plan, an open space buffer zone is provided along Fahrens Creek.

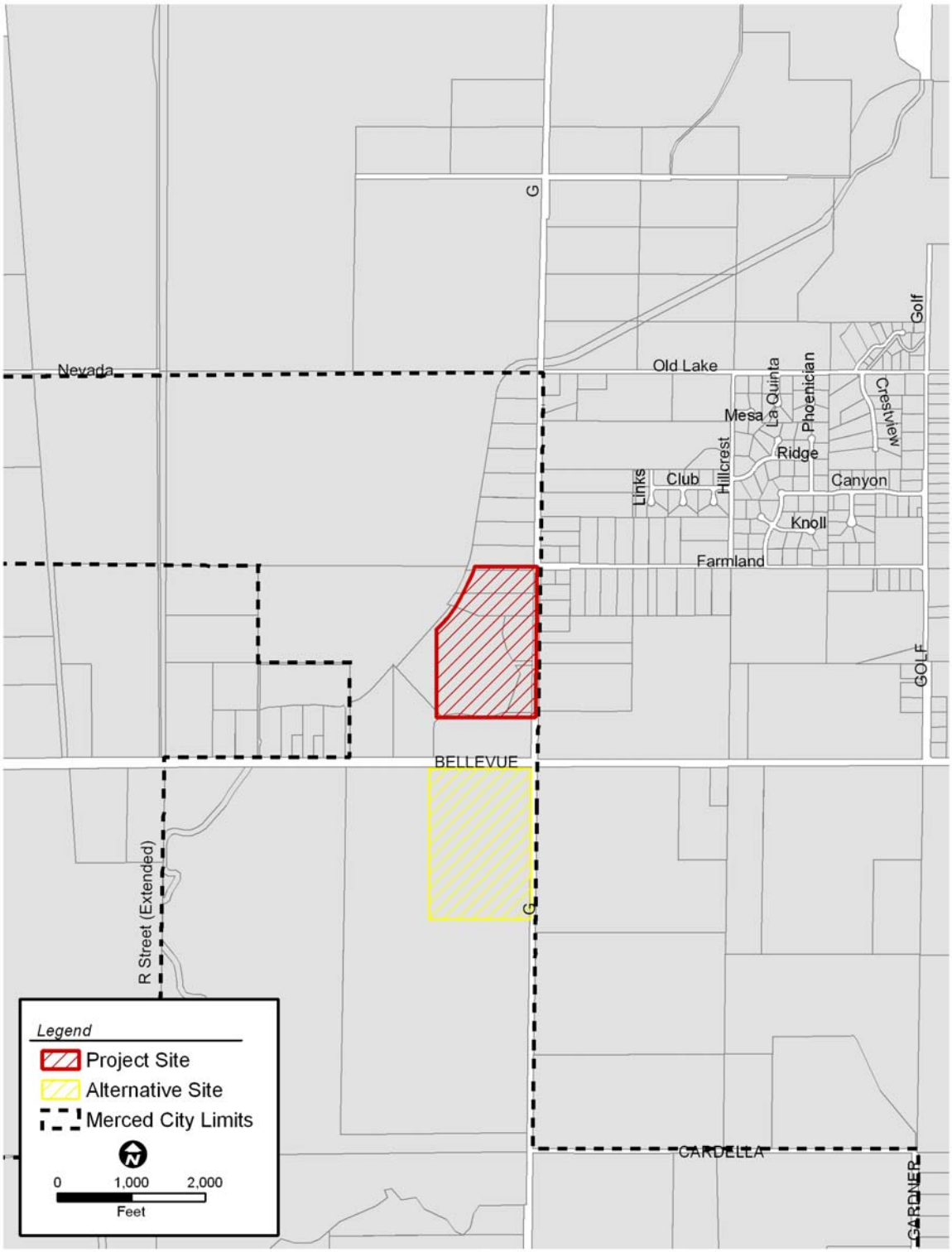
2.3 Regulatory Context

The Merced Union High School District Board of Trustees (Board) serves as the lead agency and must certify the EIR and approve new construction. The Board also acts as a responsible agency in certain circumstances and is subject to the CEQA requirements discussed in the following paragraph.

A responsible agency means a public agency, other than the lead agency which as responsibility for carrying out or approving a project. The responsible agency considers the effects, both individual and collective, of all activities involved in a project which it is required by law to carry out or approve. As such responsible agencies for, the project shall:



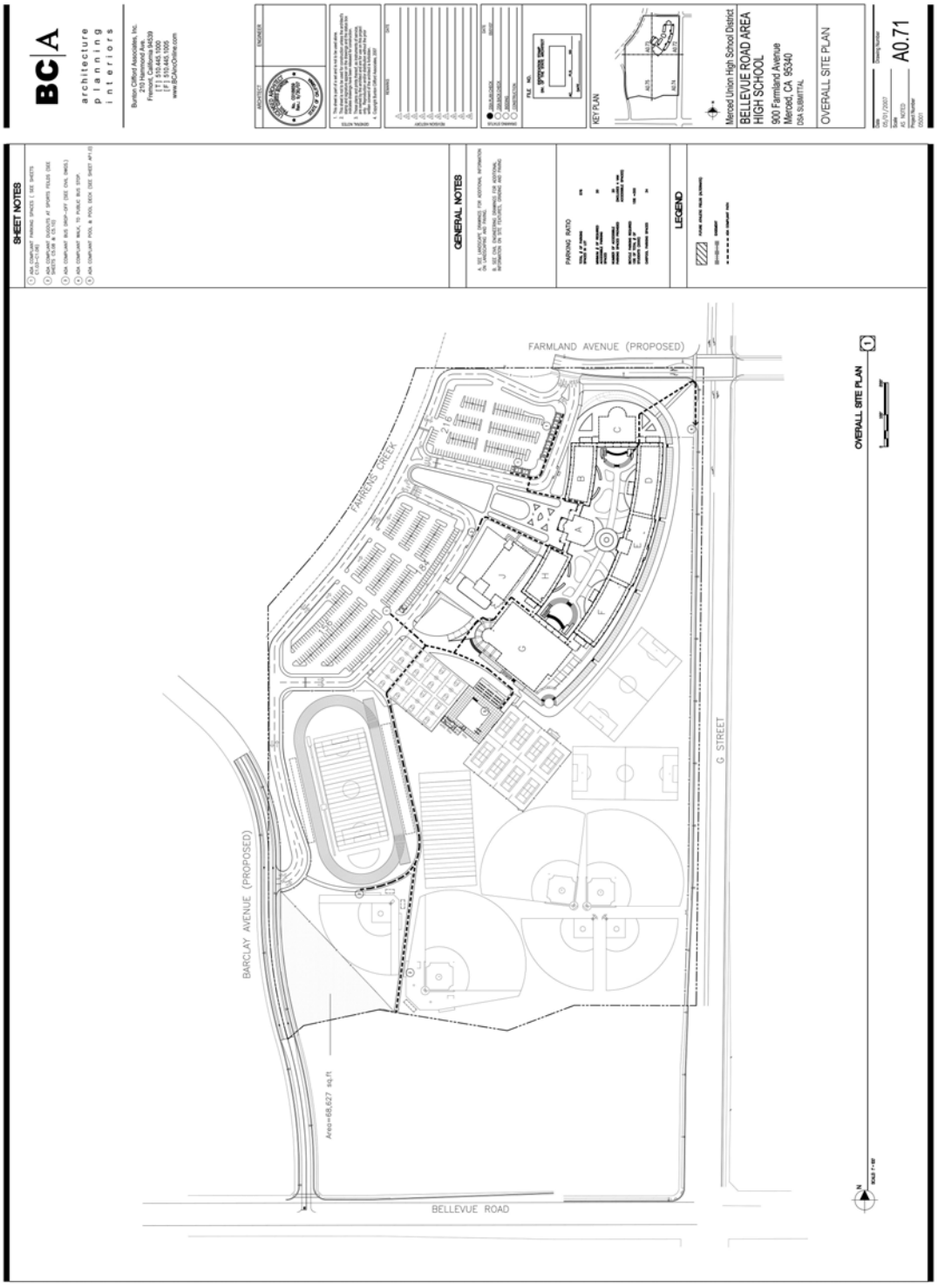
Quad Knopf	REGIONAL MAP	Figure 2 - 1



Quad Knopf

VICINITY MAP

Figure 2 - 2



Quad Knopf	SITE PLAN	Figure 2 - 3

- attend meetings as requested by the lead agency,

- review and comment on the Draft EIR regarding any shortcomings it may have, and suggest alternatives or mitigation measures the final EIR should include. These items must be within the scope of expertise of the agency, or required by the agency to carry out, or approve, or within their exercise of powers. Oral or written documentation is required,

- approve the project as proposed in the DEIR, or disapprove if the agency can find any feasible alternative or feasible mitigation measures within its power that would lessen or avoid any significant impacts to the environment,

- make the findings required by CEQA Section 15091 or 15093, and should file a notice of determination (NOD) as outlined in CEQA Section 15096 (i).

The following public agencies are considered responsible agencies under CEQA for this project:

The City of Merced will review, process, and approve (with or without, applicable conditions of approval) the following applications submitted by the District:

- General Plan Amendment – Low Density Residential to School
- Rezoning – Planned Development to School
- Site Utilization Plan Revision
- Conditional Use Permit
- Building Permits
- Rights-of-Way Encroachment Permits

The City will also have approval authority over all development improvements involved in the project, notwithstanding any agreements entered into between the City and the District.

The California Department of Education evaluates the DEIR, the proof of District certification of the EIR, development plans and issues necessary permits.

The California Department of Transportation will evaluate this DEIR and the Traffic Impact Study included as Appendix E of this document.

The California Department of Fish and Game (CDFG)will provide guidance if a w*estern pond turtle, western spadefoot toads,* roosting bats, nesting birds, or *burrowing owls* are discovered on or near the project site, and shall be notified pursuant to the requirements of the CDFG and the applicable mitigation measures listed in this DEIR.

The California Regional Water Quality Control Board has authority necessary to assure water quality protection pursuant to a variety of State and Federal water quality regulations, and is the statutorily designated agency with authority to enforce Federal Clean Water Act requirements and standards as well as other federal water quality regulations and guidelines on behalf of the United States Environmental Protection Agency (EPA).

The San Joaquin Valley Air Pollution Control District (SJVAPCD) has the authority to issue Authority to Construct, Authority to Operate and permits to operate internal combustion engines.

The California Department of Toxic Substances Control (DTSC) approves the final draft Preliminary Endangerment Assessments.

2.4 Relationship to Plans, Ordinances and Approvals

The project area is located in the Bellevue Ranch Master Development Plan and is subject to the guidelines contained in the Development Plan, including design standards, project description, conditions of approval, mitigation measures, and development agreements. The 1,365-acre Bellevue Ranch Master Development Plan is the first project being proposed to implement the Merced Villages Concept Plan and Design Guideline (Concept Plan).

The Concept Plan calls for growth to occur in "villages" which are self-sufficient, pedestrian-oriented, mixed-use communities that provide the opportunity for people to live, work, go to school, shop and gather all within the village.

Public facility land use of the Bellevue Ranch Master Development Plan include: two elementary school sites (19.9 total acres), one high school site (40.0 total acres) and one fire station (1.6 acres).

The District is applying for a General Plan Amendment to change the Project area's status from "Low Density Residential" to "School". The City of Merced is also requiring the school district to apply for a Site Utilization Plan (SUP) Revision and rezoning the site to "school."

Table 2-1 depicts the necessary permits, approvals and environmental requirements.

2.5 Uses of the EIR/Required Agency Actions and Permits

This EIR will be the basic environmental review document for discretionary land use permits that are required by the construction of this project. This EIR may also be used for approvals by other agencies. Anticipated permits and approvals that are needed for construction are shown in Table 2-1.

Agencies using this EIR in their decision making process will include the City of Merced California Department of Education, California Department of Transportation, California Regional Water quality Control Board, and California Department of Fish and Game. In addition, the San Joaquin Valley Air Pollution Control District and California Department of Toxic Substances Control reviews the EIR and issues approvals or permits as described in Table 2-1.

Table 2-1
Permits and Approvals[1]

Agency	Approvals [2]
City of Merced	▪ Land use entitlements ▪ General Plan Amendments ▪ SUP Revision ▪ Encroachment permits
Merced Union High School District	▪ Must approve new construction ▪ Lead Agency Certifies EIR
California Department of Education	▪ Approves development plans ▪ Proof of EIR certification
California Department of Transportation	▪ Reviews Traffic Impact Study
California Regional Water Quality Control Board	▪ Construction Activity Storm Water Permit/Storm Water Pollution Prevention Plan ▪ Waste Discharge Requirements/Waiver
California Department of Fish and Game	▪ Reviews project, provides guidance as needed, issues Stream Alteration Agreement (if req'd)
U. S. Department of Fish and Wildlife Service	▪ Evaluates site assessment reports ▪ Provides guidance as needed
San Joaquin Valley Air Pollution Control District City of Merced	▪ Authority to Construct/Authority to Operate ▪ Reviews, approves applications for Site Utilization Plan (SUP) Revision General Plan Amendment, rezoning the site to "school," and Conditional Use Permit. ▪ Issues building and encroachment permits. ▪ Authority over all improvements
California Department of Toxic Substances Control	▪ Reviews, approves *Preliminary Endangerment Assessment* form

(1) Potential permits and approvals which may or may not be necessary, depending on final development design, agency requirements, at State Code. Source: Quad Knopf, Inc. 2006
(2) All listed agencies evaluate adequacy of DEIR and comment pursuant to CEQA

CHAPTER THREE

SETTING, IMPACTS AND MITIGATION MEASURES

CHAPTER THREE – SETTING, IMPACTS AND MITIGATION MEASURES

3.1 Aesthetics

INTRODUCTION

This section assesses the potential issues associated with project induced impacts to aesthetic resources. The Initial Study concluded that the proposed project would have a less than significant impact on scenic vistas, scenic resources, and existing visual character or quality of the site and its surroundings. The Project Site is currently a fallowed agricultural field that is not within or near any State, County, or City-identified scenic vistas or scenic highway corridors. Because these issues have been previously addressed, they are not covered in this DEIR. However, the Initial Study determined that light and glare from stadium lighting may significantly impact night time views in the area. This section addresses that issue.

IMPACT EVALUATION CRITERIA

The criteria for evaluating aesthetic resource impacts are contained in Appendix G of the *CEQA Guidelines* and state that a project will significantly impact aesthetic resources if it will:

a) *Have a substantial adverse effect on scenic resources?*

b) *Substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?*

c) *Substantially degrade the existing visual character or quality of the site and its surroundings?*

d) *Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

Glare is a continuous or periodic intense light that may cause eye discomfort or be blinding to humans. In determining if a project will have an impact, a project must generate light that would directly illuminate or reflect upon adjacent property or could be directly seen by motorists or persons residing, working or otherwise located within site of the project. In determining the level of significance, it is necessary to determine the intensity of the lighting in footcandles (the primary measure of light intensity-one footcandle equals one lumen per square foot).

A "threshold of significance" is a level of a particular environmental effect. It can be identifiable, quantitative, qualitative, or performance based. An environmental effect that is below a threshold means that a project's effects normally will be determined to be less than significant under CEQA. Light and glare will normally be considered potentially significant if:

- Indirect illumination of adjacent properties in excess of 0.5 footcandles.

- Intensity of lighting within the physical limits of an area required to be lighted that is greater than seven footcandles.

SETTING

The Merced Union High School District's Belleview School Project Site is located at the southwest corner of Farmland Avenue and G Street in the northern portion of the City of Merced. The high school will be visible from G Street to the east, Farmland Road to the north, and from open space along Fahrens Creek to the west. The school will include an athletic stadium (when and if funding becomes available) that will support football, track, and soccer events. Lighted baseball and softball fields will also be constructed. Light and glare from the athletic stadium will be visible to motorists along G Street and along Farmland Road. Light and glare produced by the stadium will be visible from the residential area to the east of G Street. Security lighting will be provided for buildings and parking lots.

PROJECT IMPACTS AND MITIGATION MEASURES

Impact #3.1-1 - Create a new source of substantial light or glare which would adversely affect day or night time views in the area:
[Evaluation Criteria (d)]

Night time illumination of the stadium, athletic fields, and security lighting may be visible from the Farhens Creek open space and disruptive to users of that open space. However, there is not expected to be substantial use of this open space during the night, when the light generated would be disruptive. Evening athletic events and other school activities at the athletic stadium and athletic fields will result in a substantial increase in night-time illumination that will be visible by motorists along G Street and Farmland Road. Some security lighting will be visible. Evening athletic events and other school activities at the athletic stadium and athletic fields will result in a substantial increase in night-time illumination that will be visible by residents located east of G Street and north of Farmland Road. The property immediately sought of the Project site is residentially zoned and the City has approved a residential development on the site.

Conclusion: Light and glare generated by the stadium, athletic fields, and by security lighting ***will not significantly impact*** users of the Farhens Creek open space areas. Lights from the athletic stadium, from the athletic fields, and from security lighting will be visible to motorists traveling along perimeter roadways of the campus. This illumination may be distracting to motorists and is ***a potentially significant impact***. Lights from the athletic stadium and from the athletic fields will be visible to local residents. This illumination may be distracting and is ***a potentially significant impact***.

Mitigation Measure #3.1-1: Lighting will be designed to avoid direct lighting of off-site areas and to reduce associated glare to surrounding areas. A lighting plan will be developed by a registered illumination engineer, which demonstrates that the resultant lighting levels conform to the following standards:

- Off site lighting and glare will be limited to no more than 0.5 foot-candle illumination (0.5 lumen per square foot). Lighting on-site shall be limited to no more than 7 footcandle illumination, except directly within the stadium and athletic fields.

- All lighting fixtures on the perimeter of the project shall be outfitted with hoods and cut-off lenses so that the light source itself is not visible to the naked eye from neighboring properties or to drivers or pedestrians from neighboring streets. The developer shall submit a lighting plan, which demonstrates that the resultant lighting levels conform to this standard before issuance of a Building Use Permit.

- All yard, security and canopy lighting in excess of 150 watts shall be hooded or shielded so that it is not visible to the naked eye form adjacent properties.

Effectiveness of Mitigation Measure: Implementation of this measure will reduce light impacts to levels that are ***less than significant***.

Impact #3.1-2 – Have a Substantial Adverse Effect on Scenic Resources: High voltage power transmission lines located along the west side of G Street will be relocated to the east side of G Street in the City of Merced's right-of-way.

Conclusion: The power lines and poles currently obstruct the viewshed of the few existing residences along G Street. Although relocation of the power lines will result in closer proximity to residences, the power lines are not considered a new impact and therefore there is a ***less than significant*** impact.

Mitigation Measures: None are required.

3.2 Agricultural Resources

INTRODUCTION

This section assesses the potential issues associated with project-induced impacts to agricultural resources. The Initial Study concluded that the proposed project would have no impact on a Williamson Act contract or other zoning issues. The Initial study found that there would be a potentially significant impact on the conversion of prime farmland, but there were no other issues related to the conversion of farmlands that were considered potentially significant. This section is limited to a discussion of the conversion and loss of prime farmland.

IMPACT EVALUATION CRITERIA

The criteria for evaluating Agricultural Resource Impacts are contained in Appendix G of the *CEQA Guidelines* and state that a project will significantly impact agricultural resources if it will:

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

b) Conflict with existing zoning for agricultural use or a Williamson Act contract?

c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?

SETTING

The land surrounding the City of Merced includes agricultural lands that provide an economic base for the community. The Project Site consist of Wyman clay loam, Bear Creek clay loam, and Yokohl clay loam soils and irrigation water is available through delivery via the Tower Lateral Canal. The site has been cultivated in the past, but is currently fallowed. The proposed project contains farmland of local importance, prime farmland, and farmland of statewide importance (Figure 3.2-1). The site is within the City's "Bellevue Ranch Master Plan, which was approved through adoption of an EIR prepared in 1993. The site has City General Plan and Zoning designations of residential and mixed urban uses, including a 43 acre high school site (see Section 3.9 – Land Use Planning). The Project Site is not under a Williamson Act contract.

The land to the south of the Project Site includes the Tower Lateral Canal and various irrigation ditches, an area that is cultivated as a community vegetable garden, and fallowed agricultural land. To the west of the site is Fahren's Creek, irrigated cropland, and fallow land. To the north is fallowed agricultural land. On the east side of the site is G Street and rural residential land uses. The site and the land surrounding the site are approximately 180 feet in elevation.

PROJECT IMPACTS AND MITIGATION MEASURES

Impact # 3.2-1 - Loss of Prime Farmland:
[Evaluation Criteria (a)]

The environmental effects associated with urban development of the Project Site were addressed in the adoption of the "Merced Vision 2015 General Plan," by the Merced City Council in April 1997 and in the Belleview Master Plan in 1993. The Project Site is located within the City's Specific Urban Development Plan (SUDP). The "Merced Vision 2015 General Plan" acknowledges that the City is located within a valuable agricultural area, stating that the SUDP was strategically placed to minimize the loss of Prime Farmland in the area. Nevertheless, the conversion of approximately 51 acres of Prime Farmland will occur.

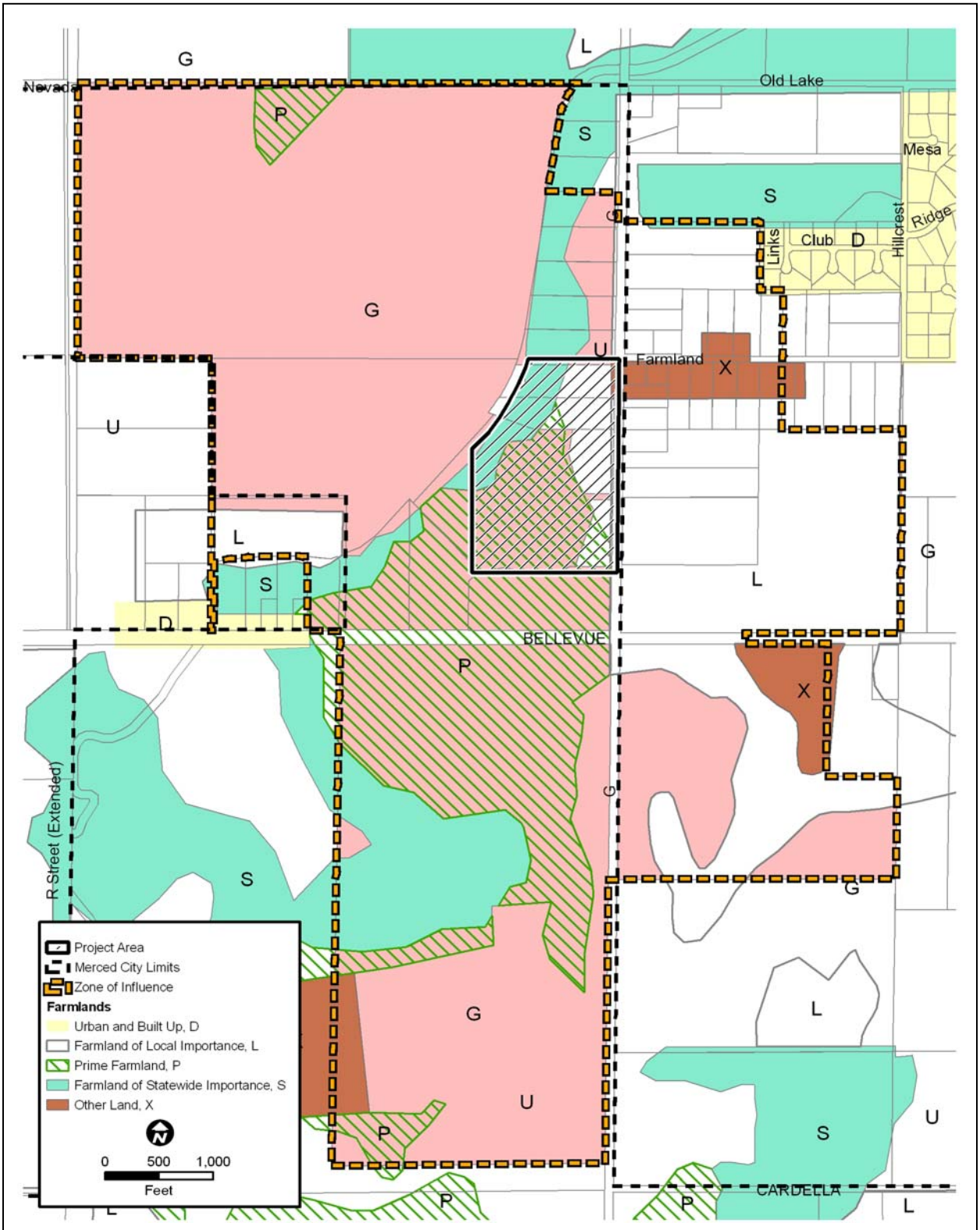
Conclusion: The proposed project will result in the loss of Prime Farmland, which ***is a significant impact***.

Mitigation Measure #3.2-1: There are no mitigation measures for the loss of prime farmland. The loss of Prime Farmland will be ***significant and unavoidable.***

3.3 Air Quality

INTRODUCTION

This section describes the climate at the Project Site and the existing and projected emissions from vehicles traveling to and from this facility and from onsite project operations. Also discussed are the pertinent federal, state, and local Air Pollution Control District regulations.



Quad Knopf

AGRICULTURAL LAND TYPES ON THE PROJECT SITE

Figure 3.2 - 1

The Initial Study concluded that the proposed project would not conflict with any applicable air quality plan; would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment; would not expose sensitive receptors to substantial pollutant concentrations; and would not create objectionable odors. The Initial Study concluded that the proposed project could violate air quality standards. Therefore, this issue is discussed further in the following section.

PHYSICAL AND REGULATORY SETTING

Air Pollution Climatology

The project is located in the San Joaquin Valley Air Basin, which is defined by the Sierra Nevada to the east, the Coast Ranges to the west, and the Tehachapi mountains to the south. The Air Basin is comprised of San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, and Tulare Counties and the valley portion of Kern County; approximately 25,000 square miles (see Figure 3.3-1).

The climate of the Project Area is typical of inland valleys in California, with hot dry summers and cool, mild winters. Daytime temperatures in the summer often exceed 100 degrees, with lows in the 60's. In winter, daytime temperatures are usually in the 50's, with lows around 35 degrees. Radiation (Tule) fog is common in the winter, and may persist for days. Winds are predominantly up-valley (from the north) in all seasons, but more so in the summer and spring months. Winds in the fall and winter are generally lighter and more variable in direction but generally blow towards the south and southeast.

Because of the Valley's unique physical characteristics, its pollution potential is very high. Surrounding elevated terrain, in conjunction with temperature inversions, frequently restricts lateral and vertical dilution of pollutants. Abundant sunshine and warm temperatures in summer are ideal conditions for the formation of photochemical oxidants, and the Valley becomes a frequent scene of photochemical pollution.

Air pollution transported from the San Francisco Bay and Sacramento areas is believed to account for 27 percent of measured ozone levels in the northern portion of the air district (San Joaquin, Stanislaus, and Merced Counties). The percentage drops to about 11 percent in the mid-valley counties (Fresno, Tulare, Madera and Kings Counties) (SJVAPCD website, March 2003).

Regulatory Framework

The California Air Resources Board (CARB) is responsible for enforcing the federally required State Implementation Plan (SIP) in an effort to achieve and maintain the national ambient air quality standards. SIP is the plan prepared by states and submitted to U.S. EPA describing how each federal nonattainment area will attain and maintain national ambient standards. SIPs include the technical foundation for understanding the air quality (e.g. emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms. The SIP incorporates the individual nonattainment plans for air quality districts. In addition, CARB has established State Ambient Air Quality Standards for the Federal "criteria" pollutants as well as for other pollutants for which there are no corresponding Federal standards. CARB is responsible for determining air basin attainment designations in California, and has the authority over mobile sources of pollutants.

Source: California Environmental Protection Agency
Air Resources Board

Quad Knopf	CALIFORNIA AIR BASINS	Figure 3.3 - 1

The SJVAPCD is the local air quality agency and is responsible for preparing regional air quality plans under the state and federal Clean Air Acts. The District's boundaries are contiguous with the San Joaquin Valley Air Basin. In addition to planning responsibilities, SJVAPCD has permitting authority over stationary sources of pollutants.

The SJVAPCD recently implemented the Indirect Source Review (ISR) Program. The purpose of the Program is to reduce emissions of NOx and PM10 from new development projects. In general, new development contributes to the air-pollution problem in the Valley by increasing the number of vehicles and vehicle miles traveled. In 2005, on-road vehicles generated approximately 200 tons per day of NOx and direct PM10 pollution in the Valley. Although newer, cleaner technology is reducing the per-vehicle pollution, the emissions increase from new development putting more vehicles on Valley roads partially offsets the emission reductions gained from technology advances.

Indirect Source Rule (ISR) applies to development projects that have not yet gained discretionary approval. The ISR rule requires developers to reduce 20 percent of construction-exhaust nitrogen oxides; 45 percent of construction-exhaust PM_{10}; 33 percent of operational nitrogen oxides over 10 years; and 50 percent of operational PM_{10} over 10 years. Developers are encouraged to reduce as much air pollution as possible through on-site mitigation, or incorporating air-friendly designs and practices into the project. If the on-site mitigation measures selected by a developer don't achieve the required baseline emission reductions, the developer must mitigate the difference by paying an off-site fee to the District. This fee reduces emissions by helping to fund clean-air projects, such as paving unpaved roads, retiring polluting vehicles, upgrading dirty engines to cleaner models, and other projects. The developer also will pay an administration fee equal to 4 percent of the off-site fee. This project will be subject to ISR.

Ambient Air Quality Standards

Under the federal *Clean Air Act, 42 U.S.C. Section 7401 et. seq. (1970) (as amended 1990)*, the federal government originally established National Ambient Air Quality Standards ("NAAQS") for "criteria" pollutants. Both the U.S. Environmental Protection Agency and the California Air Resources Board have established ambient air quality standards for such criteria pollutants. These ambient air quality standards are maximum levels of contaminants, which are intended to represent safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. The air quality criteria pollutants under state and federal law include ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, PM_{10}, fine particulate matter ($PM_{2.5}$), lead, and hydrogen sulfide.

The federal and California state ambient air quality standards are summarized in Table 3.3-1. The federal and state ambient standards were developed independently with differing purposes and methods, although both processes are intended to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent. This is particularly true for ozone and PM_{10}.

Table 3.3-1
State and Federal Ambient Air Quality Standards
Ozone, Carbon Monoxide, PM_{10}, and Sulfur Dioxide

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	--[8]	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)*		0.08 ppm (157 µg/m^3)		
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		50 µg/m^3		
Fine Particulate Matter (PM_{10} and $PM_{2.5}$)	24 Hour	No Separate State Standard		65 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	15 µg/m^3		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/$m^{3)}$		
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	—	Ultraviolet Fluorescence	0.030 ppm (80 µg/m^3)	—	Spectrophotometry (Pararosaniline Method)
	24 Hour	0.04 ppm (105 µg /m^3)		0.14 ppm (365 µg/m^3)	—	
	1 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.25 ppm (655 µg /m^3)		—	—	—

NOTES:
1) California standards for ozone, carbon monoxide (except Lake Tahoe) and suspended particulate matter PM_{10}, $PM_{2.5}$, and visibility reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2) National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

3) Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4) Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5) National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6) National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7) Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

8) The Federal One Hour National Ambient Air Quality Standard was revoked on June 15, 2005.

SOURCE: State of California, Air Resources Board.

The U.S. Environmental Protection Agency in 1997 adopted new national air quality standards for ground-level ozone and for fine particulate matter. The existing one-hour ozone standard of 0.12 ppm was phased out and replaced by an eight-hour standard of 0.08 ppm. New national

standards for fine Particulate Matter (diameter 2.5 microns or less) have also been established for 24-hour and annual averaging periods. The current PM_{10} standards were retained, but the method and form for determining compliance with the standards were revised. Additionally, a $PM_{2.5}$ state standard was adopted effective July 5, 2003. The San Joaquin Valley is non-attainment for both the State and Federal $PM_{2.5}$ standards.

Regional Air Quality Plans

Federal and state air quality laws require identification of areas not meeting the ambient air quality standards. These areas must develop regional air quality plans to eventually attain the standards. Under both the federal and state Clean Air Acts the San Joaquin Valley Air Basin is a non-attainment area (standards have not been attained) for ozone, PM_{10} and $PM_{2.5}$. The air basin is either attainment or unclassified for other ambient standards.

To meet federal Clean Air Act requirements, the San Joaquin Valley Air Pollution Control District (SJVAPCD) is working on 8-hour Ozone Attainment Demonstration Plan, which will be adopted in 2007. In February 2006, the District adopted the "2006 PM_{10} Plan". The $PM_{2.5}$ plan is in the early stages in development and is due to the EPA in April, 2008.

Current Air Quality

According to SJVAPCD's Planning Division, the estimated population within the SJVAB is nearly 3.2 million persons. The SJVAB has one of the most severe air pollution problems in the State. The surrounding topographic features restrict air movement through and out of the basin and, as a result, impede the dispersion of pollutants from the basin. Inversion layers are formed in the San Joaquin Valley air basin throughout the year. During the summer, the San Joaquin Valley experiences daytime temperature inversions at elevations from 2,000 to 2,500 feet above the valley floor. During the winter months, inversions occur from 500 to 1,000 feet above the valley floor (California Air Resources Board, 1974).

The CARB monitors ozone and PM_{10} in Merced. A summary of air quality data from Merced is shown in Table 3.3-2.

Although the San Joaquin Valley Air Basin is often in violation of state and federal ozone ambient air quality standards and State PM_{10} thresholds, data collected over the past ten years by the California Air Resources Board shows that air quality in the Valley is, in general, improving.

The air basin is designated as a 'serious' nonattainment area for federal 8-hour ozone and annual PM_{10} ambient air quality standards. Under this designation, the air district is required to meet 8-hour ozone standards by 2013 and annual PM_{10} standards by 2010. The basin also exhibits a non-attainment status for $PM_{2.5}$; however, an attainment deadline for this pollutant has not been set. Failure to meet the attainment deadlines could result in increased offset requirements for new industrial sources and potential sanctions, including withholding of federal grants for capacity-expanding transportation projects and new transportation plans, and could ultimately stop all federally funded transportation projects in the District, except safety projects.

Table 3.3-2
Ambient Air Quality - Merced

Year	State Ozone (1-Hour)	Federal Ozone (8-Hour)	State PM_{10}	Federal PM_{10}
1991	13	12	*	*
1992	39	40	*	*
1993	22	19	*	*
1994	31	26	*	*
1995	38	36	*	*
1996	44	44	*	*
1997	1	1	*	*
1998	37	35	*	*
1999	42	40	*	*
2000	32	37	70	0
2001	26	29	*	0
2002	55	56	85	0
2003	54	54	44	0
2004	14	15	12	0
2005	6	3	29	0

Source: Air Resources Board Aerometric Data Analysis and Management System (ADAM)
* No data

Criteria Pollutants

Table 3.3-3 summarizes pollutants, their sources, effects (including health effects), and means of prevention and control. In addition to the table, this section provides further analysis of key pollutants and their health affects as they apply to the San Joaquin Valley.

Ozone, (O_3), is not emitted directly into the environment, but is generated from complex chemical reactions that occur in the presence of sunlight. One of the primary components of the chemical reactions is nitrogen oxide (NOx), which is referred to as an ozone precursor. NOx generators in the San Joaquin Valley include mobile sources, solvents and fuel combustion. Another ozone precursor is reactive organic gases (ROGs), which are generated by anaerobic decomposition of organic substances such as manure and as fossil fuel exhaust components.

Ozone exposure causes eye irritation and damage to lung tissue in humans. It accelerates deterioration of paints, finishes, rubber products, plastics, and fabrics. The San Joaquin Valley Air Basin is currently in non-attainment for the Federal and State standards for ozone; the Merced area (see Table 3.3-2), for example, exceeded State standards for ozone concentrations in ambient surface atmosphere on 14 days during 2004.

Table 3.3-3
Air Pollution Sources, Effects, and Control

Pollutant	Sources	Effects	Prevention and Control
Ozone (O_3)	Formed when reactive organic gases (ROG) and nitrogen oxides react in the presence of sunlight. ROG sources include any source that burns fuels (e.g., gasoline, natural gas, wood, oil);solvents; petroleum processing and storage; and pesticides	Breathing difficulties, lung tissue damage, damage to rubber and some plastics.	Reduce motor vehicle reactive organic gas (ROG) and nitrogen oxide emissions through emissions standards, reformulated fuels, inspections programs, and reduced vehicle use. Limit ROG emissions from commercial operations and consumer products. Limit ROG and NOx emissions from industrial sources such as power plants and refineries. Conserve energy
Respirable Particulate Matter (PM_{10})	Road dust, windblown dust, agriculture and construction, fireplaces. Also formed from other pollutants (acid rain, NOx, SOx, organics). Incomplete combustion of any fuel.	Increased respiratory disease, lung damage, cancer, premature death, reduced visibility, surface soiling.	Control dust sources, industrial particulate emissions, wood burning stoves and fireplaces. Reduce secondary pollutants which react to form PM_{10}. Conserve energy
Fine Particulate Matter ($PM_{2.5}$)	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning. Also formed from reaction of other pollutants (acid rain, NOx, SOx, organics).	Increases respiratory disease, lung damage, cancer, premature death; reduced visibility; surface soiling.	Reduce combustion emissions from motor vehicles, equipment, industries, and agriculture and residential burning. Precursor controls, like those for ozone, reduce fine particle formation in the atmosphere.
Carbon Monoxide (CO)	Any source that burns fuel such as automobiles, trucks, heavy construction equipment and farming equipment, residential heating.	Chest pain in heart patients, headaches, reduced mental alertness	Control motor vehicle and industrial emissions. Use oxygenated gasoline during winter months. Conserve energy.
Nitrogen Dioxide (NO_2)	See Carbon Monoxide	Lung irritation and damage. Reacts in the atmosphere to form ozone and acid rain	Control motor vehicle and industrial combustion emissions. Conserve energy.
Lead	Metal smelters, resource recovery, leaded gasoline, deterioration of lead paint	Learning disabilities, brain and kidney damage	Control metal smelters, No lead in gasoline. Replace leaded paint with non-lead substitutes.
Sulfur Dioxide (SO_2)	Coal or oil burning power plants and industries, refineries, diesel engines	Increases lung disease and breathing problems for asthmatics. Reacts in the atmosphere to form acid rain.	Reduce the use of high sulfur fuels (e.g., use low sulfur reformulated diesel or natural gas). Conserve energy.
Visibility Reducing Particles	See $PM_{2.5}$	Reduces visibility (e.g., obscures mountains and other scenery), reduced airport safety, lower real estate value, discourages tourism	See $PM_{2.5}$
Sulfates	Produced by the reaction in the air of SO_2 (see SO_2 sources), a component of acid rain	Breathing difficulties, aggravates asthma, reduced visibility	See SO_2
Hydrogen Sulfide	Geothermal power plants, petroleum production and refining, sewer gas	Nuisance odor (rotten egg smell), headache and breathing difficulties (higher concentrations)	Control emissions from geothermal power plants, petroleum production and refining, sewers, sewage treatment plants

Carbon monoxide, (CO), concentrations are seasonal, with the highest concentrations occurring in the winter. This may be due to the fact that automobiles create more carbon monoxide in colder weather and partly due to the very stable atmospheric conditions that exist on cold winter evenings when winds are calm. Concentrations typically are highest during stagnant air periods within the period November through January.

Nitrogen dioxide, (NO_2), is a reddish-brown gas that discolors the air, formed during combustion. Its health effects include increased risk of acute and chronic respiratory disease. Major sources are automobile and diesel truck exhaust, industrial processes, and fossil-fueled power plants. The SJVAPCD is an attainment area for the state/federal nitrogen dioxide standards. It is an important pollutant, however, because nitrogen dioxide is one of several oxides of nitrogen (NOx) that participate in the formation of photochemical ozone.

Respirable particulate matter, (PM_{10}), evaluated herein with respect to this project, is released directly into the atmosphere by stationary and mobile sources. PM_{10} consists of a wide range of solid and liquid particles, including smoke, dust, aerosols, and metallic oxides. Major sources of PM_{10} include vehicles, power generation, industrial processing, wood burning, road dust, construction/farming activities, and fugitive windblown dust. The 1995 PM_{10} emission inventory for the San Joaquin Valley Air Basin indicated that fugitive windblown dust, farming operations and road dust were the three leading sources of PM_{10} (SJVAPCD, 2002). The San Joaquin Valley Air Basin is currently in non-attainment (Federally classified as serious) for the Federal and State PM_{10} standards. The effects of high concentrations on humans include aggravation of chronic disease and heart/lung disease symptoms. Non-health effects include reduced visibility and soiling of surfaces.

Fine particulate matter, **(**$PM_{2.5}$**)**, like PM_{10}, (similarly evaluated with respect to this project), is also released directly into the atmosphere by stationary and mobile sources. It is also created in the atmosphere by photochemical and chemical processes acting on precursor pollutants. Sources of $PM_{2.5}$, the fine fraction of PM_{10s} include vehicles, power generation, industrial processes, and wood burning. The health effects of $PM_{2.5}$ are similar to those of PM_{10}; they can impair proper lung function and may contribute to the development of chronic bronchitis. They are a health concern because they easily reach the deepest recesses of the lungs. Scientific studies have linked particulate matter (alone or in combination with other air pollutants) with a series of health problems, including premature death, respiratory related hospital admissions or emergency room visits, aggravated asthma, chronic bronchitis, decrease lung functions, and work and school absences. Those who are most at risk are the elderly, individuals with preexisting heart and lung disease, children, and asthmatics and asthmatic children.

Regular monitoring of $PM_{2.5}$ in the atmosphere in California began in early 1999. The available data show that the highest 24-hour and annual average $PM_{2.5}$ concentrations are found in the South Coast Air Basin and San Joaquin Valley Air Basin. On average, the highest 24-hour concentrations in 1999 and 2000 occurred in November, December and January, while the lowest concentrations occurred between March and August. This seasonality was most pronounced in the San Joaquin Valley Air Basin, where the December-January concentrations were on the order of 4 to 5 times greater that those for March through August.

In July 1997, the EPA adopted an annual $PM_{2.5}$ standard set at 15 µg/m^3 and a new 24-hour $PM_{2.5}$ standard set at 65 µg/m^3. On May 3, 2002, the California Air Resources Board (CARB) staff recommended establishing an annual standard for $PM_{2.5}$ micrometers in diameter and smaller. The new state standard became effective on July 5, 2003.

Measured levels of $PM_{2.5}$ at the Merced monitoring stations show that the state and federal standards have been frequently exceeded in the project vicinity (Table 3.3-2). The San Joaquin Valley Air Basin has been designated nonattainment for $PM_{2.5}$ for both the state and federal standards.

Health Effects

A summary of health effects of air pollutants follows:

Ozone

Reactive organic gasses (ROGs) and oxides of nitrogen (NOx) are precursors of ozone formation. Ozone has been described as having the following health effects:

Ambient tropospheric ozone pollution at sufficient levels can cause upper and lower respiratory irritative symptoms, restrictive and obstructive spirometric changes, and increased responsiveness to methacholine and allergen bronchoprovocation. In epidemiologic studies, ozone has been associated with increased de novo development of chronic respiratory illness and increased incidence of emergency department visits and hospitalizations for asthma and respiratory disease. Animal studies suggest increased susceptibility to bacterial infection. Some evidence supports an association between ambient ozone exposure and increased daily mortality rates. Ozone induced illness is probably very infrequently recognized as such, but may be suspected especially during formation and especially persistence of relatively stagnant hot ambient air masses. Since bright sunlight is present driving the chemical reactions, health effects from heat exposure are concomitant.

Great inter-individual variability exists in ozone responsiveness, with a few individuals suffering clinically important reactions, most persons experiencing mild responses, with the remainder little affected. Persons at risk include persons with asthma or chronic lung disease, and those who are active outdoors for prolonged periods. Examples of this latter group are athletes, children at play, and outdoor workers such as laborers, policemen and firemen, farmers, linemen, loading dock workers, construction workers, and foresters. Ozone related spirometric compromise is more marked in individuals with chronic obstructive lung disease, than in otherwise healthy smokers. Increasing evidence suggests that asthmatics, after exposure to ozone, have increased bronchial reactivity to subsequent allergens. Some non-asthmatics show a similar pattern (Dr. Dickey, J.H., Health M.D., Greater Boston PSR; Effects of Air Pollution).

Recent studies (American Lung Association, State of the Air, 2001) have further validated and documented the adverse health effects of ozone with respect to respiratory disease, and the increase in such effects with respect to asthmatics, children and the elderly.

Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$)

Epidemiologic studies associate PM_{10} with adverse health effects. However, more recent epidemiologic studies have contributed to understanding the size specificity of health effects, and have increasingly implicated the gasses and smaller particles as the more relevant components of hazardous particulate exposure.

Acute symptoms and signs include restricted activity (including days lost from school and work due to respiratory illness), respiratory illnesses, and exacerbations of asthma and pulmonary diseases. Clinical observations include declines in lung function, increased asthma medication use, increased emergency department visits, increased hospitalization, and increased cardiac and respiratory mortality. Although asthmatics seem to increase bronchodilator use during acid aerosol air pollution episodes, they see relatively little improvement in their peak flow meter recordings. Groups at particular risk of acute illness include the elderly (65 years), and persons with chronic heart and lung diseases.

Clinical associations with chronic particulate pollution observed in epidemiologic studies include bronchitis, chronic cough, respiratory illness, pulmonary diseases and asthma exacerbations, decreased longevity, and lung cancer (Dickey, J.H., Health Effects of Air Pollution).

Testimony before the Committee on Science, House of Representatives, on May 8, 2002 by a series of expert witnesses (Mr. Daniel S. Greenbaum, President, Health Effects Institute; Dr. Ronald E. Wyzga, Technical Executive, Electric Power Research Institute, and Dr. Joel Schwarz, Associate Professor of Environmental Epidemiology, Harvard School of Public Health) confirmed the findings described in Dr. Dickey's excerpted statement above.

Nitrogen Dioxide (NO_2)

In addition to being a precursor to ozone formation, high concentrations of nitrogen dioxide have been identified as having direct health effects.

Very high concentrations are very dangerous, causing lung injury, fatal pulmonary edema, and bronchopneumonia. Lower concentrations cause impaired mucociliary clearance, particle transport, macrophage function, and local immunity . . . (and) have been associated with a significant increase in acute respiratory infections, sore throat, colds and absences from school… While ambient NO_2 levels have been associated in epidemiologic meta-analyses with declines in spirometry and cardio respiratory events, NO_2 is less clearly implicated than particulate, sulfur dioxide, and ozone (Dickey, J.H., Health Effects of Air Pollution).

Sulfur Dioxide

Sulfur dioxide not only has a bad odor, it can irritate the respiratory system. Exposure to high concentrations for short periods of time can constrict the bronchi and increase mucous flow, making breathing difficult. Children, the elderly, those with chronic lung disease, and asthmatics are especially susceptible to these effects. Sulfur dioxide can also:

- Immediately irritate the lung and throat at concentrations greater than 6 parts per million (ppm) in many people.

- Impair the respiratory system's defenses against foreign particles and bacteria, when exposed to concentrations less than 6 ppm for longer time periods.

- Apparently enhance the harmful effects of ozone. (Combinations of the two gases at concentrations occasionally found in the ambient air appear to increase airway resistance to breathing.)

- Sulfur dioxide tends to have more toxic effects when acidic pollutants, liquid or solid aerosols, and particulates are also present. Effects are more pronounced among mouth breathers, e.g., people who are exercising or who have head colds. These effects include:

- Health problems, such as episodes of bronchitis requiring hospitalization associated with lower-level acid concentrations.

- Self-reported respiratory conditions, such as chronic cough and difficult breathing, associated with acid aerosol concentrations. (Asthmatic individuals are especially susceptible to these effects. The elderly and those with chronic respiratory conditions may also be affected at lower concentrations than the general population.)

- Increased respiratory tract infections, associated with longer term, lower-level exposures to SO2 and acid aerosols.

- Subjective symptoms, such as headaches and nausea, in the absence of pathological abnormalities, due to long-term exposure.

Source: Wisconsin Department of Natural Resources:
http://www.dnr.state.wi.us/org/aw/air/health/sulfurdiox.htm

Carbon Monoxide

Carbon monoxide displaces oxygen in red blood cells, which reduces the amount of oxygen that human cells need for respiration. Exposure to CO can result in fatigue, angina, reduced visual perception, reduced dexterity, and death. The elderly, young children, and people with pre-existing respiratory conditions are particularly sensitive to carbon monoxide pollution. Carbon monoxide is extremely deadly in an enclosed space, such as a garage or bedroom.

Source: Coalition for Clean Air:
http://www.coalitionforcleanair.org/air-pollution-pollutants.html#Carbon

Sensitive Receptors

One of the criteria for significance includes potential impacts on sensitive receptors. The SJVAPCD Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI), Section 3, January 10, 2002 defines a sensitive receptor as a location where human populations, especially

children, seniors, and sick persons are present and where there is a reasonable expectation of continuous human exposure to pollutants.

Sensitive receptors normally refer to land uses with heightened sensitivity to localized, rather than regional, pollutants. Examples include emissions of criteria or toxic air pollutants that have health effects (PM_{10}, ammonia, H_2S surface dioxide), and to a lesser extent odors or odorous compounds such as ammonia and H_2S. Sensitive receptors would not be directly affected by emissions of regional pollutants such as ozone precursors (ROG and NOx).

The term "sensitive receptor" does not have a distance associated with it; its "sensitivity" is a function of the land use and not necessarily the presence or lack of nearby sources. SJVAPCD CEQA guidance does offer some "screening" distances between various sources and sensitive receptors, but these are useful only for determining when no analysis is required, not for determining significance of impacts.

Possible Receptors

There are several neighborhoods and residences in the vicinity of the Project Site.

IMPACT EVALUATION CRITERIA

Federal and state ambient air quality standards provide a basis for evaluating air quality related impacts (see Table 3.3-1). Non-attainment of a federal or state emission standard for any pollutant is a significant impact. Because the state standards set forth under the *Clean Air Act of 1988* are more restrictive than federal standards, the State standards will be used for comparison of impacts.

Nearly all development projects in the San Joaquin Valley, from general plans to individual site plans, have the potential to generate pollutants that will worsen air quality or make it more difficult for state and national air quality attainment standards to be met. Therefore, for most projects, it is necessary to evaluate air quality impacts to comply with *CEQA.* The SJVAPCD has prepared the GAMAQI as an advisory document that provides lead agencies with uniform procedures for addressing air quality in environmental documents.

The SJVAPCD has established *Thresholds of Significance: Criteria for Determining Environmental Significance.* The short-term emissions are mainly related to the construction phase of the project and are recognized to be short in duration. The long-term emissions are primarily related to the activities that will occur indefinitely as a result of project operations.

The SJVAPCD has established the following standards of significance (SJVAPCD, 1998):

- A project results in estimated carbon monoxide concentrations exceeding the California Ambient Air Quality Standard of 9 parts per million averaged over 8 hours and 20 ppm for 1-hour.

- A project results in new direct or indirect emissions of ozone precursors (ROG or NOx) in excess of 10 tons per year.

- Any project with the potential to frequently expose members of the public to objectionable odors will be deemed to have a significant impact.

- Any project with the potential to expose sensitive receptors (including residential areas) or the general public to substantial levels of toxic air contaminants would be deemed to have a significant impact.

While San Joaquin Valley Air Pollution Control District CEQA guidance recognizes that PM_{10} is a major air quality issue in the basin, it has to date not established numerical thresholds for significance for PM_{10}. However, for the purposes of this analysis, a PM_{10} emission of 15 tons per year (82 pounds per day) was used as a significance threshold. This is the SJVAPCD threshold level at which new stationary sources requiring permits from the District must provide emissions "offsets". This threshold of significance for PM_{10} is consistent with the District's ROG and NOx thresholds of ten tons per year, which are also the offset thresholds established in SJVAPCD Rule 2201 New and Modified Stationary Source Review Rule. The PM_{10} threshold is also consistent with other air quality management districts (i.e. Feather River AQMO in Yuba and Sutter counties, California – 80 lbs/day).

Despite the establishment of both federal and state standards for $PM_{2.5}$ (particulate matter, 2.5 microns), the SJVAPCD has not developed a threshold of significance for this pollutant. Because they are directly related, for this analysis, $PM_{2.5}$ impacts would be considered significant if project emissions of PM_{10} exceed 82 pounds per day.

The SJVAPCD significance threshold for construction dust impacts is based on the appropriateness of construction dust controls. The SJVAPCD guidelines provide feasible control measures for construction emission of PM_{10} beyond that required by district regulations.

The District uses air quality threshold criteria from Appendix G of the *CEQA Guidelines*.

Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

b) Violate any air quality standards or contributes substantially to an existing or projected air quality violation?

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

d) Expose sensitive receptors to substantial pollutant concentrations?

e) Create objectionable odors affecting a substantial number of people?

Summary of SJVAPCD Rules and Processes Applicable to Project. The SJVAPCD has indicated that the following are among those applicable:

- The construction phase of this project can generate emissions from the movement of soil, use of heavy equipment, bulk materials handling, asphalt paving and other related activities. As a result, this project is subject to District Regulation VIII (Fugitive PM_{10} Prohibitions, Rules 8011-8081). The purpose of Regulation VIII is to reduce the amount of fine particulate matter (PM_{10}) entrained into the ambient air from man-made sources.

- Rule 8021 – *Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities* requires the owner or operator of a construction project to submit a Dust Control Plan to the District if at anytime the project involves:,

  - Non-residential developments of five or more acres of disturbed surface area, or

  - Moving, depositing, or relocating of more than 2,500 cubic yards per day of bulk materials on at least three days of the project.

- The Project Site is about 51 acres in size although the entire area would not be disturbed at the same time, at least 5 acres would be subject to construction activities at the same time.

- Paving operations of this project will be subject to Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.

An operation of this size is subject to the permitting requirement of the District under Rule 2201. Any equipment/operation subject to the District's Permit to Operate requirements must obtain an Authority to Construct (ATC) from the District

IMPACTS

Project impacts were evaluated on the basis of CEQA Appendix G criteria. Again, impacts found to be less than significant in the Initial Study were not evaluated in this report. The impacts are discussed in the following order: construction particulate matter emissions, construction gaseous emissions, and operational emissions. Where environmental impacts were found to be significant or potentially significant, mitigation measures are identified to mitigate or avoid significant environmental effects.

Impact #3.3-1 - Construction Emissions - Particulate Matter:
[Evaluation Criteria (b) and (c)]

Project construction will result in numerous activities that generate dust. Grading, earthmoving and excavation are the activities that generate the most PM_{10} and $PM_{2.5}$ emissions. Construction activities associated with project development include site preparation, soil excavation, grading, equipment traffic on paved and unpaved surfaces, and the construction of plant structures.

Because prediction of $PM_{10}/PM_{2.5}$ generation depends on a large number of variables which may change from project to project or from day to day, the SJVAPCD has recommended a

qualitative, rather than a quantitative, approach to assessing impact significance for $PM_{10}/PM_{2.5}$ construction activity emissions.

The air district has developed a menu of $PM_{10}/PM_{2.5}$ control options that define the minimum content of a construction dust control program. The control measures consist of the required Regulation VIII control measures, and other additional, control measures. Regulation VIII (Table 3.3-4) control measures are required for all construction projects to reduce the amount of $PM_{10}/PM_{2.5}$ emissions generated from fugitive dust sources. The additional control measures provide a greater degree of $PM_{10}/PM_{2.5}$ reduction compared to Regulation VIII. According to SJVAPCD guidance, additional control measures are applicable to construction projects that would be expected to generate large $PM_{10}/PM_{2.5}$ emissions, are located near sensitive receptors, or that for other reasons warrant additional emissions reductions.

Prior to the start of construction activities at the school site, the school district will be required to file a Dust Control Plan with the SJVAPCD in accordance with Section 6.3 of Regulation VIII, Rule 8021.

Conclusion: $PM_{10}/PM_{2.5}$ emissions generated during construction constitute a temporary ***potentially significant*** impact, possibly exposing residents downwind to elevated PM_{10} concentrations and contributing to the regional $PM_{10}/PM_{2.5}$ emission burden.

From the perspective of the SJVAPCD, compliance with Regulation VIII for all sites and other implementation of the other SJVAPCD control measures indicated will constitute sufficient mitigation to reduce PM_{10} impacts to a level below significance (see Section 4, Guide for Assessing and Mitigating Air Quality Impacts, SJVAPCD, January 10, 2002). Cumulative impacts however, may remain ***significant***.

Mitigation Measure #3.3-1: The Mandatory Control measures provided in Table 3.3-4 shall be implemented to reduce construction emissions. The following control measures shall also be implemented to reduce particulate matter emissions:

- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use.
- Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways. (For curtailment during periods of high ambient pollutant concentrations, the criteria should be set in terms of the Air Quality Index.)

Effectiveness of Mitigation Measure: The implementation of the above measures will reduce $PM_{10}/PM_{2.5}$ impacts to a level that, under SJVAPCD criteria, is less than significant. As the project is within a non-attainment air basin for PM_{10}, the impact is considered to be ***cumulatively significant, considerable and unavoidable.***

Table 3.3-4
Mandatory Control Measures for Construction, Excavation, Extraction, and Other Earthmoving Activities

A. Pre-Activity:

A1: Pre-water site sufficient to limit Visible Dust Emissions (VDE) to 20% opacity

A2: Phase work to reduce the amount of disturbed surface area at any one time.

B. During Active Operations:

B1: Apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20% opacity

B2: Construct and maintain wind barriers sufficient to limit VDE to 20% opacity. If utilizing wind barriers, control measure B1 above shall also be implemented.

B3: Apply water or chemical/organic stabilizers/suppressants to unpaved haul/access roads and unpaved vehicle/equipment traffic areas sufficient to limit VDE to 20% opacity and meet the conditions of a stabilized unpaved road surface.

C. Temporary Stabilization During Periods Of Inactivity:

C1: Restrict vehicular access to the area

C2: Apply water or chemical/organic stabilizers/suppressants, sufficient to comply with the conditions of a stabilized surface. If an area having 0.5 acres or more of disturbed surface area remains unused for seven or more days, the area must comply with the conditions for a stabilized surface area as defined below:

Stabilized Surface: any disturbed surface area or open bulk material storage pile that is resistant to wind blown fugitive dust emissions. A surface is considered to be stabilized if it meets at least one of the following conditions:

- A visible crust; or
- A threshold friction velocity (TFV) for disturbed surface areas corrected for non-erodible elements of 100 centimeters per second or greater; or
- A flat vegetative cover of at least 50 percent that is attached or rooted vegetation; or unattached vegetative debris lying on the surface with a predominant horizontal orientation that is not subject to movement by wind; or
- A standing vegetative cover of at least 30 percent that is attached or rooted vegetation with a predominant vertical orientation; or
- A standing vegetative cover that is attached or rooted vegetation with a predominant vertical orientation that is at least 10 percent and where the TFV is at least 43 centimeters per second when corrected for nonerodible elements; or
- A surface that is greater than or equal to 10 percent of non-erodible elements such as rocks, stones, or hard-packed clumps of soil.

D. Speed Limitations and Posting of Speed Limit Signs

D1: Limit the speed of vehicles traveling on uncontrolled unpaved access/haul roads within construction sites to a maximum of 15 miles per hour.

D2: Post speed limit signs that meet State and Federal Department of Transportation standards at each construction site's uncontrolled unpaved access/haul road entrance. At a minimum, speed limit signs shall also be posted at least every 500 feet and shall be readable in both directions of travel along uncontrolled unpaved access/haul roads.

E. Wind Generated Fugitive Dust Requirements

E1: Cease outdoor construction, excavation, extraction, and other earthmoving activities that disturb the soil whenever VDE exceeds 20% opacity. Indoor activities such as electrical, plumbing, dry wall installation, painting, and any other activity that does not cause any disturbances to the soil are not subject to this requirement.

E2: Continue operation of water trucks/devices when outdoor construction excavation, extraction, and other earthmoving activities cease, unless unsafe to do so.

Implementation/Monitoring: The mitigation measures shall be implemented by the construction contractor and the applicant. Monitoring shall be the responsibility of the SJVAPCD.

Impact #3.3.2 –Construction Emissions - Gaseous Emissions:
[Evaluation Criteria (b) and (c)]

The major sources of construction-related emissions are mobile and stationary equipment, construction-related vehicle trips, and Reactive Organic Gases (ROG) from the application of asphalt and architectural coatings. NOx, ROG, and PM_{10} are contained in the exhaust fumes emitted from mobile construction equipment, including utility engines and vehicles involved directly in construction, and those that are used to transport equipment and materials to and from the site. The amount of exhaust emissions that are generated would depend on the time frame of the proposed development and the construction equipment that is required. Construction equipment related impacts will increase emissions and degrade local air quality.

Conclusion: Impacts of construction activities will temporarily increase emissions of NOx, ROG, and $PM_{10.}$ This represents a ***potentially significant impact***.

Mitigation Measures #3.3-2: The following measures from the GAMAQI (January 2002) shall be implemented in order to reduce gaseous construction emissions:

- Use alternative fueled or catalyst equipped diesel construction equipment where feasible.
- Minimize idling time to a maximum of 10 minutes.
- Where feasible, replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable fossil fuel generator set).
- Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways.

Effectiveness of Mitigation Measure: The implementation of the above construction-related mitigation measures would reduce gaseous construction impacts, but the reduction is not quantifiable. The impacts will remain ***significant and unavoidable***.

Implementation/Monitoring: The mitigation measures shall be implemented by the construction contractor and the applicant. Monitoring shall be the responsibility of the SJVAPCD.

Impact #3.3-3 - Operational Air Emissions: Fossil fueled equipment and project-related traffic will produce emissions such as hydrocarbons, carbon monoxide, and nitrogen oxide, which are known ozone precursors and particulate matter. At full buildout the proposed project activities will result in approximately 5,040 daily vehicle trips.

Emissions estimates for the project were calculated using the URBEMIS 2002 Computer Program and incorporated into this DEIR as Appendix B. Based on that study, the project will produce the following emissions as shown in Table 3.3-5.

Table 3.3-5
Project Emissions
Mitigated (Tons/Year)

	ROG	NOx	CO	PM_{10}
Area	0.45	0.39	0.40	---
Operational	13.47	14.56	125.99	10.57
Total	13.52	14.95	126.39	10.57
Significant?	YES	YES	NO	NO

Conclusion: Project related gaseous emissions represent a ***significant impact***.

Mitigation Measure #3.3-3: Require the following design features be implemented:

- Use energy efficient design including automated control system for heating/air conditioning and energy efficiency, utilize lighting controls and energy-efficient lighting in buildings and use light colored roof materials to reflect heat.
- Plant deciduous trees on the south and westerly facing sides of buildings.
- Provide low nitrogen oxide (NOx) emitting and/or high efficiency water heaters.
- Purchase low-emission, alternatively-fueled or electrical-driven maintenance vehicles and equipment.
- Promote pedestrian, bicycle and transit modes of travel through informational programs and provision of amenities such as transit shelters, secure bicycle parking and attractive pedestrian pathways.
- Designate an on-site Transportation Systems Management coordinator.
- Implement carpool/vanpool program, e.g., carpool ride-matching for employees, assistance with vanpool formation, provision of vanpool vehicles, student carpooling incentives, etc.
- Coordinate with the local transit operators to extend or expand service to the Project Area.
- Provide transit use incentives, provide transit alternatives information such as printed schedules and establish transit information kiosks at appropriate locations.
- Implement parking cash-out program for employees (non-driving employees receive transportation allowance equivalent to the value of subsidized parking).
- Provide showers and lockers for employees bicycling or walking to work.

Effectiveness of Mitigation Measure: The above measures would reduce project air quality impacts, but not below the SJVAPCD thresholds of significance, therefore project impacts on air quality would remain ***significant and unavoidable***.

3.4 Biological Resources

INTRODUCTION

The central and southern San Joaquin Valley historically supported a diverse assemblage of natural vegetation communities and plant and animal species. Conversion of large expanses of native plant communities to agricultural, urban, oil field, and associated infrastructure developments have resulted in many species becoming endangered, threatened, rare or otherwise considered sensitive. This section of the DEIR identifies and addresses potential project-related effects on biological resources including special-status plan communities and plant and animal species that could potentially result from the proposed project. A Reconnaissance Level Biological Survey was conducted by Monk and Associates (July 2007) and is included as Appendix C. The Initial Study found that there will be no conflict with any local policies and ordinances protecting biological resources, and that no conflicts with an adopted Habitat Conservation Plan or Natural Community Conservation Plan or other plans and ordinances protecting biological resources. This DEIR section does not address those issues because they have been determined to have no significant effect.

Table 3.4-1 of this document provides a list of potentially occurring special-status species and habitats, and provides information about the habitat requirements of each species. That table provides information about the actual or potential occurrence of each species on the Project Site based upon the biological surveys and addresses the impacts of the project on each species. In the text, these species are grouped and discussed by taxon, but only those species that may be significantly affected by the projected or which some discussion is necessary are included. For brevity, the mitigation measures are written to apply to multiple species whenever possible. An evaluation of potential impacts to wetlands, which includes waters of the United States and State, as regulated by the U.S. Army Corps of Engineers (Corps), California Regional Water Quality Control Board (RWQCB), and CDFG are also covered.

IMPACT EVALUATION CRITERIA

Public Resources Code Section 21001(c) finds and declares that it is the policy of the State to prevent the elimination of fish or wildlife species due to human activities, ensure that fish and wildlife populations do not drop below self-sustaining levels, and preserve for future generations representations of all plant and wildlife communities and examples of the major periods of California history. *Section 15065(a)* of the *CEQA Guidelines* states that a project may have a significant effect on the environment if it has the potential to substantially reduce the habitat of a fish or wildlife species or cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare or threatened species. Those criteria that were not eliminated in the Initial Study are evaluated in this DEIR.

Table 3.4-1
List of Special Status Species, their Habitat Requirements, Probability of Occurrence, and an Assessment of Project Impacts

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence and Assessment of Impacts*
Plants				
Agrostis hendersonii	Henderson's bent grass	3	Margins of vernal pools and in thin soils in mesic grassland.	**Absent.** The Project Site does not contain suitable habitat to support this plant. The site contains dense, non-native flora and is subject to repeated disking and cultivation, prohibiting this species from becoming established. The proposed project will not significantly impact this species.
Atriplex cordulata	heartscale	1B	Chenopod scrubland and grassland habitats. Also known to occur in wet areas.	**Absent.** This plant requires alkaline soils. The soils on the Project Site are slightly acidic to neutral and are not suitable to support this plant. The proposed project will not significantly impact this species.
Atriplex minuscula	lesser saltscale	1B	Chenopod scrubland, grassland, and alkali sink habitats. Also known to occur in wet areas.	**Absent.** This plant requires alkaline soils. The soils on the Project Site are slightly acidic to neutral and are not suitable to support this plant. The proposed project will not significantly impact this species.
Atriplex persistens	vernal pool smallscale	1B	Alkaline grasslands as well as large and small claypan and alkaline vernal pools.	**Absent.** This plant requires alkaline soils. The soils on the Project Site are slightly acidic to neutral and are not suitable to support this plant. The proposed project will not significantly impact this species.
Atriplex subtilis	subtle orache	1B	Chenopod scrubland, grassland, and alkali sink habitats. Also known to occur in wet areas.	**Absent.** This plant requires alkaline soils. The soils on the Project Site are slightly acidic to neutral and are not suitable to support this plant. The proposed project will not significantly impact this species.
Calycadenia hooveri	Hoover's calycadenia	1B	Thin soils and small, soil filled cracks on and around rocky outcroppings.	**Absent.** The Project Site does not contain suitable habitat to support this plant. The proposed project will not significantly impact this species.

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence and Assessment of Impacts*
Castilleja campestris ssp. succulenta	succulent owl's-clover	FT, CE, 1B	Margins of vernal pools, swales and some seasonal wetlands, often on acidic soils.	**Absent.** The Project Site does not contain suitable habitat to support this plant. The site contains dense, non-native flora and is subject to repeated disking and cultivation, prohibiting this species from becoming established. The proposed project will not significantly impact this species.
Clarkia rostrata	beaked clarkia	1B	Oak-pine woodland, valley and foothill grasslands at +/-1600 feet.	**Absent.** The Project Site does not contain suitable habitat to support this plant. The proposed project will not significantly impact this species.
Delphinium recurvatum	recurved larkspur	1B	Chenopod scrubland, grassland, and foothill woodland.	**Absent.** The Project Site does not contain suitable habitat to support this plant. The site contains dense, non-native flora and is subject to repeated disking and cultivation, prohibiting this species from becoming established. The proposed project will not significantly impact this species.
Downingia pusilla	dwarf downingia	2	Vernal pools.	**Absent.** The Project Site does not contain suitable habitat to support this plant. The site contains dense, non-native flora and is subject to repeated disking and cultivation, prohibiting this species from becoming established. The proposed project will not significantly impact this species.
Eryngium racemosum	Delta button-celery	CE, 1B	Clay soils on sparsely vegetated margins of seasonally flooded flood plains.	**Absent.** The Project Site does not contain suitable habitat to support this plant. The proposed project will not significantly impact this species.
Eryngium spinosepalum	spiny-sepaled button-celery	1B	Vernal pools and depressions within grasslands.	**Absent.** The Project Site does not contain suitable habitat to support this plant. The site contains dense, non-native flora and is subject to repeated disking and cultivation, prohibiting this species from becoming established. The proposed project will not significantly impact this species.

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence and Assessment of Impacts*
Gratiola heterosepala	Boggs Lake hedge-hyssop	CE, 1B	Vernal pools, lake or reservoir margins in shallow water or moist ground on adobe soil. In grassland, oak woodlands, sagebrush-juniper and pine forest habitat types.	**Absent.** The Project Site does not contain suitable habitat to support this plant. The site contains dense, non-native flora and is subject to repeated disking and cultivation, prohibiting this species from becoming established. The proposed project will not significantly impact this species.
Navarretia myersii ssp. Myersii	pincushion navarretia	1B	Vernal pools.	**Absent.** The Project Site does not contain suitable habitat to support this plant. The site contains dense, non-native flora and is subject to repeated disking and cultivation, prohibiting this species from becoming established. The proposed project will not significantly impact this species.
Navarretia nigelliformis ssp. radians	shining navarretia	1B	Vernal pools.	**Absent.** The Project Site does not contain suitable habitat to support this plant. The site contains dense, non-native flora and is subject to repeated disking and cultivation, prohibiting this plant from becoming established The proposed project will not significantly impact this species.
Neostapfia colusana	Colusa grass	FT, CE, 1B	Vernal pools.	**Absent.** The Project Site does not contain suitable habitat to support this plant. The site contains dense, non-native flora and is subject to repeated disking and cultivation, prohibiting this plant from becoming established The proposed project will not significantly impact this species.
Orcuttia inaequalis	San Joaquin Valley orcutt grass	FT, CE, 1B	Vernal pools.	**Absent.** The Project Site does not contain suitable habitat to support this plant. The site contains dense, non-native flora and is subject to repeated disking and cultivation, prohibiting this species from becoming established. The proposed project will not significantly impact this species.
Orcuttia pilosa	hairy orcutt grass	FE, CE, 1B	Vernal pools.	**Absent.** The Project Site does not contain suitable habitat to support this plant. The site contains dense, non-native flora and is subject to repeated disking and cultivation, prohibiting this plant from becoming established. The proposed project will not significantly impact this species.

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence and Assessment of Impacts*
Phacelia ciliata var. opaca	Merced phacelia	1B	Heavy clay soils on the San Joaquin Valley floor and adjacent low hills at elevations below 100 m.	**Absent.** The Project Site does not contain suitable habitat to support this plant. The site contains dense, non-native flora and is subject to repeated disking and cultivation, prohibiting this plant from becoming established. The proposed project will not significantly impact this species.
Sagittaria sanfordii	Sanford's arrowhead	1B	Shallow, standing, fresh water and sluggish waterways within the following: marshes, swamps, ponds, vernal pools and lakes, reservoirs, sloughs, ditches, canals, streams and rivers at elevations from 10 to 2,000 feet.	**Absent.** The Project Site does not contain suitable habitat to support this plant. The proposed project will not significantly impact this species.
Tuctoria greenei	Greene's tuctoria	FE, 1B	Small or shallow vernal pools or the early drying sections of large, deep vernal pools in the Central Valley.	**Absent.** Although the Project Site is in a region that has been identified as being critically important for the long term survival of this species, habitat suitable to support this plant does not exist on the site. The proposed project will not significantly impact this species.
Wildlife				
Agelaius tricolor	tricolored blackbird	CSC, MBTA	Near fresh water, prefers emergent wetland with tall, dense cattails or tules, but also found in thickets of willow, blackberry, wild rose, tall herbs. Feeds in grassland and cropland habitats.	**Absent.** This species may forage on the Project Site, but breeding habitat is not present. Suitable habitat for breeding occurs along Fahrens Creek and in the vernal pool and grassland areas to the west of Fahrens Creek. The project may have a significant impact on this species by disrupting breeding and nesting behaviors of birds nesting adjacent to the site. Pre-construction surveys for this species will be conducted. If warranted, avoidance measures will be implemented, reducing impacts to this species to less than significant.
Ambystoma californiense	California tiger salamander	FT, CSC	Natural ephemeral pools or ponds that mimic them.	**Absent.** No breeding habitat (vernal pools, puddles, or ponds that remain inundated for 12 weeks or more) currently exists on the Project Site. It is unlikely that this species aestivates on the project site because of long-term discing of the site. The proposed project will not have a significant impact on this species.

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence and Assessment of Impacts*
Athene cunicularia	burrowing owl	CSC, MBTA	Open, dry grassland and desert habitats. Requires rodent or other burrows for roosting and nesting cover.	**Possible.** This bird is known to occur near the Project Site. Although none were observed on the site during various surveys, this owl could be present as a summer resident or winter visitor. The site does not provide suitable denning habitat for this owl, except in a limited area where California ground squirrel burrows are located along Fahrens Creek. The site contains a suitable prey base for burrowing owls. Significant impacts to this species may occur. Pre-construction surveys will be conducted for this species. If warranted, avoidance and mitigation measures will be implemented, reducing project impacts to less than significant.
Branchinecta conservatio	Conservancy fairy shrimp	FE	Rather large, cool-water vernal pools with moderately turbid water.	**Absent.** No vernal pools, puddles, or ponds suitable to support this species currently exist on the Project Site. The site was visited after two weeks of moderate to heavy rainfall and there was no evidence of standing water. The proposed project will not have significant impacts on this species.
Branchinecta lynchi	vernal pool fairy shrimp	FT	A variety of vernal pool habitats from small, clear sandstone rock pools to large, turbid, alkaline, grassland valley floor pools.	**Absent.** No vernal pools, puddles, or ponds suitable to support this species currently exist on the Project Site. The site was visited after two weeks of moderate to heavy rainfall and there was no evidence of standing water.. The proposed project will not have significant impacts on this species.
Buteo regalis	Ferruginous hawk	CSC, MBTA	Open grasslands during the winter. This bird does not breed in California and is rarely seen during the summer.	**Possible.** This hawk may forage on the Project Site during the winter. None were seen during the field survey, but they could be present as transient foragers. The proposed project will not significantly impact this species.
Buteo swainsoni	Swainson's hawk	CSC, MBTA	Riparian forests and other forested areas. Roosts in a variety of trees and forages widely over forests, grasslands, and shrublands. Easily disturbed by human activities.	**Possible.** This species would not breed, but could forage on the Project Site. Trees along Fahrens Creek may provide roosting and nesting habitat for this hawk. The Project Site and surrounding areas provide foraging habitat. This project may have a significant impact on Swainson's hawks. Pre-construction surveys will be conducted and, if needed,

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence and Assessment of Impacts*
				avoidance and mitigation measures will be implemented. These measures will reduce project impacts to less than significant.
Calypte costae	Costa's hummingbird	CSC, MBTA	Desert washes, dry chaparral, sage scrub, arid hillsides and mesas.	**Absent.** Habitat for this species is not present on the Project Site, but this species may occur from time to time as a transient. Significant impacts to this species will not occur.
Carduelis lawrencei	Lawrence's Goldfinch	CSC, MBTA	Valley foothill hardwood and desert areas.	**Unlikely.** Habitat for this species is not present on the Project Site. This bird has been observed in the foothills of eastern Merced County and could occur from time to time as a transient on the Project Site. Significant impacts to this species will not occur.
Charadrius montanus	mountain plover	CSC, MBTA	Short grasslands and plowed fields of the Central Valley.	**Possible.** The Project Site and surrounding area provides winter foraging habitat for this bird. The project would remove foraging habitat for the plover, but the impacts to the species are not significant because of the low quality of the habitat on site and because of the availability of more suitable foraging habitat in the vicinity of the site.
Circus cyaneus	Northern harrier	CSC, MBTA	Forages over open plains, grasslands, and agricultural areas in the San Joaquin Valley. Nests on open ground or in marshy situations.	**Present.** This species was observed foraging over the Project Site. It potentially nests on the Project Site. Significant impacts to this species may occur by disrupting nesting behavior.
Corynorhinus townsendii	Pacific western big-eared bat	CSC	The distribution of this species is strongly correlated with the availability of suitable caves, mines, rock shelters, tunnels, and buildings that it uses for roosting. It may forage over agricultural and open fields.	**Unlikely.** There is no roosting habitat available on site or in the immediate vicinity of the site. This bat could forage over Fahrens Creek and the agricultural and open fields on the site and in the vicinity of the site. There are no nearby locations suitable for roosting. Impacts to this species from the proposed project will be less than significant.
Elanus leucurus	White-tailed kite	CSC, MBTA	Open grassland and agricultural areas of California.	**Present.** This bird was observed foraging over the Project Site, but roosting and breeding habitat does not exist on the site. Kites may roost and nest in the trees along Fahrens Creek, adjacent to the Project Site. The project may have a

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence and Assessment of Impacts*
				significant impact on this species by causing disruption to nesting behaviors. Pre-construction surveys and avoidance will reduce impacts to less than significant.
Emys (=Clemmys) marmorata	western pond turtle	CSC	Permanent or nearly permanent water in a wide variety of habitat types.	**Absent.** This species was not found on the site. Fahrens Creek, flowing along the northwest corner of the Project Site, may provide habitat for the pond turtle. The proposed project will not have a significant impact on this species.
Eumpos perotis	Greater western mastiff bat	CSC	This bat is an uncommon resident in the San Joaquin Valley. It occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban. It roosts in crevices in cliff faces, high buildings, trees, and tunnels.	**Unlikely.** Roosting sites for this species are not present on the Project Site. Potential roosting sites occur along Fahrens Creek (large trees). This species could forage over Fahrens Creek and the Project Site. The proposed project will not have a significant impact on this species.
Falco columbarius	Merlin	CSC	This raptor occurs along the seacoast, in tidal estuaries, open woodlands, savannahs, edges of grasslands and deserts, and farms and ranches. It requires clumps of trees or windbreaks for roosting in open country.	**Unlikely.** No nesting habitat for this species occurs on-site, but this species may be a transient forager. The proposed project will not significantly impact this species.
Gambelia sila	blunt-nosed leopard lizard	FE, CE	Sparsely vegetated alkali and desert scrub habitats.	**Absent.** Suitable habitat for this lizard does not exist on the Project Site. The proposed project will not have a significant impact on this species.
Grus Canadensis tabida	Greater sandhill crane	CSC, MBTA	This bird winters in California's Central Valley. Its preferred habitat is large freshwater marshes, prairie ponds, and marshy tundras. Can also be found on prairies and grain fields during migration and in winter.	**Possible.** This bird may forage on the Project Site during the winter. None were seen during the field survey, but they could be present as transient foragers. The proposed project will not significantly impact this species.
Haliaeetus leucocephalus	Bald eagle	FT, CE	This majestic raptor occurs along ocean shorelines, lake margins, and river courses for both nesting and wintering. Most nests are within one mile of water.	**Absent**. Nesting and foraging habitat for this species does not occur on the project site. Significant impact to this species will not result from the proposed project**.**

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence and Assessment of Impacts*
Lanius ludovicianus	Loggerhead shrike	CSC, MBTA	Nest in dense foliage, but forage on large insects and small amphibians and reptiles in open areas.	**Likely.** This bird is likely to forage over the Project Site. None were seen during the field survey, but they are known to occur in the project vicinity. The proposed project will not significantly impact this species.
Lepidurus packardi	vernal pool tadpole shrimp	FE	Vernal pools containing clear to highly turbid water.	**Absent.** No vernal pools, puddles, or ponds suitable to support this species currently exist on the Project Site. The site was visited after two weeks of moderate to heavy rainfall and there was no evidence of standing water. The site likely supported pools in the past, prior to agricultural cultivation. The proposed project will not have significant impacts on this species.
Melanerpes lewis	Lewis's woodpecker	CSC, MBTA	Occurs in open oak savannahs, broken deciduous, and coniferous habitats.	**Unlikely.** Suitable habitat for this species does not occur on the Project Site. The riparian zone of Fahrens Creek, adjacent to the site, may provide habitat for this woodpecker. The proposed project will not have a significant impact on this species.
Mylopharodon conocephalus	hardhead	CSC	Pools and side pools of rivers and creeks.	**Absent.** This fish may be present in Fahrens Creek adjacent to the Project Site. The project will not disturb the creek, thus there will be no impacts to this species.
Myotis ciliolabrum	Small-footed myotis bat	CSC	The distribution of this species is strongly correlated with the availability of suitable caves, mines, rock shelters, tunnels, and buildings that it uses for roosting. It may forage over agricultural and open fields.	**Unlikely.** There is no roosting habitat available on site or in the immediate vicinity of the site. This bat could forage over Fahrens Creek and the agricultural and open fields on the site and in the vicinity of the site. There are no nearby locations suitable for roosting. Impacts to this species from the proposed project will be less than significant.
Myotis volans	Long-legged myotis bat	CSC	Roosts in trees, crevices, and buildings, especially in forested areas. May forage over agricultural and open fields.	**Unlikely.** There is no roosting habitat available on site, but potential roosting sites (large trees) do occur along Fahrens Creek. This bat may forage over Fahrens Creek and the agricultural and open fields on the site. The proposed project will not significantly impact this species.

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence and Assessment of Impacts*
Myotis yumanesis	Yuma myotis bat	CSC	The distribution of this species is strongly correlated with the availability of suitable caves and caves, mines, rock shelters, tunnels, and buildings that it uses for roosting. It may forage over agricultural and open fields.	**Unlikely.** There is no roosting habitat available on site or in the immediate vicinity of the site. This bat could forage over Fahrens Creek and the agricultural and open fields on the site and in the vicinity of the site. There are no nearby locations suitable for roosting. Impacts to this species from the proposed project will be less than significant.
Numenius americanus	Long-billed curlew	CSC, MBTA	These birds frequent lake and river shores, mudflats, salt marshes, and sandy beaches. They may forage in open fields during migrations.	**Possible.** Suitable foraging habitat exists on site. This species may be present as a transient during the winter. None were seen on the site during the field survey. The proposed project will not significantly impact this species.
Plegadis chihi	white-faced ibis	CSC, MBTA	This bird prefers salt and fresh marshes, but it is often found in cultivated fields and grasslands in the central valley, especially during the winter.	**Possible.** The Project Site is located within an agricultural setting that is suitable winter foraging habitat. The proposed project will not significantly impact this species.
Selasphorus rufus	Rufous hummingbird	CSC, MBTA	Occurs in Central Valley riparian zones during migration.	**Unlikely.** This bird may use the riparian zone of Fahrens Creek, adjacent to the site, as a migration and foraging corridor and may forage on flowers or insects on the Project Site. This bird is rare in eastern Merced County and will not be significantly affected by this project.
Spea (=Scaphiopus) hammondii	western spadefoot toad	CSC	Grasslands with shallow temporary pools.	**Absent.** No breeding habitat (vernal pools, puddles, or ponds) for this species currently exists on the Project Site. It is unlikely likely that this species occurs on the site. The proposed project will not have a significant impact on this species.
Thamnophis gigas	giant garter snake	FT, CT	Permanent or semi-permanent marshes and sloughs.	**Absent.** Fahrens Creek and the Tower Lateral Canal, both adjacent to the Project Site, is not likely to provide suitable aquatic habitat for this species. The proposed project will not significantly impact this species.
Vulpes macrotis mutica	San Joaquin kit fox	FE, CT	Open, dry grassland & shrub and open forest habitats on the floor of the San Joaquin Valley and surrounding foothills.	**Absent.** Suitable habitat for the kit fox exists on the Project Site and in the vicinity of the Project Site. This species is known to occur in eastern Merced County (east of Hwy. 99) in extremely low numbers. The project will not have a significant impact on this species.

Scientific Name	Common Name	Status	Habitat Requirements	Probability of Occurrence and Assessment of Impacts*
Sensitive Natural Communities				
Northern Claypan Vernal Pool	Northern Claypan Vernal Pool	RARE	Fairly old, circum-neutral to alkaline, Si-cemented hardpan soils. Often more or less saline. Intergrades via Cismontane Swale with Cismontane Alkali Marsh which has water present throughout the year.	**Absent.** Soils on the Project Site would not support this type of Vernal Pool.
Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	RARE	Old, very acidic, Fe-Si cemented hardpan soils (Redding, San Joaquin, and similar series). The microrelief on these soils typically is hummocky, with mounds intervening between localized depressions. Winter rainfall perches on the hardpan, forming pools in the depressions. Evaporation (not runoff) empties pools in the spring.	**Absent.** Vernal pools probably existed on the site prior to agricultural cultivation. The site visit occurred after two weeks of moderate to heavy rainfall, but there was no evidence of standing water on the Project Site. Vernal Pools are not likely to re-occur on the Project Site.

Sources:

- California Department of Fish and Game. 2005. California Natural Diversity Data Base, California Department of Fish and Game, Sacramento, CA. Quads: Merced, Plainsburg, El Nido, Atwater, Winton, Sandy Mush, Planada, Haystack Mountain, and Yosemite Lake
- California Native Plant Society (CNPS). 2005. Inventory of Rare and Endangered Plants (online edition, v6-05b 4-11-05). Rare Plant Scientific Advisory Committee. California Native Plant Society. Sacramento, CA. Quads: Merced, Plainsburg, El Nido, Atwater, Winton, Sandy Mush, Planada, Haystack Mountain, and Yosemite Lake
- Unites States Fish and Wildlife Service. 2006. Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Merced U.S.G.S 7 ½ Minute Quad. USFWS. Sacramento, CA

Abbreviations:

FE Federal Endangered Species
FT Federal Threatened Species
MBTA Species Protected Under the Auspices of the Migratory Bird treaty Act
CE California Endangered Species
CT California Threatened Species
CSC California Department of Fish and Game Species of Special Concern
1B Plants Rare, Threatened, or Endangered in California and Elsewhere

Abbreviations (continued):

2 Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere
3 Plants about Which We Need More Information

*Potential Occurrence Definitions:

Present: Species or sign of their presence observed on site at time of the field survey.
Likely: Species not observed on site, but may reasonably be expected to occur there on a regular basis. Or, species not observed on the site, exceptional habitat exists, and additional surveys needed to verify presence.
Possible: Species not observed on site, but could occur there from time to time. Or, species not observed on the site, suitable habitat exists, and additional surveys needed to verify presence
Unlikely: Species not observed on site, and would not be expected to occur there except, perhaps, as a transient. Or, species not observed on the site, marginally suitable habitat exists, and additional surveys needed to verify presence.
Absent: Species or sign of their presence not observed on site, and precluded from occurring there because habitat requirements not met.

Criteria for evaluation of impacts to biological resources are:

Would the project:

1) *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

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

3) *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?*

4) *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

Section 15380 of the *CEQA Guidelines* defines endangered, threatened, and rare species that must be addresses under evaluation criteria (a), listed above, as:

1) *"Endangered" when its survival and reproduction in the wild are in immediate jeopardy from one or more causes including loss of habitat, over-exploitation, predation, competition, disease, or other factors; or*

2) *"Rare" (all animals designated as rare by the Fish and Game Commission prior to January 1, 1985, were automatically reclassified as threatened by Fish and Game Code Sec. 2067) when either:*

   (a) *Although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or*

   (b) *The species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in the Federal Endangered Species Act.*

   (c) *A species of animal or plant shall be presumed to be endangered, rare or threatened, if it is listed in:*

      (1) *Sections 670.2 or 670.5, Title 14, California Administrative Code of Regulations; or*

(2) Title 50, Code of Federal Regulations Sections 17.11 or 17.2 pursuant to the Federal Endangered Species Act as rare, threatened, or endangered.

(d) A species not included in any listing identified in subsection (c) shall nevertheless be considered to be rare or endangered if the species can be shown to meet the criteria in subsection (b).

(e) This definition shall not include any species of the Class Insecta which is a pest whose protection under the provisions of CEQA would present an overwhelming and overriding task to man as determined by:

(1) The Director of Food and Agriculture with regard to economic pests; or

(2) The Director of Health Services with regard to health risks.

REGULATORY SETTING

This section provides a discussion of those laws and regulations that protect native wildlife, fish, and plants.

Federal Endangered Species Act

The primary focus of the FESA of 1973 is that all federal agencies must seek to conserve threatened and endangered species through their actions. FESA has been amended several times to correct perceived and real shortcomings. FESA contains three key sections. Section 4 (16 USCA §1533) outlines the procedure for listing endangered plants and wildlife. Section 7 (§1536) imposes limits on the actions of federal agencies that might impact listed species. Section 9 (§1538) prohibits the "taking" of a listed species by anyone, including private individuals, and State and local agencies. In the case of salt water fish and other marine organisms, the requirements of FESA are enforced by the National Marine Fisheries Service (NMFS).

Section 9 of FESA as amended, prohibits the "take" of any fish or wildlife species listed under FESA as endangered. Under Federal regulation, "take" of fish or wildlife species listed as threatened is also prohibited unless otherwise specifically authorized by regulation. "Take," as defined by FESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Recent court cases have found "harm" includes not only the direct taking of a species itself, but the destruction or modification of the species' habitat resulting in the potential injury of the species. As such, "harm" is further defined to mean "an act which actually kills or injures wildlife; such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 CFR 17.3). Harm must be tempered against a court decision from the United States District Court for the District of Arizona [United States Court of Appeals for the Ninth Circuit. 2001. *Arizona Cattle Growers' Association, Jeff Menges, v. United States Fish and Wildlife, Bureau of Land Management, and Southwest Center for Biological Diversity*. Filed December 17, 2001.]. This Court held, based on the legislative history, case law, prior agency representations, and the plain

language of the Endangered Species Act, that an Incidental Take Statement must be predicated on a finding of an incidental take. Further, the Fish and Wildlife Service acted in an arbitrary and capricious manner by issuing Incidental Take Statements imposing terms and conditions on land use permits, where there either was no evidence that the endangered species existed on the land or no evidence that a take would occur if the permit were issued.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (16 U.S.C. §§ 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989) makes it unlawful to "take" (kill, harm, harass, shoot, etc.) any migratory bird listed in Title 50 of the Code of Federal Regulations, Section 10.13, including their nests, eggs, or young. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, swallows, etc.).

State Endangered Species Act

In 1984, the state legislated the California Endangered Species Act (CESA) (Fish and Game Code §2050). The basic policy of CESA is to conserve and enhance endangered species and their habitats. State agencies will not approve private or public projects under their jurisdiction that would jeopardize threatened or endangered species if reasonable and prudent alternatives are available.

CESA requires that all state lead agencies (as defined under CEQA) conduct an endangered species consultation with CDFG if their actions could affect a state listed species. The state lead agency and/or project applicants must provide information to CDFG on the project and its likely impacts. CDFG must then prepare written findings on whether the proposed action would jeopardize a listed species or would result in the direct take of a listed species. Because CESA does not have a provision for "harm" (see discussion of FESA, above), CDFG considerations pursuant to CESA are limited to those actions that would result in the direct take of a listed species.

If CDFG determines that a proposed project could impact a State listed threatened or endangered species, CDFG will provide recommendations for "reasonable and prudent" project alternatives. The CEQA lead agency can only approve a project if these alternatives are implemented, unless it finds that the project's benefits clearly outweigh the costs, reasonable mitigation measures are adopted, there has been no "irreversible or irretrievable" commitment of resources made in the interim, and the resulting project would not result in the extinction of the species. In addition, if there would be threatened or endangered species impacts, the lead agency typically requires project applicants to demonstrate that they have acquired "incidental take" permits from CDFG and/or USFWS (if it is a Federal listed species) prior to allowing/permitting impacts to such species.

If proposed projects would result in impacts to a State listed species, an "incidental take" permit pursuant to §2081 of the Fish and Game Code would be necessary (versus a Federal incidental take permit for Federal listed species). CDFG will issue an incidental take permit only if:

1) the authorized take is incidental to an otherwise lawful activity;
2) the impacts of the authorized take are minimized and fully mitigated;
3) the measures required to minimize and fully mitigate the impacts of the authorized take:
   a) are roughly proportional in extent to the impact of the taking on the species;
   b) maintain the project applicant's objectives to the greatest extent possible; and,
   c) capable of successful implementation; and,
4) adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with, and the effectiveness of, the measures.

No §2081 permit may authorize the take of a species for which the Legislature has imposed strict prohibitions on all forms of "take." These species are listed in several statutes that identify "fully protected" species and "specified birds." *See* Fish and Game Code §§ 3505, 3511, 4700, 5050, 5515, and 5517. If a project is planned in an area where a "fully protected" species or a "specified bird" occurs, an applicant must design the project to avoid all take.

California Fish and Game Codes [§§ 3503, 3503.5, 3511, and 3513]

California Fish and Game Code §3503, 3503.5, 3511, and 3513 prohibit the "take, possession, or destruction of birds, their nests or eggs." Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered a "take." Such a take would also violate federal law protecting migratory birds (Migratory Bird Treaty Act).

All raptors (that is, hawks, eagles, owls) their nests, eggs, and young are protected under California Fish and Game Code (§3503.5). Additionally, "fully protected" birds, such as the white-tailed kite (*Elanus leucurus*) and golden eagle (*Aquila chrysaetos*), are protected under California Fish and Game Code (§3511). "Fully protected" birds may not be taken or possessed (that is, kept in captivity) at any time.

Under Title 14 of the California Code of Regulations (CCR 14, Division 1, Subdivision 1, Chapter 5, §41. Protected Amphibians), protected amphibians such as the California tiger salamander may only be taken under special permit from California Department of Fish and Game issued pursuant to Sections 650 and 670.7 of these regulations.

Section 404 of the Clean Water Act

Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the U.S. Army Corps of Engineers (Corps) regulates the discharge of dredged or fill material into "waters of the United States" (33 CFR Parts 328 through 330). This requires project applicants to obtain authorization from the Corps prior to discharging dredged or fill materials into any water of the United States. In the Federal Register "waters of the United States" are defined as, "...all interstate waters including interstate wetlands...intrastate lakes, rivers, streams (including intermittent streams), wetlands, [and] natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce..." (33 CFR Section 328.3).

Section 401 of the Clean Water Act

The SWRCB and RWQCB regulate activities in "waters of the State" (which includes wetlands) through Section 401 of the Clean Water Act. While the Corps administers permitting programs that authorize impacts to waters of the United States, including wetlands, and other waters, any Corps permit authorized for a proposed project would be invalid unless it is a NWP that has been certified for use in California by the SWRCB, or if the RWQCB has issued a project specific certification or waiver of water quality. Certification of NWPs requires a finding by the SWRCB that the activities permitted by the NWP will not violate water quality standards individually or cumulatively over the term of the issued NWP (the term is typically for five years). Certification must be consistent with the requirements of the federal Clean Water Act, the California Environmental Quality Act, the California Endangered Species Act, and the SWRCB's mandate to protect beneficial uses of waters of the State. Any denied (i.e., not certified) NWPs, and all Individual Corps permits, would require a project specific RWQCB certification or waiver of water quality.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act, Water Code § 13260, requires that "any person discharging waste, or proposing to discharge waste, within any region that could affect the waters of the State to file a report of discharge" with the RWQCB through an application for waste discharge (Water Code Section 13260(a)(1). The term "waters of the State" is defined as any surface water or groundwater, including saline waters, within the boundaries of the State (Water Code § 13050(e)). It should be noted that pursuant to the Porter-Cologne Water Quality Control Act, the RWQCB also regulates "isolated wetlands," or those wetlands considered to be outside of the Corps' jurisdiction pursuant to the SWANCC decision (see Corps Section above).

The RWQCB generally considers filling in waters of the State to constitute "pollution." Pollution is defined as an alteration of the quality of the waters of the state by waste that unreasonably affects its beneficial uses (Water Code §13050(1)). The RWQCB litmus test for determining if a project should be regulated pursuant to the Porter-Cologne Water Quality Control Act is if the action could result in any "threat" to water quality.

National Pollutant Discharge Elimination System (NPDES)

In 1972 the Clean Water Act was amended to provide that the discharge of pollutants to waters of the United States from any point source is unlawful unless the discharge is in compliance with an NPDES permit. The 1987 amendments to the CWA added Section 402(p) which establishes a framework for regulating municipal and industrial storm water discharges under the NPDES Program. On November 16, 1990, the U.S. Environmental Protection Agency (USEPA) published final regulations that establish storm water permit application requirements for specified categories of industries. The regulations provide that discharges of storm water to waters of the United States from construction projects that encompass five (5) or more acres of soil disturbance are effectively prohibited unless the discharge is in compliance with an NPDES Permit. Regulations (Phase II Rule) that became final on December 8, 1999 expand the existing

NPDES program to address storm water discharges from construction sites that disturb land equal to or greater than one (1) acre.

Section 1602 of California Fish and Game Code

Pursuant to Section 1602 of the California Fish and Game Code, California Department of Fish and Game (CDFG) regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream which CDFG typically considers to include its riparian vegetation. Any proposed activity in a natural stream channel that would substantially adversely affect an existing fish and/or wildlife resource, would require entering into a Streambed Alteration Agreement (SBAA) with CDFG prior to commencing with work in the stream. However, prior to authorizing such permits, CDFG typically reviews an analysis of the expected biological impacts, any proposed mitigation plans that would be implemented to offset biological impacts and engineering and erosion control plans.

PHYSICAL SETTING

The Project Site is located in northeast Merced in a primarily agricultural region. The site consists of frequently disked, vacant land that is dominated by non-native grasses and weeds. The site was formerly used for agricultural production. Fahrens Creek and an associated levee defines the northwest corner of the Project Site, the Tower Lateral Canal is adjacent to the southern boundary of the site, G Street forms the eastern boundary, and agricultural lands form the northern and western boundaries. To the south of the Tower Lateral Canal and north of Bellevue Road is a community vegetable garden. Rural housing lies to the east of G Street.

Fahrens Creek, which is located adjacent to the northwest corner of the Project Site contains highly disturbed and modified riparian habitat. A levee currently divides the Project Site from Fahrens Creek and the project includes a buffer that is approximately 20 feet wide along the levee. In the City of Merced's most current General Plan, Fahrens Creek has been identified as being an "important open space element (…. providing) important wildlife habitat (and being)…. an integral part of the City's drainage system."

The Project Site is dominated by a dense cover of recently germinated non-native grasses and forbs including ripgut (*Bromus diandrus*), red brome (*B. madritensis*), miners lettuce (*Claytonia perfiliata*) and Bermuda grass (*Cynodon dactylon*), Italian ryegrass (*Lolium multiflorum*), fiddleneck (*Amsinckia menziesii*), mustards (*Brassica nigra, Sinapis arvensis*), field chickweed (*Cerastium arvense*), and shepherd's purse (*Capsella bursa-pastoris*). Native plant species found in this field were sparsely distributed and included red maids (*Calandrinia ciliata*) and gumplant (*Grindelia camporum* ssp. *camporum*). Milk thistle (*Silybum marianum*) occurs in clusters throughout the site. Plant species observed along the Project Site perimeter, roadsides, and ditch margins were mainly ruderal plants associated with disturbed lands and include Russian thistle (*Salsola tragus*), milk thistle, yellow star thistle (*Centaurea solstitialis*), mustard, prickly lettuce (*Lactuca serriola*), soft chess (*Bromus hordeaceus*), geranium (*Geranium dissectum*), common groundsel (*Senecio vulgaris*), curly dock (*Rumex crispus*), common chickweed (*Stellaria media*), bindweed (*Convolvulus arvensis*) and bedstraw (*Galium aparine*). A few small sapling box elders (*Acer negundo* ssp. *californica*) and silver dollar gum trees (*Eucalyptus polyanthemos*) have become established along a ditch that runs along the east

margin of the site parallel to G Street ditch. A few native Ithuriel's spear (*Triteleia laxa*) and a wide variety of non-native grasses occur along the levee. Sparse riparian vegetation occurs along Farhens Creek, including sporadic occurrences of arroyo willow (*Salix lasiolepis*), sandbar willow (*Salix sessilifolia*), and cottonwood (*Populus fremontii*). Wetland-associated species observed along this creek channel include hard-stem tule (*Schoenoplectus acutus occidentalis*), water primrose (*Ludwigia peploides*), hoary nettle (*Urtica dioica* ssp. *holosericea*), Himalayan blackberry (*Rubus discolor*), California rose (*Rosa californica*), tall flatsedge (*Cyperus eragrostis*), sedge (*Carex* sp.), rushes (*Juncus balticus* and *J. effusus*), and curly dock.

In general fallow agricultural areas do not provide habitat for a wide variety of wildlife species. The intense cultivation and manipulation of the soil, including the application of pesticide, herbicide, and fertilizer, and the history of row crop irrigation, tends to limit the number of species that occupy or use such habitats. Nevertheless, fallow agricultural fields can provide habitat for a number of resident species, particularly small mammal populations, including California meadow vole (*Microtus californicus*), pocket gopher (*Thomomys bottae*), western harvest mice (*Reithrodontomys megalotis*), deer mice (*Peromyscus maniculatus*), and California ground squirrels (*Spermophilus beecheyi*). These rodents in turn serve as prey for various raptors including red-tailed hawk (*Buteo jamaicensis*), Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), and red-shouldered hawk (*Buteo lineatus*), all of which are known to or may frequent the Project Site. Avian species observed onsite (or foraging over the site) or near the project site included: red shouldered hawk, red-tailed hawk, American kestrel (*Falco sparverius*), killdeer (*Charadrius vociferus*), long-billed curlew (*Numenius americanus*), barn swallow (*Hirundo rustica*), western kingbird (*Tyrannus verticalis*), American crow (*Corvus brachyrhynchos*), and western meadowlark (*Sturnella neglecta*), savannah sparrow (*Passerculus sandwichensis*), white-crowned sparrow (*Zonotrichia leucophrys*), house finch (*Carpodacus mexicanus*), red-winged blackbird (*Agelaius phoeniceus*), song sparrow (*Melospiza melodia*), black phoebe (*Sayornis nigricans*), mallard (*Anas platyrhynchos*), great blue heron (*Ardea herodias*), common snipe (*Gallinago gallinago*), and mourning doves (*Zenaida macroura*).

An active red-tailed hawk nest occurs in one of the willows along Fahrens Creek approximately 300 feet southwest of the Project Site. An American beaver (*Castor canadensis*) dam was observed along Fahrens Creek, immediately southwest of the Project Site. This dam backs creek water up in Fahrens Creek on the project site vicinity. It is also likely that the levee along Fahrens Creek serves as a migration or movement corridor for local wildlife species, including coyote (*Canis latrans*) (large canid scat observed) and possibly red fox (*Vulpes vulpes*).

The site is relatively flat with no undulations in topography, but it does not appear to have been laser-leveled. Soils are primarily Wyman clay loam, but Yokohl clay loam and Bear Creek clay loam are also present (refer to Appendix C of this DEIR). Historically, vernal pools likely existed on the Project Site, but any existing vernal pools would have been removed by repeated disking and cultivation. Several occur on property adjacent to the site and an area with a high density of vernal pools exists within two miles of the site. Vernal pool critical habitat and critical habitat for vernal pool invertebrates occurs adjacent to the northwestern edge of the site, beyond Fahrens Creek and approximately 0.5 miles to the east of the site, beyond the rural housing. Vernal pools in the Central Valley are defined as "precipitation-filled seasonal wetlands inundated during periods when temperature is sufficient for plant growth, followed by a

brief waterlogged-terrestrial stage, and culminating in extreme desiccating soil conditions of extended duration. These factors have played a significant selective role in shaping the vernal pool flora and fauna" (Witham et al 1998). Special-status species such as Greene's tuctoria (*Tuctoria greenei*), legenere (*Legenere limosa*), vernal pool fairy shrimp (*Branchinecta lynchi*), California tiger salamander (*Ambystoma californiense*), and western spadefoot toads (*Spea hammondi*) inhabit vernal pools.

There are 21 special-status plant species which occur in the Merced region that could potentially occur on the Project Site (Table 3.4-1). These plants occur in a variety of habitats, including chaparral, valley and foothill grasslands, and cismontane woodlands. Although some of these habitats could have been present on the project site historically, these habitats have been eliminated by past and present anthropogenic (i.e., man-related) activities that include intensive and continuing agricultural disturbance of the project site over many years. Frequent and repeated disking and other agricultural operations (e.g., weed control) have eliminated potential habitat and reduced plant diversity. Accordingly, no suitable special-status plant habitat occurs on the project site and no special-status plant species was observed during the field surveys. Because the proposed project will not impact the Fahrens Creek levee, rather will preserve this levee in a 20-foot open space easement from the base of the levee, potential impacts to rare plants that could occur along this creek and its levee would be avoided. Consequently, special-status plant surveys are not warranted for this Project Site and implementation of the proposed project will not result in impacts to special-status plants.

There are 32 special-status wildlife species which occur in the Merced region that could potentially occur on the proposed Project Site (Table 3.4-1). Most of the special-status species known from the region can be summarily dismissed owing to the absence of habitats that could support these species on or near the project site. Two special-status wildlife species, the northern harrier (*Circus cyaneus*) and the white-tailed kite (*Elanus leucurus*), were observed on the Project Site during the field survey. The white-tailed kite forages over the site and the northern harrier forages and may nest on the site (the northern harrier nests on the ground in open fields). A number of other special-status wildlife species are likely to occur on the site. However, some of the species that are not expected to occur on the project site are discussed below due to the locally sensitive status of these species.

Vernal pool fairy shrimp

Vernal pool fairy shrimp (*Branchinecta lynchi*) was designated as threatened in its entire range on September 19, 1994 (Federal Register 59:48136-48153). Critical habitat for this species was originally designated on August 6, 2003 (Federal Register 68: 46683-46867), and the designation was revised on August 11, 2005. Species by unit designations were published on February 10, 2006 (Federal Register 71:7117). The project area is located outside critical habitat (Units 22 and 23) designated for this species in Merced County.

The vernal pool fairy shrimp is widespread but not abundant within its known range. Known populations extend from Shasta County through most of the length of the Central Valley to Tulare County. Along the central coast, they range from northern Solano County to Pinnacles National Monument in San Benito County. Four additional, disjunct populations exist in

Southern California. The ephemeral wetlands that support this network of populations are remnants of what was formerly a pristine vernal pool ecosystem, which has been converted to primarily agricultural and urban uses. The closest record for vernal pool fairy shrimp is located 0.6 mile east of the project site.

There are no vernal pools or even seasonal wetland habitats that could support this species. The project site has been under cultivation since the 1950's. This long history of land manipulation, disking and irrigation on the project site has eliminated any potential habitat for fairy shrimp species on the project site. No impacts would occur to this species from implementation of the proposed project.

Conservancy fairy shrimp

Conservancy fairy shrimp (*Branchinecta conservatio*) was designated as an endangered species on September 19, 1994 (Federal Register 59:48136). Critical habitat for this species was originally designated on August 6, 2003, and the designation was revised August 11, 2005. Species by unit designations were published on February 10, 2006 (Federal Register 71:7117). The project area is located outside critical habitat (Units 6 and 7) designated for this species in Merced County.

This species is known from six disjunct populations: Vina Plains in Tehama County; south of Chico in Tehama County; Jepson Prairie in Solano County; Sacramento National Wildlife Refuge in Glenn County; near Haystack Mountain northeast of Merced in Merced County; and the Lockewood Valley of northern Ventura County. This species inhabits large pools (such as the 36 hectare Olcott Lake at Jepson Prairie). The closest record for Conservancy fairy shrimp is located 6.7 miles east of the project site.

There are no vernal pools or seasonal wetland habitats on the Project Site that could support this species. The Project Site has been under cultivation since the 1950's, and this long history of land manipulation, disking and irrigation on the project site has eliminated any potential habitat from the project site. Implementation of the proposed project would not impact the Conservancy fairy shrimp.

Vernal pool tadpole shrimp

Vernal pool tadpole shrimp (*Lepidurus packardi*) was designated as threatened in its entire range on September 19, 1994 (Federal Register 59:48136-48153). Critical habitat for this species was originally designated on August 6, 2003 (Federal Register 68: 46683-46867), and the designation was revised August 11, 2005. Species by unit designations were published on February 10, 2006 (Federal Register 71:7117). The project area is located outside critical habitat (Unit 16) designated for this species in Merced County.

The vernal pool tadpole shrimp is known from 19 populations in the Central Valley, ranging from east of Redding in Shasta County south to the San Luis National Wildlife Refuge in Merced County, from a small population near the Napa County airport, and from a single vernal pool complex on the San Francisco Bay National Wildlife Refuge in the City of Fremont, Alameda County. The ephemeral wetlands that support this network of populations are remnants of what

was formerly a pristine vernal pool ecosystem, but which has been converted to mainly agricultural and urban uses. This highly disturbed remnant habitat is imperiled by a variety of human-caused activities, primarily urban development, water supply and flood control projects, and agriculture. Rapid urbanization of the Central Valley of California currently poses the most severe threat to the continued existence of the listed vernal pool crustaceans. The closest record for vernal pool tadpole shrimp is located 4.7 miles east of the project site.

There are no vernal pools or seasonal wetland habitats on the project site that could support this species. The project site has been under cultivation since the 1950's, and this long history of land manipulation, discing and irrigation on the project site has eliminated any potential habitat from the project site. Implementation of the proposed project would not impact vernal pool tadpole shrimp.

California tiger salamander

On July 27, 2004 the USFWS determined that they would list the Central California Distinct Population Segment (DPS) of California tiger salamander (CTS) as threatened and would downlist the status of the Sonoma and Santa Barbara DPSs from endangered to threatened. The Santa Barbara DPS was originally listed as endangered by the USFWS on September 21, 2000 while the Sonoma County DPS was originally emergency listed as endangered by the USFWS on July 22, 2002. The listing changes became effective on September 3, 2004. On August 19, 2005 U.S. District Judge William Alsup vacated the Service's downlisting of the Sonoma and Santa Barbara populations from endangered to threatened. Thus, the Sonoma and Santa Barbara populations are once again listed as endangered. The USFWS Final Rule on designated critical habitat for the California tiger salamander, Central Population, was issued on August 23, 2005 (Federal Register 70:49379-49458). This rule became effective September 22, 2005. The project area is located outside of *Critical Habitat Unit 9* designated in Merced County (Map 12, Federal Register Notice 70:41183-41186 August 2005). In addition to being federally listed, the CTS is also a California "species of special concern." The CTS is also protected under Title 14 of the California Code of Regulations (CCR). Under Title 14, CCR 41 (1996), CTS is a protected amphibian that may only be taken or possessed under a special permit issued by the California Department of Fish and Game (CDFG) pursuant to sections 650 and 670.7 of these regulations, or Section 2081 of the Fish and Game Code.

CTS occur in grasslands and open oak woodlands that provide suitable aestivation and/or breeding habitats. CTS spend the majority of their lives underground. They typically only emerge from their subterranean refugia for a few nights each year during the rainy season to migrate to breeding ponds. CTS may migrate several miles from their underground refugia to breeding ponds. As such, unobstructed migration corridors are important component of CTS habitat. During the spring, summer, and fall months, most known populations of the CTS predominately use California ground squirrel (*Spermophilus beechyi*) burrows as aestivation habitat. Other secondary subterranean refugia, or primary refugia where California ground squirrels are absent, include or likely include pocket gopher burrows, deep fissures in desiccated clay soils, and debris piles (e.g. downed wood, rock piles). Stock ponds, seasonal wetlands, and deep vernal pools typically provide most of the breeding habitat used by CTS. Occasionally CTS are found breeding in slow moving, streams or ditches.

Seasonal wetlands that are used for CTS breeding typically must hold water into the month of May to allow enough time for CTS larvae to fully metamorphose. In dry years, seasonal wetlands may dry too early to allow enough time for CTS larvae to successfully metamorphose. Under such circumstances, desiccated CTS larvae can be found in dried pools in the late spring. In addition, as pools dry down to very small areas of inundation, CTS larvae become concentrated and are very susceptible to predation.

The closest record for CTS is located 1.9 miles east of the project area, and there are numerous additional records for this species within 10 miles of the project area. The majority of the records of CTS were found in stockponds, vernal pools, seasonal wetlands, artificially created ponds, and slough channels all in non-native annual grassland habitats. All records occurred between 1994 and 2001.

The project site is an intensively farmed agricultural field and does not provide suitable CTS breeding or upland estivation/over summering habitat. The project site has been under cultivation since the 1950's, and this long history of land manipulation, disking and row crop irrigation on the project site has eliminated any potential breeding habitat from the project site. The project site does not provide upland estivation habitat for CTS since this animal cannot survive in a flood irrigated or row crop environments. Thus, it is unlikely that the field could maintain a viable population of CTS. The berm (levee) along Fahrens Creek is isolated from CTS movements by the agricultural fields and high flow environment of Fahrens Creek and thus would be unlikely to provide upland estivation/over summering habitat. Regardless, the proposed project will not impact this levee and will preserve a 20-foot easement along the base of the levee. Fahrens Creek on the north side of the project site had predatory fish and supports crayfish which are CTS predators. In addition, in the winter months high flows in this creek would prevent CTS from attaching eggs to substrates in this creek. CTS typically are not found using high flow environments for reproduction. Consequently, impacts to potentially occupied CTS habitat are not expected to occur from implementation of the proposed project and consultation with the United States Fish and Wildlife Service (USFWS) regarding potential impacts to CTS (a federally threatened species) should not be required for the project pursuant to the Federal Endangered Species act (FESA).

Pacific pond turtle

The Pacific pond turtle is a state "species of special concern." The Pacific pond turtle is a habitat generalist, inhabiting a wide range of fresh and brackish, permanent and intermittent water bodies from sea level to about 4,500 feet above sea level (USFWS 1992). Typically, this species is found in ponds, marshes, ditches, streams, and rivers that have rocky or muddy bottoms. This turtle is most often found in aquatic environments with plant communities dominated by watercress, cattail, and other aquatic vegetation. It is a truly aquatic turtle that usually only leaves the aquatic site to reproduce and to overwinter. Recent field work has demonstrated that Pacific pond turtles may overwinter on land or in water, or may remain active in water during the winter season; this pattern may vary considerably with latitude, water temperature, and habitat type and remains poorly understood.

The closest record for Pacific pond turtle is located 4.7 miles west of the project site in Canal Creek, which is surrounded by agricultural habitats. Conceivably, this turtle could occur in Fahrens Creek, and may use the levee along the northwestern corner of the project site as upland basking and possibly nesting habitat. However, the long history of land manipulation, discing and irrigation on the field portion of the project site has eliminated any potential use of the majority of the remainder of the project site by this species. Because the proposed project will not impact the Fahrens Creek levee and will preserve a 20-foot easement along the base of the levee, impacts to potentially occupied Pacific pond turtle habitat will be avoided. Implementation of the proposed project will not significantly impact the Pacific pond turtle.

Giant garter snake

The giant garter snake was federally listed as threatened in its entire range on October 20, 1993 (Federal Register 58: 54053-54066)(USFWS 1993). Critical habitat has not been designated for this species. Giant garter snake is also listed as threatened under the California Endangered Species Act in 1971. Because of the threatened status of this species, all proposed projects that could affect giant garter snake must address potential impacts to this species.

The giant garter snake is endemic to the Central Valley floor and inhabits sloughs, ponds, small lakes, low gradient streams, and other waterways such as drainage canals and irrigation ditches, and adjacent uplands. Because of the direct loss of natural habitat, the giant garter snake relies heavily on rice fields in the Sacramento Valley, but also uses managed marsh areas in Federal National Wildlife Refuges and State Wildlife Areas. There have been only a few recent sightings of giant garter snakes in the San Joaquin Valley. Agricultural practices such as tilling, grading, harvesting and other equipment operated activities may result in death of giant garter snakes, and flood control and canal maintenance activities may also have a detrimental affect on giant garter snakes and prevent recolonization of these canals. Irrigated pastures provide the summer water that giant garter snakes require; however, overgrazing may degrade the habitat and eliminate cover. Livestock trample aquatic and riparian vegetation and burrows these snake need for cover, thereby altering the habitat. Livestock may even trample snakes. The resulting water pollution from a grazed landscape may reduce or eliminate prey populations. Consequently, there has been a dramatic decline of this species in areas with intense agricultural activities or grazing pressure.

The closest CNDDB record for the giant garter snake to the project site was for a female giant garter snake that was collected in 1908. While the exact location of the collection site is unknown, it appears to be along Bear Creek located approximately 3.6 miles south of the project site. Since 1908 the project area has undergone drastic transformations to urban and agricultural conditions that were not present in 1908. Thus, this record has little bearing on whether giant garter snakes could be present today. The remaining CNDDB records (Occurrence Numbers 136, 25, 42 and 23) for giant garter snakes in the region of the project site were recorded between 1976 and 1986 and are located 15 to 20 miles from the project site. These records are also old and are not in tributaries connected to the project site. Thus, these records are also not an indication that giant garter snakes could be in the project vicinity. The absence of records for this snake anywhere near the project site over the past 100 years indicates that this species is unlikely to still exist in this part of Merced County.

The long history of disking of the field portion of the site essentially precludes the project site from providing potential upland refugia habitat for this species. It is very unlikely that giant garter snakes would occur in Fahrens Creek owing to the extent of urbanization in this creek near the project site, and the extent of agricultural conversion of habitats into row crops which are not typically used or associated with giant garter snake habitat. The proposed project will preserve the levee and a 20 foot buffer outboard of the levee that will ensure that there are not impacts to Fahrens Creek. The proposed project will not result in impacts to potentially occupied giant garter snake habitat and implementation of the proposed project will not significantly impact this species.

White-tailed kite

The white-tailed kite (*Elanus caeruleus*) is fully protected under California Fish and Game Code § 3511. This raptor is also protected under the Migratory Bird Treaty Act (50 CFR 10.13), and its nest, eggs, and young are protected pursuant to California Fish and Game Codes §§3503 and 3503.5. The white-tailed kite is typically found hunting in grassland, marsh, or cultivated fields where there are dense-topped trees or shrubs for nesting and perching. They nest in a wide variety of trees of moderate height and sometimes in tall bushes, such as coyote bush (*Baccharis pilularis*). Native trees used for nesting are live and deciduous oaks (*Quercus* spp.), willows (*Salix* spp.), cottonwoods (*Populus* spp.), sycamores (*Platanus* spp.), maples (*Acer* spp.), toyon (*Heteromeles arbutifolia*), and Monterey cypress (*Cupressus macrocarpa*). Kites often reside near water sources, where prey is more abundant. The particular characteristics of the nesting site do not appear to be as important as its proximity to a suitable food source (Shuford 1993). Kites primarily hunt small mammals, with California meadow voles (*Microtus californicus*) accounting from between 50-100 percent of their diet.

White-tailed kites were observed on several occasions flying over and in the vicinity of the project site. The sparse riparian vegetation growing along Fahrens Creek provides suitable nesting habitat for this species.

Northern harrier

The northern harrier (*Circus cyaneus*) is a California species of special concern. This raptor is also protected under California Fish and Game Code §3503.5 that protects nesting raptors and their eggs/young. The northern harrier is also protected from direct take under the Migratory Bird Treaty Act (50 CFR 10.13). Northern harriers build grass-lined nests on the ground within dense, low-lying vegetation in a variety of habitats, though they are typically found nesting in grassland or marsh habitats. They usually nest on level to near level ground. This species is particularly vulnerable to ground predators such as coyotes, red fox and various snake species. Ground nesting birds in general are also subject to disturbance by agricultural practices.

Northern harriers have been observed foraging over the project site and may nest in or around the open grasslands and upland irrigated pasturelands that provides suitable nesting habitat for this species. The open field of the project site provides foraging habitat for this species, and the levee/berm along Fahrens Creek provides nesting habitat for northern harriers. Provided the project site is continually disked and does not remain fallow and undisturbed for a prolonged period of time, the project site will not support nesting habitat for northern harriers.

Swainson's hawk

The Swainson's hawk is a state listed threatened species. Although it has no special federal status, it is protected from direct take under the Federal Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711). Swainson's hawks, their nests, eggs, and young are also protected under California Fish and Game Code (§3503, §3503.5, §3513, and §3800).

Swainson's hawk inhabits open to semi-open areas at low to middle elevations in valleys, dry meadows, foothills, and level uplands (Kochert 1986). It nests almost exclusively in trees and will nest in almost any tree species that is at least 10 feet tall (Schmutz et. al. 1984). Nests are constructed in isolated trees that are dead or alive along drainages and in wetlands, or in windbreaks in fields and around farmsteads (Palmer 1988). Swainson's hawks occasionally nest in shrubs, on telephone poles, and on the ground. In the Central Valley of California, the majority of Swainson's hawk nests and territories are associated with riparian systems.

Foraging habitats include alfalfa fields, fallow fields, beet, tomato, and other low-growing row or field crops, dry-land and irrigated pasture, and rice land when not flooded. Swainson's hawks generally forage in open habitats with short vegetation containing small mammals, reptiles, birds, and insects. Its primary prey in the Central Valley is California meadow vole (*Microtus californicus*). Agricultural areas are often preferred over more natural grassland habitats due to larger prey populations. During the nesting season, Swainson's hawks usually forage within two miles of the nest. Swainson's hawks are regular summer visitors and breeders throughout the western states. In the fall months, most Swainson's hawks migrate to Argentina before returning to the United States to breed in the late-spring (typically April). There are also two relatively small populations of Swainson's hawks that remain resident in California year-round in the Davis area and a small population in the Sacramento River Delta.

The closest known CNDDB record for nesting Swainson's hawk is 8.2 miles north of the project site in a riparian corridor along the Merced River. Although it is unlikely that this species would nest in the sparsely distributed riparian trees along Fahrens Creek, the proposed project will not result in the removal of any riparian trees along this creek. Swainson's hawks were observed foraging over open fields east of the project site during the biological surveys but no occupied nests were found in the vicinity of the project site. The proposed project may significantly impact this species.

Red-tailed hawk

The red-tailed hawk (*Buteo jamaicensis*) is protected under the Migratory Bird Treaty Act (50 CFR 10.13) and under California Fish and Game Code §3503.5, 3800, and 3513 which protect nesting raptors and their eggs/young. This raptor species has an extremely wide tolerance for habitat variation, which can be attributed to its very broad spectrum of prey. Some clear habitat preferences do exist, however, and have been analyzed by a variety of studies. Habitat preferences in the winter for both sexes are oriented toward upland pasture, grassland, and hardwood habitats, with females also using lowland hardwoods and males using marsh–shrub communities. In the spring, females continue to use mainly upland and lowland hardwoods, probably as a reflection of their orientation toward a nest site.

Red-tailed hawks were observed nesting in a willow along Fahrens Creek approximately 300 feet southwest of the project site and foraging habitat exists on the project site. The proposed project may significantly impact his species.

Western burrowing owl

The Western burrowing owl is a federal species of concern and a California species of special concern. Its nest, eggs, and young are also protected under California Fish and Game Code (§3503, §3503.5, and §3800). The burrowing owl is also protected from direct take under the Migratory Bird Treaty Act (50 CFR 10.13).

Burrowing owls occur in annual and perennial grasslands, characterized by low-growing vegetation. Typically, the burrowing owl utilizes rodent burrows, usually ground squirrel burrows, for nesting and cover. They may also on occasion dig their own burrows, or use man-made objects such as concrete culverts or riprap piles for cover. They exhibit high site fidelity, reusing burrows year after year. Burrowing owls typically are not observed in grasslands with tall vegetation or wooded areas because the vegetation obscures their ability to detect avian and terrestrial predators.

The closest known CNDDB record for western burrowing owl is 1.7 miles east of the project site. No burrowing owls were observed on or near the site. Because this owl is known from the area and because suitable habitat, including ground squirrel burrows exist on and in the immediate vicinity of the Project Site, this species could move onto the project site prior to construction. The project may result in significant impacts to this species.

San Joaquin kit fox

The San Joaquin kit fox is a federally listed endangered species and a California listed threatened species. This species' distribution is primarily limited to the San Joaquin Valley and adjacent regions. Because of the endangered/threatened status of this fox species, all proposed projects within the current and/or historic range of the kit fox must address potential impacts to this species.

The San Joaquin kit fox is endemic to the San Joaquin Valley of California. It is usually found in open grassland and shrubland communities, but has also been observed in orchards that border grassland or shrub plant communities andd in urban settings. Kit fox are carnivorous, usually feeding on small rodents such as San Joaquin pocket mice (*Perognathus inornatus*), deer mice, western harvest mice, kangaroo rats (*Dipodomys* spp.) and larger rodents such as California ground squirrel (*Spermophilus beechyi*). Kit fox also prey upon lagomorphs such as black-tailed hare and desert cottontail (*Sylvilagus audubonii*). It relies on dens for breeding, and to provide escape cover from potential predators. Populations of kit fox are thought to be related to the availability of denning sites, particularly natal denning sites, which are often moved several times throughout the season.

The closest known CNDDB record for San Joaquin kit fox is located 5.2 miles east of the project site in grazed grassland habitat. The long history of continual disking of the agricultural field, and the planting of row crops has significantly reduced the habitat value of the project site for San Joaquin kit fox; however, the levee along Fahrens Creek provides a potential migration corridor between habitats in the area. Since the project proposes to preserve a natural corridor

along Fahrens Creek, impacts to potential San Joaquin kit fox migration habitat would be avoided. A protocol-level survey for San Joaquin kit foxes which encompassed the project site was conducted in 2006 by Monk and Associates. No evidence of kit foxes were found on the site during biological surveys of the site or during the 2006 protocol-level survey. The proposed project will not result in significant impacts to the SJKF or its habitat.

Impact #3.4-1a - Development Of The Project Would Have A Potentially Significant Adverse Impact On Nesting Raptors: Suitable nesting habitat for the white-tailed kite, red-tailed hawk, Swainson's hawk, western burrowing owl, and northern harrier occurs on or adjacent to the project site. Only the red-tailed hawk is known to nest in the vicinity of the project site. Since the Swainson's hawk is a state listed species which typically requires greater mitigation then non-listed raptors, the Swainson's hawk is discussed in a separate mitigation measure below. Similarly, since the western burrowing owl is a California species of special concern and CDFG has prepared formal mitigation guidelines for impacts to this owl species, mitigation for the western burrowing owl is also discussed in a separate mitigation measure below.

The white-tailed kite is fully protected under the California Fish and Game Code (3511). The northern harrier is a state species of special concern. The white-tailed kite, the red-tailed hawk, and the northern harrier are also protected under the Migratory Bird Treaty Act (50 CFR 10.13) and their nest, eggs, and young are protected under California Fish and Game Code Sections 3503, 3503.5. Any project-related impacts to these species or their habitat would be considered a significant adverse impact. Potential impacts to these species from the proposed project could include loss of nesting habitat, disturbance to nesting birds, and possibly death of adults and/or young.

Red-tailed hawks have been identified nesting in a willow along Fahrens Creek approximately 300 feet southwest of the project site. No other nesting raptors were identified on or adjacent to the proposed project site during M&A's survey or during the nesting raptor surveys conducted by Mr. Silva in April and May of 2007. However, all of these species are known to occur locally and could move onto the project site or within an "area of influence" adjacent to the project site. The area of influence varies from species to species known from the region, but in all cases would not be greater than 1,000 feet of the project site.. If these raptors were nesting near the proposed project site, construction-related disturbance could result in nest abandonment and/or other impacts to nesting raptors which would be a violation of the Migratory Bird Treaty Act (§50 CFR 10.13) and the California Fish and Game Codes §§ 3503, 3503.5. As such, impacts to these raptors are regarded as potentially significant. These impacts could be mitigated to a level considered less than significant. Impacts to unoccupied nesting habitats for these species would not be considered significant as there are other local and regional nesting habitats available for use by these species that could be used in subsequent nesting seasons. Consequently no mitigation is warranted for impacts to unoccupied nesting habitats. Finally, if these raptor species nest near the project site once the site has been developed, these raptors would be considered habituated to any existing disturbance from the school site, and consequently, no mitigation would be warranted for these nesting raptors near or on the project site.

Mitigation Measure #3.4-1a: If construction would commence between March 1 and September 1, surveys should be conducted 30 days prior to construction of the project. The raptor nesting surveys shall include examination of all trees and shrubs within the area of influence of the proposed project. For the purposes of this document, the "area of influence" is within 1,000 feet of the project site.

If nesting raptors are identified during the surveys on the project site, the dripline of the nest tree or shrub must be fenced with orange construction fencing and a 300-foot radius buffer around the nest tree or shrub must be fenced with bright orange construction fencing. This 300-foot buffer may be reduced in size if a qualified raptor biologist determines through monitoring that the nesting raptors are acclimated to people and disturbance, and otherwise would not be adversely affected by construction activities. At a minimum, however, the non-disturbance buffer shall be a radius of 100 feet around the nest tree or shrub. If the nest site is on an adjacent property, the portion of the buffer that occurs on the project site shall be fenced with orange construction fencing. When construction buffers are reduced in size, the raptor biologist shall monitor distress levels of the nesting birds while the birds nest and construction persists. If at any time the nesting raptors show levels of distress that could cause nest failure or abandonment, the raptor biologist shall have the right to re-implement the full 300-foot buffer. Instances when the buffer could be reduced in size would be if the raptors were well acclimated to disturbance and/or if there were physical barriers between the nest site and the construction project that would reduce disturbance to the nesting raptors.

No construction or earth-moving activity should occur within the non-disturbance buffer until it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by July 1st. Regardless, the resource agencies consider September 1st the end of the nesting period unless otherwise determined by a qualified raptor biologist. Once the raptors have completed the nesting cycle, that is the young have reached independence of the nest, no further regard for the nest site shall be required. No other compensatory mitigation is required.

When implemented these mitigation measures would reduce impacts to nesting raptors to a level considered *less than significant*.

Impact #3.4-1b - Development Of The Project Would Have A Potentially Significant Adverse Effect On The Swainson's Hawk

The Swainson's hawk is a state listed threatened species. While the Swainson's hawk has no special federal status it is protected from direct take under the Federal Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711). Swainson's hawks, their nests, eggs, and young are also protected under California Fish and Game Code (§3503, §3503.5, §3513, and §3800).

The closest known record for nesting Swainson's hawk is 8.2 miles north of the project site (CNDDB Occurrence No. 1106). No Swainson's hawk nests were discovered on the site or offsite in the vicinity of the project site during M&A's project site survey or the raptor surveys conducted by Mr. Silva in April and May of 2007. However, this species is known to occur locally and could nest in a tree on or near the project site in the future. If Swainson's hawks are found to be nesting on or near the proposed project site, implementation of the proposed project site would be viewed by CDFG as an impact to Swainson's hawk foraging habitat. Loss or

alteration of foraging habitat or nest site disturbance which results in: (1) nest abandonment; (2) loss of young; (3) reduced health and vigor of eggs and/or nestlings (resulting in reduced survival rates), may ultimately result in the take (killing) of nestling or fledgling Swainson's hawks incidental to otherwise lawful activities. The taking of Swainson's hawks in this manner can be viewed by the CDFG as a violation of the Section 2080 of the Fish and Game Code. This interpretation of take has been judicially affirmed by the landmark appellate court decision pertaining to CESA (CDFG v. ACID, 8 CA App.4, 41554) (CDFG 1994).

Any disturbance around a Swainson's hawk nest that is not characteristic of the normal activities around the nest site that caused disruption of the nesting attempt would likely be regarded by CDFG as a violation of CESA. Typically, CDFG requires that any impact to a Swainson's hawk nest be permitted through a Fish and Game Section 2081 management authorization. If an active nest is found on or adjacent to the project site within the area of influence of the project site (which is generally considered to be within 1,000 feet of the project site) "to avoid potential violation of Fish and Game Code 2080 (i.e., killing of listed species), project-related disturbance at active Swainson's hawk nesting sites should be reduced or eliminated during critical phases of the nesting cycle (March 1- September 15 annually)" (CDFG 1994). If disturbance would occur, a Fish and Game Section 2081 management authorization would be required. Impacts to nesting Swainson's hawks would be considered a significant impact. However, if Swainson's hawks nest on or near the project site once the site has been developed, these Swainson's hawks would be considered habituated to any existing disturbance from the school site, and consequently, no mitigation would be warranted for nesting Swainson's hawks near or on the project site.

While M&A did observe Swainson's hawks foraging over non-native annual grasslands east of the project site during our site assessment, the loss of 58 acres of agricultural habitat constituting the project site would be insignificant in a regional context, particularly in light of the fact that Swainson's hawks are not known to nest within 5 miles of the project site. Therefore, impacts to potential Swainson's hawk foraging habitat are considered less than significant.

Mitigation Measure #3.4-1b - Mitigation for Swainson's Hawk: CDFG has prepared guidelines for conducting surveys for Swainson's hawk entitled: Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (CDFG 2000). These survey recommendations were developed by the Swainson's Hawk Technical Advisory Committee (TAC) to maximize the potential for locating nesting Swainson's hawks, and thus reduce the potential for nest failures as a result of project activities and/or disturbances. To meet the CDFG's recommendations for mitigation and protection of Swainson's hawks, surveys should be conducted for a half-mile radius around all project activities and should be completed for at least the two survey periods immediately prior to a project's initiation. The guidelines provide specific recommendations regarding the number of surveys based on the project is scheduled to begin and the time of year the surveys are conducted.

If Swainson's hawks are found to be nesting on or in the immediate vicinity of the project site, consultation with CDFG and mitigation compensation would be required. At that time, the necessity of acquiring a Fish and Game Section 2081 management authorization should be determined. CDFG has prepared a *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California* (CDFG 1994) (hereinafter the Mitigation Guidelines) that prescribes avoidance and mitigation guidelines for impacts to Swainson's hawk nesting and

foraging habitats. The Mitigation Guidelines require applicants to replace any impacted Swainson's hawk nesting and/or foraging habitat with other suitable Swainson's hawk nesting/foraging habitat. Because there is extensive foraging habitats for Swainson's hawks north and northeast of the project site in a local perspective, Merced Unified School District has determined that impacting potential agricultural foraging habitat from implementation of the project would not constitute a significant adverse impact pursuant to the CEQA. However, if Swainson's hawks nest on or within the area of influence of the project site (within 1,000 feet of the project site), impacts to nesting Swainson's hawks would be regarded as significant and adverse, and mitigation compensation would be required. Mitigation required would include a 1:1 impact to replacement ratio (58 acres of mitigation land) for all project disturbed habitat.

The CDFG Mitigation Guidelines states that acceptable mitigation to offset impacts to Swainson's hawk foraging habitat can be met by Fee Title acquisition of Swainson's hawk habitat, or by acquisition of the right to record a conservation easement over lands that can be managed for this hawk species (hereinafter Habitat Management Lands). Any land acquired through Fee Title would have to be donated to a suitable conservation organization for management. In addition to providing Habitat Management Lands, the applicant would be assessed a management fee for the long-term management of the Habitat Management Lands by a suitable conservation organization.

Implementation of the above mitigation measures would reduce impacts to Swainson's hawk to a level considered *less than significant.*

Impact #3.4-1c - Development Of The Project Would Have A Potentially Significant Adverse Effect On The Western Burrowing Owl: The western burrowing owl is a state species of special concern. This owl is also protected under California Fish and Game Code §3503, §3503.5, §3513, and §3800, and the Federal Migratory Bird Treaty Act. The closest known record for western burrowing owl is 1.7 miles east of the project site (CNDDB Occurrence No. 347). During the raptor surveys conducted by Mr. Silva in April and May of 2007, no burrowing owls were observed on the site; however, Monk & Associates biologists have observed western burrowing owl in several locations along Bellevue, east of State Route 59. Since this owl and ground squirrels are known from the area, this species could move onto the project area in the future.

If western burrowing owl were found nesting near the proposed project site, construction-related disturbance could result in nest abandonment and/or other impacts to nesting western burrowing owl which would be a violation of the Migratory Bird Treaty Act (§50 CFR 10.13) and the California Fish and Game Codes §§ 3503, 3503.5. These impacts would be considered a significant impact. However, if western burrowing owls nest on the levee along Fahrens Creek once the site has been developed, these western burrowing owls would be considered habituated to any existing disturbance from the school site, and consequently, no mitigation or other actions would be warranted for nesting western burrowing owls near or on the project site.

Mitigation Measure #3.4-1c - Mitigation for Western Burrowing Owl:

Mitigation Measure A. A nesting survey shall be conducted for ground nesting raptors, such as western burrowing owl and northern harrier. The survey should be conducted in accordance with the survey requirements detailed in the CDFG's October 17, 1995 *Staff Report on Burrowing Owl Mitigation.* Surveys shall be conducted in both the breeding season (April 15-July 15) and non-breeding season (December-January) to assess use of the project site by this species. If burrowing owls are present on the project site during the breeding season (peak of the breeding season is April 15 through July 15), and appear to be engaged in nesting behavior, a fenced 75 meter (276-foot) buffer would be required between the nest site(s) (i.e., the active burrow(s)) and any earth-moving activity or other disturbance on the project site. This 276-foot buffer could be removed once it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest). Typically, the young fledge by August 31. This date may be earlier than August 31, or later, and would have to be determined by a qualified raptor biologist. If northern harriers are identified on the project site, mitigation measures detailed above for nesting raptors (Mitigation Measure BIO-1) should be implemented.

Additionally, if burrowing owls are identified nesting onsite or within the area of influence of the project site (within 1,000 feet of the project site), an upland mitigation area for burrowing owls shall be established either on or offsite. The mitigation site must be determined to be suitable by a qualified biologist. The size of the required mitigation site will be based on the number of burrowing owls observed on the project site with a minimum of 6.5 acres preserved per pair of owls or single owl observed using the site. The number of owls for which mitigation is required shall be based on the combined results of the protocol-level survey and the preconstruction surveys (i.e., if two pairs of owls are observed on the project site during the protocol-level survey, the mitigation requirement shall be 2 x 6.5 = 13 acres provided that no more than two pairs of owls are observed during the preconstruction survey; if three pairs of owls are observed during the preconstruction survey, then the mitigation requirement shall be 3 x 6.5 = 19.5 acres). A detailed mitigation and monitoring plan shall be developed for the burrowing owl mitigation area. This plan must be prepared in coordination with CDFG, and approved by this agency.

Mitigation Measure B. Preconstruction surveys of the project site shall be conducted no more than 30 days prior to ground disturbing activities. If more than 30 days lapse between the time of the preconstruction survey and the start of ground-disturbing activities, another preconstruction survey must be completed. This process should be repeated until the habitat is converted to non-habitat (e.g., graded and developed).

Mitigation Measure C. If burrowing owls must be passively relocated from the project site, as approved by CDFG, passive relocation shall not commence until October 1st and must be completed by February 1st. After passive relocation, the project site and vicinity will be monitored by a qualified biologist daily for one week and once per week for an additional two weeks to document where the relocated owls move and to ensure that the owls are not reoccupying the project site. A report detailing the results of the relocation and subsequent monitoring will be submitted to CDFG within two months of the relocation.

Mitigation Measure D. If an upland mitigation site is designated for burrowing owls, it shall be approved as a suitable burrowing owl mitigation property by CDFG. The preserved area shall be

preserved in perpetuity as wildlife habitat via recordation of a conservation easement that designates the California Department of Fish and Game (CDFG), or any other qualified conservation organization as the Grantee of the easement.

Mitigation Measure E: If a conservation easement is established over burrowing owl habitat, an endowment to cover the management of the mitigation area and implementation of the mitigation and monitoring plan shall be provided by the project applicant to the Grantee of the Conservation Easement within six months of breaking ground on the project site.

Implementation of the mitigation measures above would reduce impacts to western burrowing owl to a level considered ***less than significant***.

Impact #3.4-1d - Development Of The Project Would Have A Potentially Significant Adverse Effect On Common And Special-Status Nesting Birds: The trees and shrubs along Fahrens Creek provide potential nesting habitat for common bird species and possibly special-status species. Birds protected pursuant to the Migratory Bird Treat Act and California Department of Fish and Game Code §3503 and §3800 could nest on the project site and may be disturbed to an extent that eggs and/or young would be lost. Impacts to protected bird species during the nesting season would be regarded as a significant adverse impact. Such an impact could be mitigated to a level considered less than significant.

Mitigation Measure #3.4-1d - Mitigation for Common and Special-Status Nesting Birds: In order to avoid impacts to common and special-status nesting birds protected pursuant to the Migratory Bird Treat Act and California Department of Fish and Game Codes §3503, §3503.5, and §3800, a nesting survey should be conducted prior to commencing with construction work if construction work would commence between March 15th and August 31st. If special-status birds are identified nesting within the area of influence, a 100-foot non-disturbance radius around the nest must be fenced (this fencing requirement shall not replace or be constructed in lieu of fencing discussed above for impacts to nesting raptors). No construction or earth-moving activity shall occur within this 100-foot staked buffer until it is determined by a qualified ornithologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by July 1st. This date may be earlier or later, and would have to be determined by a qualified ornithologist. Similarly, the qualified ornithologist could modify the size of the buffer based upon site conditions and the bird's apparent acclimation to human activities.

If common (that is, not special-status) passerine birds (that is, perching birds such as northern mockingbirds) are identified nesting in any tree or shrub proposed for removal, tree removal would have to be postponed until it is determined by a qualified ornithologist that the young have fledged and have attained sufficient flight skills to leave the project site. Typically, most passerine birds can be expected to complete nesting by July 1st, with young attaining sufficient flight skills by this date that are sufficient for young to avoid project construction zones. Unless otherwise prescribed for special-status bird species, upon completion of nesting no further protection or mitigation measures would be warranted for nesting birds.

Effectiveness of Mitigation Measure: Implementation of the above mitigation measures would reduce the impacts of the proposed project to *less than significant*.

Implementation/Monitoring: The mitigation measure shall be implemented by the MUHSD and the construction contractor. Monitoring shall be the responsibility of the California Department of Fish and Game.

Impact #3.4-2 - Adverse Affect on any Riparian Habitat or Other Sensitive Natural Community:
[Evaluation Criteria (b)]

No riparian habitats or other sensitive natural vegetative communities occur on the Project Site. Fahrens Creek and the riparian habitat located along the creek will not be impacted by the proposed project.

Conclusion: The proposed project will have ***less than significant impacts*** on riparian habitat or other sensitive natural communities.

Mitigation Measure: None are required.

Impact #3.4-3 - Disturbance to Wetlands and Jurisdictional Waters:
[Evaluation Criteria (c)]

There are no wetlands on the Project Site. Fahrens Creek and the Tower Lateral Canal are located adjacent to the northwest corner of the site and the southern boundary of the site, respectively. Neither of these waterways is within the Project Site and neither will be impacted by construction of the proposed project. The project contains storm drain and runoff control adequate to protect these waterways from siltation and degradation of water quality.

Conclusion: This project ***will not have a significant impact*** on or disturb wetlands.

Mitigation Measures: There are none required.

Impact #3.4-4 - Interfere substantially with the movement of fish or wildlife, impede wildlife corridors, or disturb wildlife nursery sites:
[Evaluation criteria (d)]

Fahrens Creek and the levee along Fahrens Creek likely function as a wildlife movement corridor. These areas will be protected and will not be impacted by the project. The Project Site is not likely to act as a movement corridor. The site is not a prime breeding area for any species, although some species of wildlife are expected to occasionally breed or nest on the site.

Conclusion: Construction of the Bellevue School ***will not significantly impact*** wildlife movements or disturb a wildlife nursery site.

Mitigation Measures: None are required.

3.5 Cultural Resources

INTRODUCTION

The primary purpose of this section is to assess potential impacts to historical resources, archaeological resources, or paleontological resources.

A Cultural Resource Records search was conducted for the Project Area by staff at California State University Stanislaus (See Appendix D).

IMPACT ANALYSIS

In determining the significance of impacts of archaeological resources, Section 15064.5 of the CEQA shall be used.

SIGNIFICANCE THRESHOLDS

The State *CEQA Guidelines* use the following criteria for evaluating adverse effects on cultural resources:

a) Cause a substantial adverse change in the significance of an historical resource as defined in Section 15064.5?

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature of paleontological or cultural value?

d) Disturb any human remains, including those interred outside of formal cemeteries?

e) Disturb unique architectural features or the character of surrounding buildings?

Impact #3.5-1 – Potential disruption to significant historical or archeological resources: The Cultural Resources Records search conducted for the General Plan LUE found no evidence of an historical, archaeological, paleontological, unique geological feature, or any known human remains within the Project Area. Due to the buried nature of such finds, there is a possibility that undocumented remains may be encountered. Mitigation is therefore desirable.

Conclusion: There is a lack of evidence that any significant cultural resources exist on the site. Due to the buried nature of such finds, and the uncertainty of whether or not any ***significant*** cultural resources exist, it is not feasible to conduct extensive studies prior to implementation of the project.

Mitigation Measure #3.5-1: In the event of accidental discovery of human remains or items of historical or archaeological significance, the guidelines set forth in Section 15064.5 of CEQA

require that the project be halted immediately, an archaeologist and the City called to the site to investigate further.

Effectiveness of Mitigation Measure: Implementation of the mitigation measure will reduce the impact to a ***less than significant*** level.

3.6 Geology and Soils

INTRODUCTION

This Section describes those project components which have the potential to expose people or structures to potential adverse effects due to seismicity, soil instability or incompatible soil structure types. The Initial Study prepared for the Belleview High School project found that the Project Site has no geologic or soils issues that may represent significant impacts. However, upon closer examination it was determined that the project may expose people or structures to the risk of loss, injury, or death due to strong seismic ground shaking [Evaluation Criteria (*a, ii*)]. Two other issues were not addressed in the Initial Study: Evaluation Criteria (*a, v*) and (*f*) listed below. These three issues are covered in this section.

IMPACT EVALUATION CRITERIA

Appendix G of the State *CEQA Guidelines* use the following criteria for evaluation of significant impacts that may be caused by geologic or soil conditions.

Would the project:

a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 4?

ii. Strong seismic ground shaking?

iii. Seismic-related ground failure, including liquefaction?

iv. Landslides?

v. Subsidence?

b. Result in substantial soil erosion, siltation, changes in topography, the loss of topsoil or unstable soil conditions from excavation, grading or fill?

c. Be located on a geological unit or soil that is unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1997), creating substantial risks to life or property?

e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems where sewers are not available for the disposal of wastewater?

f. Result in substantial soil degradation or contamination?

SETTING

California is geologically active and there is the potential to expose people and structures to adverse effects due to seismicity, soil instability or incompatible soil structural types. The closest known seismic faults are the Bear Mountain Fault and the Melones fault, which are approximately 22 and 26 miles northeast of the site, respectively. These two faults are not considered to be active, but are potentially active. Other faults exist to the southwest of the Project Site along the Coast Range near Los Banos and San Luis Dam, Merced County (Figure 3.6-1). These faults are active and can be expected to produce maximum earthquakes at magnitudes of 6.5 or greater. Although the US Geologic survey does not list the City of Merced as being affected by earthquakes from these seismic faults (i.e., the City of Merced is not a listed in the Alquist-Priolo Fault Zoning Act), moderate ground shaking caused by distant earthquakes is expected to occasionally occur. The topography of the site is flat and not subject to landslides, the soils are stable and not subject to liquefaction, and land subsidence from seismic activity is remote. However, land subsidence caused by groundwater extraction without adequate recharge is a possibility.

PROJECT IMPACTS AND MITIGATION MEASURES

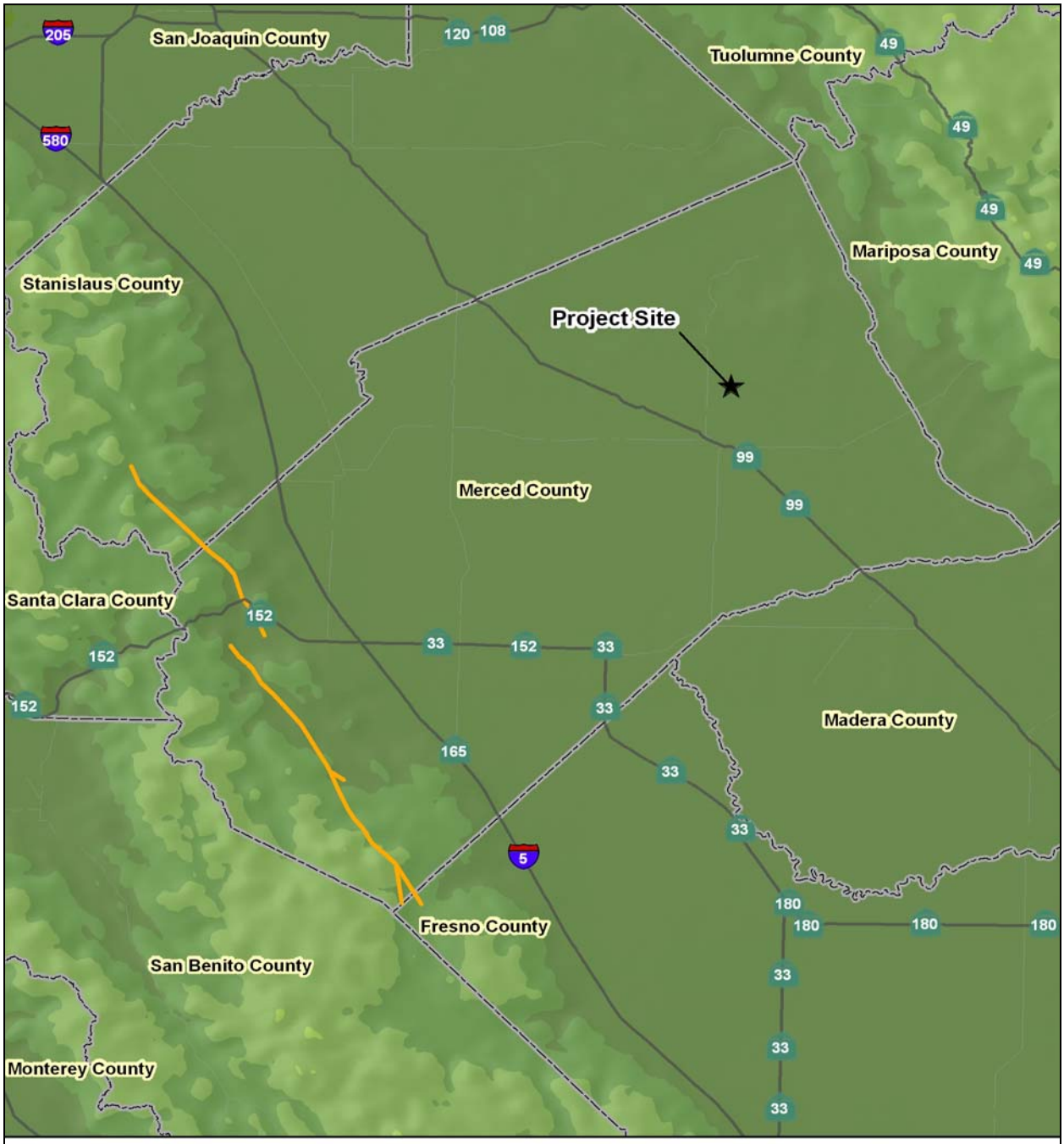
Impact #3.6-1 - Strong ground shaking:
[Evaluation Criteria (a, ii)]

Moderate ground shaking caused by seismic activity at distant faults is expected to occasionally occur at the Project Site. Ground shaking has the potential to damage buildings and result in loss, injury, or r death.

Conclusion: Although the Project Site is not located on a known fault, without proper construction and engineering techniques applied, a potential exists to adversely effect people and structures from distant earthquakes. This impact is considered ***less than significant with implementation of mitigation***.

Mitigation Measure #3.6-1.

- The project will be designed in compliance with Title 24 of the Uniform Building Code, Earthquake Requirements for Seismic Zone three and will be inspected by City building inspectors during the construction phase.
- The project will be designed by an engineer to resist any seismic-related impacts.
- The project will be designed for the appropriate soil type by an engineer to resist spreading, subsidence, or collapse.



Quad Knopf	SEISMIC FAULTS IN THE VICINITY OF MERCED COUNTY	Figure 3.6 - 1

Effectiveness of Mitigation Measure: Implementation of these mitigation measures will reduce the impact to ***less than significant***.

Impact #3.6-2 - Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving land subsidence:
[Evaluation Criteria (a, v)]

Land subsidence from the over drafting of groundwater could occur in the area. The Belleview High School will be connected to the City of Merced's water supply, which is obtained from groundwater pumping. The City of Merced has an agreement with the Merced Irrigation District to supply additional, supplemental water. The City has a Water Master Plan that adequately accounts for expansion of the City to the north, and includes water supply projections for this expansion.

Conclusion: The City of Merced's water supply is adequate to support this project without significant groundwater over draft. The potential of land subsidence caused by ground water overdraft ***is less than significant***.

Mitigation Measures: None are needed.

Impact #3.6-3 - Result in substantial soil degradation or contamination:
[Evaluation Criteria (f)]

The Belleview High School will be connected to the City sewer system and Garbage collection services will be provided. No industrial waste or contamination will be generated on-site. Soil contamination from construction equipment will be mitigated. No other soil degradation or contamination will occur.

Conclusion: Soil degradation or contamination from this project ***will be less than significant with the incorporation of mitigation measures.***

Mitigation Measure #3.6-3: To reduce soil contamination from construction equipment, the following measures will be implemented:

1. All maintenance and refueling of construction equipment will be conducted at a pre-approved location on site. All used oil and other contaminants will be collected and disposed of properly.

2. All equipment will be regularly and properly maintained to reduce leakage of fuel, oil, and other potential soil contaminants.

3. Any soil that is contaminated by fuel spills, oil spills, or spills of other potential soil contaminants will be removed from the site and disposed of at a suitable toxic waste facility.

Effectiveness of Mitigation Measure: Implementation of this mitigation measure will ensure that soil contamination ***will be less than significant***.

3.7 Hazards and Hazardous Materials

INTRODUCTION

This section describes the potential project-related hazards associated with the development and operation of the school complex on the 51-acre site in northeast Merced. Hazards associated with agricultural practices include residences organo-chlorine pesticides and heavy metals such as lead. Many organo-chlorine pesticides such as DDT are extremely persistent in the environment and in human tissues. Some pesticides are sources of lead. Lead also bio-accumulates in body tissues.

The Initial Study (Appendix A) concluded that the proposed project would have no impact or less than significant impact on exposure of hazardous materials due to routine transport, accidental spill or disposal of hazardous materials, would not release hazardous emissions or handle hazardous or acutely hazardous material substances is not located on a site which is included on a list of hazardous substances pursuant to Government Code Section 159625 is not located within the vicinity of a private airstrip or within two miles of a public airport, or interfere with an adopted emergency exposure plan, or expose people or structures to wildland fires.

Since the date of the Initial Study, a Phase 1 ESA Update was prepared and reviewed by California Department of Toxic Substances Control (DTSC). A further analysis for evaluating hazardous conditions is set forth in Appendix G of the *CEQA Guidelines* include the criteria:

- *Expose people to existing or potential hazardous and health hazardous other than these set forth above [refers to appendix G]?*

IMPACT ANALYSIS

REGULATORY SETTING

The California Department of Education School Facilities Planning Division's *School Site Selection and Approval Guide* includes a set of selection criteria that addresses safety factors that should be considered when evaluating potential school sites. Certain health and safety requirements are governed by state regulations and/or policies of the School Facilities Planning Division (SFPD). In selecting a school site the following factors should be considered.

a) If the proposed school site is within two miles of an existing airport runway the school district must notify the California Department of Education School Facilities Planning Division (SFPD). The SFPD will then notify the California Department of Transportation Aeronautics Program, Office of Airports.

b) The SFPD has established the following limits for locating any part of a school site property line near the edge of easement for high-voltage power transmission lines:

    1) 100 feet from the edge of an easement for a 50-133kV line

    2) 150 feet from the edge of an easement for a 220-230kV line

3) 350 feet from the edge of an easement for a 500-550 kV line

These figures represent kV strengths of transmission lines used by utility companies in January 1993. Utility companies report that strengths for *distribution* lines are below 50kV.

c) The presence of potentially toxic or hazardous substances on, or in the vicinity of, a prospective school site is another concern relating to the safety of students, staff, and the public. Those responsible for site evaluation should give special consideration to the following hazards:

1) Landfill areas on or adjacent to the site

2) Proximity of site to current or former dump areas, chemical plants, oil fields, refineries, fuel storage facilities, nuclear generating plants, abandoned farms and dairies, and agricultural areas where pesticides and fertilizer have been heavily used

3) Naturally occurring hazardous materials, such as asbestos, oil, and gas

d) The school district shall consult with the administering agency and the local air pollution control district or air quality management district in order to identify facilities within a quarter mile of the proposed site that might reasonably be anticipated to emit hazardous air emissions or handle hazardous materials, substances, or wastes and shall provide written notification of those findings.

e) The school district shall include in an environmental impact report or a negative declaration information needed to determine that the proposed site is not any of the following:

1) The site of a current or former hazardous waste disposal site or solid waste disposal site unless, if the site was a former solid waste disposal site, the school governing board concludes that the wastes have been removed

2) A hazardous substance release site identified by the State Department of Health Services (now maintained by DTSC)

3) The site of one or more pipelines, situated underground or aboveground, which carry hazardous substances, materials, or wastes, unless the pipeline is used only to supply natural gas to that school or neighborhood

f) While most railroads have detailed instruction for handling hazardous materials, there is no setback distance between railroad tracks and schools defined in law. However, the *California Code of Regulations, Title 5,* Section 14010(d), established the following regulations pertaining to proximity to railroads:

If the proposed 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 crossing, 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.

g) To ensure the protection of students, faculty, and school property if the proposed school site is within 1,500 feet of the easement of an aboveground or underground pipeline that can pose a safety hazard, the school district should obtain the following information from the pipeline owner or operator:

   1) The pipeline alignment, size, type of pipe, depth of cover

   2) Operating pressures in pipelines near the proposed school site

   3) Estimated volume that might be released from the pipeline should a rupture occur on the site

   4) Owner's assessment of the structural condition of the pipeline (Periodic reassessment would be appropriate as long as both the pipeline and the school remain operational.)

h) *Education Code* sections 17212 and 17212.5 require that a geological study and a soils analysis provide an assessment of the potential for earthquake or other geological hazard damage if the prospective school site is located (1) within the boundaries of any Alquist-Priolo special studies zone; or (2) within an area designated as geologically hazardous in the safety element of the local general plan, as provided in *Government Code* Section 65302(g). Because California is seismically active and new faults are being discovered, SFPD policy is that all proposed school sites have geological studies and soils analyses completed.

   The DTSC's School Property Evaluation and Cleanup Division is responsible for assessing, investigating and cleaning-up proposed school sites. The Division ensures that selected properties are free of contamination or, if the properties were previously contaminated, that they have been cleaned-up to a level that protects the students and staff who will occupy the new school. All proposed school sites that will receive State funding for acquisition or construction are required to go through a rigorous environmental review and cleanup process under DTSC's oversight.

PROJECT SETTING

The Project Site has been in agricultural production for at least 50 years according to the Phase 1 ESA Update. The land was historically used as irrigated pasture and dry farming for wheat and oats. The Phase 1 ESA Update references recent records (1998-2005) provided by the Merced County Agricultural Commissioner (MCAC), which specify that tomatoes and sugar beets were

grown on the site from during the 1980's and 1990's. Also, the Phase 1 ESA Update reports that the organo-chlorine pesticide, Gramaxone (paraquat) was applied on the Project Site.

The North Merced Area High School Site Suitability Study also includes an analysis of the site and its conformity with CDE and CEQA location policies and guidelines, and notes that there are 73KV and 230KV lines in the vicinity.

Impact # 3.7-1 - Presence of Toxic and Hazardous Substances: The Phase 1 ESA Update determined that a one-time application of paraquat, an organo-chlorine pesticide, occurred on the property.

Conclusion: The DTSC requires that a Preliminary Endangerment Assessment (PEA) be performed to determine the presence and extent of organo-chlorine pesticides and heavy metals on the site. This is the second of three steps outlined by the DTSC for Evaluating and Cleaning up School Sites. The first step, completion of a Phase 1 ESA has already been done. Until it is determined by the PEA whether contaminants are present on the site, the impact will remain ***potentially significant***.

Mitigation Measure #3.7-1: The District will complete a PEA form for submittal to the DTSC for evaluation. Should the PEA report determine the Project Site contains residue of organo-chlorine pesticides or other hazardous materials; the District is required to follow DTSC cleanup guidelines and implement the last step of the DTSC Three-Step Process, the Response Action, described below:

- The District shall amend the existing Environmental Oversight Agreement (EOA) to a Voluntary Cleanup Agreement (VCA), or School Cleanup Agreement (SCA).

- The District shall then be required to conduct a Supplemental Site Investigation, Removal Action Work Plan, Remedial Investigation, Feasibility Study or Remedial Action Plan following DTSC guidelines.

Effectiveness of Mitigation Measure: The implementation of the DTSC cleanup guidelines will ensure the protection of children, staff and the environment from potential health effects of exposure to organo-chlorine pesticides and heavy metals. Following the DTSC School Property and Evaluation Division Three-Step Process will ensure that any impacts due to contamination of the Merced High School Site will be ***less than significant***.

Impact # 3.7-2 - Proximity to High-Voltage Transmission Line: Transmission lines of 73 kV and 230 kV owned by Pacific Gas & Electric Company (PG&E) are on the eastern portion of the site.

Conclusion: As acknowledged in the *School Site selection and Approval Guide* prepared by the School Facilities Planning Division of the California Department of Education:

Electric power transmission lines maintained by power companies may or may not be hazardous to human health. Research continues on the effects of electromagnetic fields (EMF) on human

beings. However, school districts should take a conservative approach when reviewing sites situated near easements for power transmission lines.

In 1994, School Facilities Planning Division established limits for locating any part of a school site near easements for high-voltage power transmission lines. For a 73 kV transmission line the school must be 100 feet from the edge of the power line easement. For a 230 kV transmission line the school must be 150 feet from the edge of a power line easement. Due to the proximity of the Project Site to high voltage transmission lines, the impacts are ***potentially significant***.

Mitigation Measure # 3.7-2: The 70 kV transmission lines and poles located on the west side of G Street adjacent to the proposed project site will be relocated to the east side of G Street in the City of Merced's right-of-way.

Effectiveness of Mitigation Measure: Implementation of this measure will reduce any potential impacts resulting from hazards associated with proximity to high voltage transmission lines to ***less than significant***.

Impact # 3.7-3 – Transport and Storage of Hazardous Substances: Typical high school curriculum includes chemistry and biology laboratories as well as related educational experiences resulting in the disposal and storage of potentially hazardous materials.

Conclusion: The District maintains a hazardous materials Business Plan which manages the storage and use of all hazardous materials, subject to approval by Merced County Environmental Health, and which is updated annually under state law.

All hazardous materials and waste generated by the campus would be collected and managed by the school. Measures of handling hazardous materials include packaging and labeling waste properly, segregating incompatible materials, and collection of wastes to a central location for appropriate disposal. Campus policies would emphasize that hazardous wastes will not be placed in the trash or poured down a drain in compliance with applicable laws and regulations. The impact is ***less than significant***.

Mitigation Measures: None are required.

3.8 Hydrology and Water Quality

INTRODUCTION

The Initial Study (Appendix A) concluded that the proposed project would have no significant impacts or less than significant impacts to all hydrologic and water quality issues, except potentially exposing people and property to flooding. All wastes from the project will be handled by the City, storm water drainage from the site will be collected onsite, and storm water drainage created by the elevation of the project will enter into the City storm water drainage system. The project will not substantially deplete groundwater supplies, alter existing drainage patterns, or contribute to runoff. The project will not contribute to the degradation of water quality or place housing within a 100 year flood zone. The site is not exposed to seiches,

tsunami's, or mudflow. The District will comply with applicable requirements of the RWQCB. This section is limited to a discussion of impacts associated with flooding.

IMPACT EVALUATION CRITERIA

The criteria for evaluating hydrologic and water quality Impacts are contained in Appendix G of the *CEQA Guidelines* and state that a project will significantly impact hydrologic and water quality if it will:

a) *Violate any water quality standards or waste discharge requirements?*

b) *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 (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?*

c) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?*

d) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or off-site?*

e) *Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?*

f) *Otherwise substantially degrade water quality?*

g) *Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?*

h) *Place within a 100-year flood hazard area structures which would impede or redirect flood flows?*

i) *Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?*

j) *Inundation by seiche, tsunami, or mudflow?*

Those issues associated with evaluation criteria are addressed in this DEIR. The remaining issues were found to be less than significant or not significant in the Initial Study.

SETTING

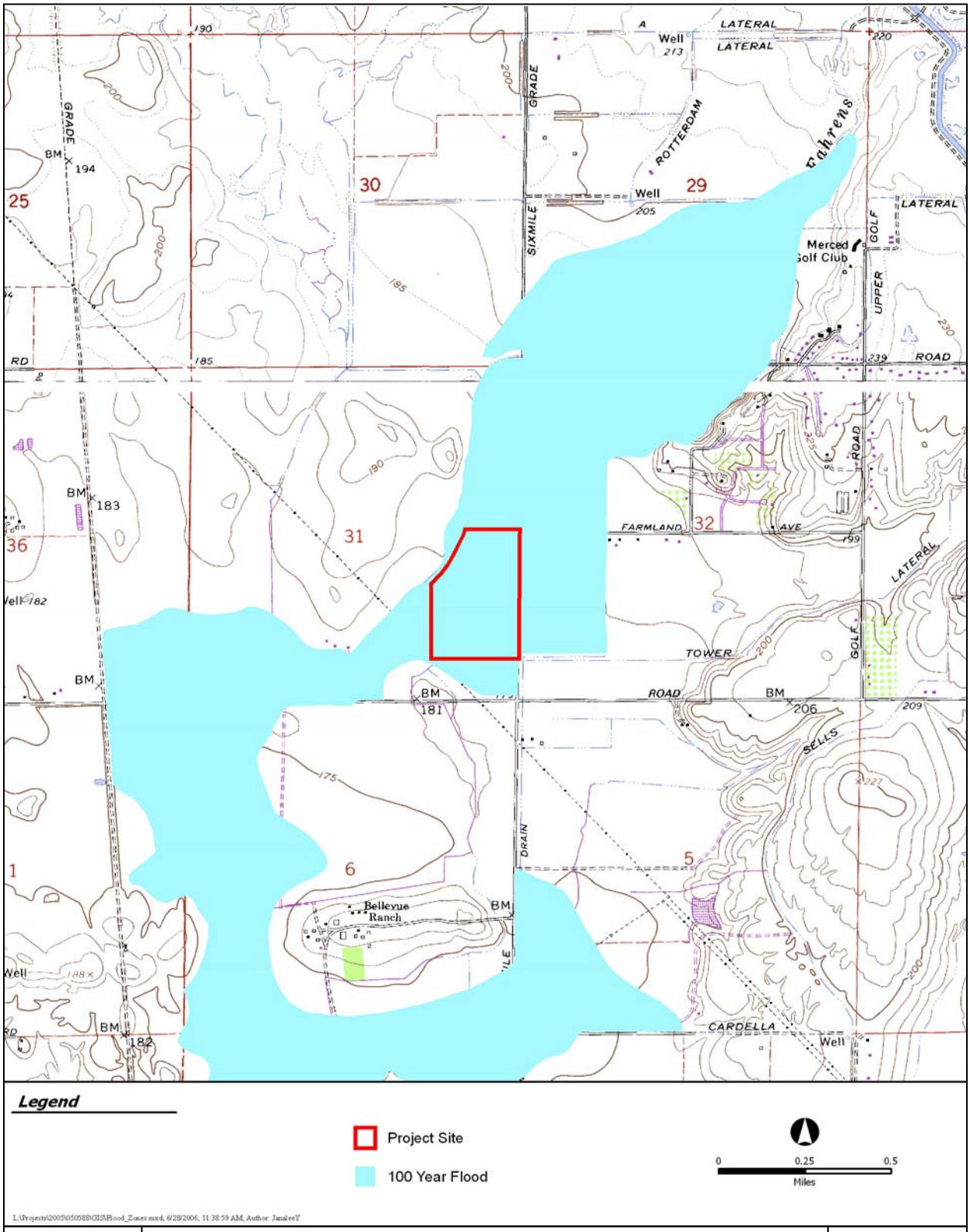
The project is within a 100-year flood plain and complete inundation can be expected during a 100 year storm event (Figure 3.8-1). The water elevation on site during such a flood event is estimated to be 1 foot.

Yosemite Lake is a manmade, earthen embankment type, reservoir operated by the Merced Irrigation District. It is used for irrigation purposes and recreational uses, and is approximately 1.6 miles from the Project Site. The reservoir dam is 45 feet high and 135 feet wide. The lake has an estimated surface area of 1.75 square miles and contains 8,000 acre feet of water. Four engineering studies were conducted addressing the potential flood impacts on the Merced area caused by dam failure. None of these studies assessed the probability or risk of dam failure, only the resulting impacts of failure. The first report was prepared for Merced Irrigation District by Tudor Engineering Company of San Diego in 1974 and covered all potential flood areas from the dam to Santa Fe Avenue in the City of Merced. This study consists of hand-drawn calculations which were utilized in two additional studies. These additional studies were prepared by Harris and Associates of Fresno for the Merced Union High School District in November 2004 and August 2006, respectively. The most recent study (Yosemite Lake Dam Failure Analysis for Bellevue High School) was prepared by Blair, Church and Flynn (March 2007) and is included in Appendix G.

To accommodate the designed and future alignment of flood control improvements along Fahrens Creek, a 290 foot right-of-way will be established along the creek. This will ensure that the ACOE facilities will be implemented to provide flood protection as described in the Bellevue Ranch DEIR.

Impact #3.8-1 – Flooding of the project site: Substantial flooding of the site would occur from failure of the Yosemite Lake dam and would result in a substantial risk to people and structures.

Conclusion: Flooding of the site is expected to occur during 100 year storm events and during failure of the earthen dam at Yosemite Lake. The Yosemite Lake Dam Failure Analysis (Appendix G) analyzed a catastrophic dam break and maximum flood volume and velocities of a flood wave as it moves downstream from the dam to the school site. The analysis assumed a raised pad to accommodate the proposed project. The Project site will be graded and raised approximately 3.5 feet to meet flood inundation levels. The building foundation pads and campus quad area will be elevated 1.5 feet above the inundation elevations. The remainder of the campus, such as parking lots, play courts and playfields, does not need to be raised above the inundation level. These areas can withstand an inundation flood wave that is approximately 1-foot deep and has a velocity of 1.5 feet per second. The resulting damage from the flooding is expected to have a repair cost that is less than the cost to fill these areas above the inundation levels. Adding the proposed school causes the flood water to slow down and go around the school improvements. In doing so, the level of flooding will slightly increase upstream of the school. However, the amount of water level increase would be very small given the small width of the school improvements versus the width of the flood area. Flooding of the site ***is a significant impact***.



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FLOOD ZONES

Figure 3.8 - 1

Mitigation Measure #3.8-1: The elevation of the Project Site will be increased using fill to reduce the potential of site flooding. The amount of fill required and other site-specific requirements that will be implemented are provided in the Yosemite Lake Dam Failure Analysis (Appendix G). The Project site will be graded and raised approximately 3.5 feet to meet flood inundation levels. The building foundation pads and campus quad area will be elevated 1.5 feet above the inundation elevations. A licensed surveyor shall be retained to adjust the elevations reported to 1988 NAVD (*North American Vertical Datum* of 1988) and verify elevations and fill height.

Effectiveness of Mitigation Measure: Implementation of this mitigation measure will reduce the potential of flooding to a level that ***is less than significant***.

3.9 Land Use and Planning

INTRODUCTION

The Initial Study (reference Appendix A) concluded that the proposed project would have no environmental impact from dividing an established community or conflicting with any applicable habitat conservation plan or natural community conservation plan. It also concluded that the proposed project would have a less than significant environmental impact form conflicting with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, these issues were not going to be discussed any further in subsequent environmental studies, such as the Draft EIR.

The City has indicated that the Merced Vision 2015 General Plan shows this proposed new high school within the boundaries of the "Bellevue Ranch Master Development Plan" (BRMDP), which was adopted by the City in June, 1995. The BRMDP includes policies and a development plan designed to regulate development within the entire 1,356 acres of property in the BRMDP. This development plan shows a 43-acre high school site along with a variety of residential, light commercial and public service uses.

Other policies in the General Plan address the importance of schools for the education of the city's youth, the provision of additional passive public open space, and other inherent consequential benefits to the community that would be provided with the addition of a new school.

SETTING

The proposed new high school site is in an area designated "standard single-family" residential development. According to City Planning staff, it has been long standing City policy that the Development Plan approved at the time of adoption of each P-D (Planned Development) zone also provides the specific zoning designation(s) within each P-D zone. In other words, any development within a P-D zone has to conform to its approved plan. Therefore, for this project to proceed, the City Council will need to adopt the final version of this DEIR and the district will need to apply to the City for a General Plan Amendment, Site Utilization Plan (SUP) Revision, and Rezoning. In addition, encroachment permits will need to be obtained from the City for any work done in the rights-of-way (road work). Refer to Appendix A for letters from the City.

Section 2.8 of the BRMDP states that "the adopted City of Merced ordinances shall be utilized to address densities, intensities, setbacks and heights while the Merced Village Design Guidelines shall be utilized for more detail on architectural features and design. The underlying zoning standards of the City of Merced ordinances consistent with each land use shall apply unless exempted by this section." Section 7 of the BRMDP analyzes and confirms the BRMDP's consistency with the Merced General Plan, the Zoning Ordinance and Standards of the City of Merced and the Merced Villages Conceptual Land Use Plan Design Guidelines, locating the high school at this site will not interfere with the consistency of the BRMDP with these documents.

IMPACT EVALUATION CRITERIA

Threshold of Significance are defined in Appendix G of the *CEQA Guidelines.*

Would the Project:

a) Physically divide an established community?

b) 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, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

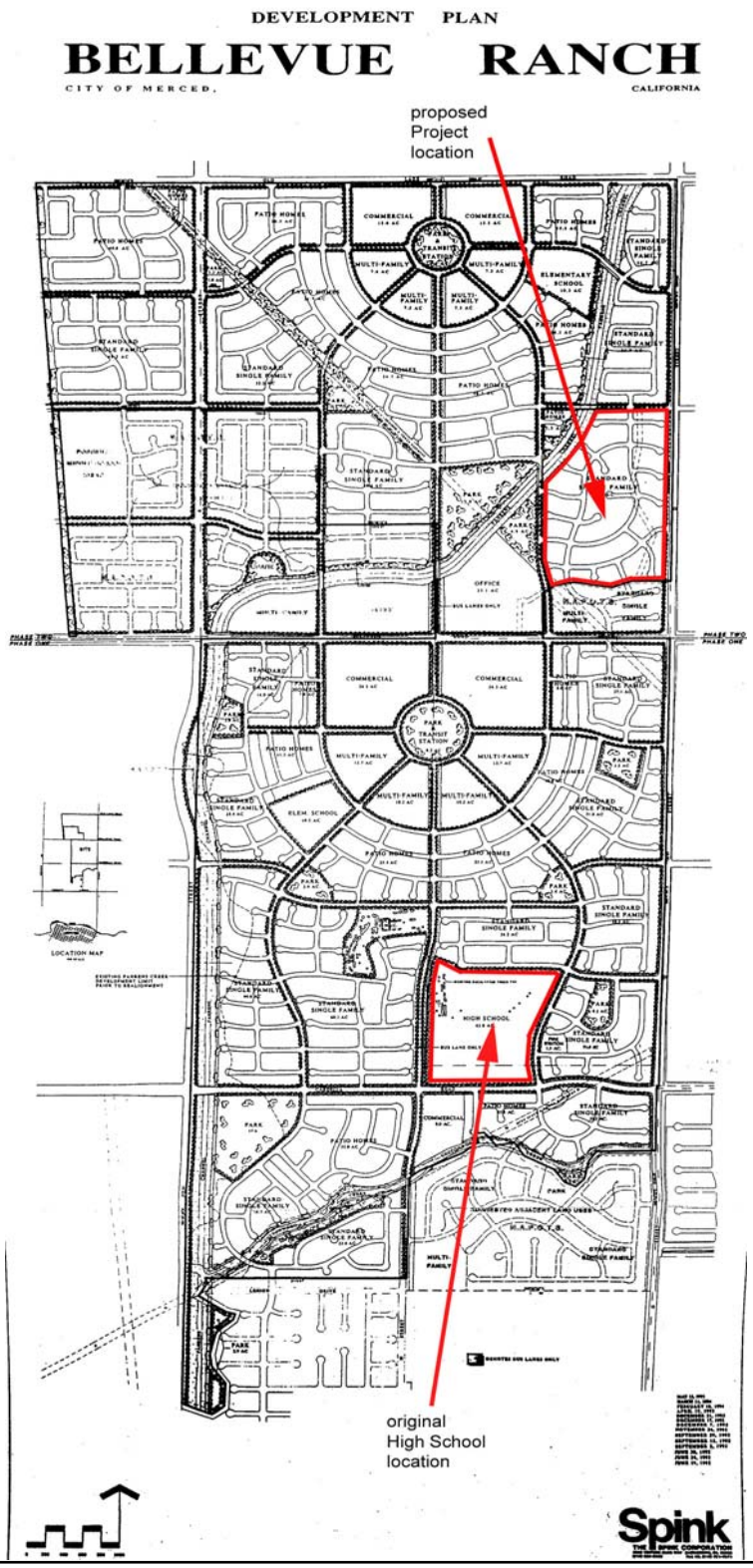
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

The Initial Study determined that, of these impacts, only b) was potentially significant in relation to this project.

Impact #3.9-1 – Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect: As stated in the Regulatory Setting section of this chapter, the Project Site is within the Bellevue Ranch Master Development Plan (BRMDP), adopted by the City in June 1995. The BRMDP includes policies and a development plan designed to regulate development within the entire 1,356 acres of property in the BRMDP. The development plan shows a 43-acre high school site on the northeast corner of Cardella Road and M Street (see Figure 3.9-1).

The proposed project is a high school on a 58-acre site located on the west side of G Street between Farmland Road and Bellevue Road. Because the high school site proposed by this project is larger than the one shown in the Bellevue Ranch Master Development Plan, and in a location shown on that plan as being for standard single family homes (see Figure 3.9-1), the City Council will need to adopt the final version of this DEIR and the District will need to apply to the City for a General Plan Amendment, Site Utilization Plan (SUP) Revision, and Rezoning.

Conclusion: The mitigation measure below will reduce any potential impacts to existing land use plans, policies, and regulations of the City of Merced to less than significant.



Quad Knopf	SCHOOL LOCATIONS	Figure 3.9 - 1

Mitigation Measure #3.9-1: The MUHSD will apply for approval for a General Plan Amendment, a Site Utilization Plan (SUP) Revision, a Rezoning and encroachment permits for any work done in the rights-of-way (road work).

Effectiveness of Mitigation Measure: These measures will reduce impacts to a level of ***less than significant***.

3.10 Mineral Resources

INTRODUCTION

The Initial Study (reference Appendix A) concluded that the proposed project would have no impact to the loss of availability of a known mineral resource or the loss of availability of a locally-important mineral resource recovery site. Therefore, these issues are not discussed any further in this Draft EIR.

3.11 Noise

INTRODUCTION

This section discusses existing noise levels at and adjacent to the Project Site together with noise levels resulting from construction and operation activities.

The Initial Study concluded that the proposed project would have no impact regarding the exposure of persons to (or the generation of) excessive ground borne vibration or noise levels or the exposure of people to excessive noise levels from a public or private airport. The Initial Study also concluded there would be less than significant impacts regarding exposure of persons to, or generation of, noise levels in excess of established standards and to permanent or temporary increases in ambient noise levels.

IMPACT EVALUATION CRITERIA

According to the District's adopted thresholds of significance, a project's effect will normally be considered significant if it will be inconsistent with the policies and standards adopted in the City's General Plan Noise Element. The standards within Merced's General Plan Noise Elements apply to this project. The General Plan sets a standard of 60 dB Ldn at the exterior of noise-sensitive uses. Noise-sensitive uses include residences, schools, hospitals and churches. CEQA does not define what constitutes a "substantial" increase in noise levels. Some guidance is provided by the 1992 findings of the "Federal Interagency Committee on Noise (FICON)," which assessed changes in ambient noise levels resulting from aircraft operations. Their recommendations are based upon studies that relate aircraft and traffic noise levels to the percentage of persons highly annoyed by the noise. The rationale for the FICON recommendations is that it is possible to consistently describe the annoyance of people exposed to transportation noise in terms of the Ldn or Community Noise Equivalent Levels (CNEL). Annoyance is a summary measure of the general adverse reaction of people to noise that generates speech interference, sleep disturbance, or interference with the desire for a tranquil environment.

Although the FICON recommendations were specifically developed to address aircraft noise impacts, they are used in this analysis for all transportation noise sources that are described in terms of cumulative noise exposure metrics such as the Ldn or CNEL. These metrics define noise exposure in terms of average noise exposure during a 24-hour period with penalties added to noise that occurs during the nighttime or evening. Table 3.11-1 summarizes the FICON recommendations.

Table 3.11-1
Substantial Increases for Transportation Noise Exposure

Ambient Noise Level without Project (Ldn or CNEL)	Significant Impact Assumed to Occur if the Project Increases Ambient Noise Levels by:
<60 dB	+5 dB or more
60-65 dB	+3 dB or more
>65 dB	+2 dB or more

Sources: FICON as applied by Brown-Buntin Associates, Inc.

A 3 dB increase in ambient noise levels are generally considered significant for noise sources that are not transportation related and which are usually stationary. This is based on laboratory tests that indicate that a 3 dB increase is the minimum change perceptible to most people.

SETTING

The proposed project will take place on 51 acres. Property surrounding the Project Site is generally vacant, but is planned for residential use. The primary source of noise surrounding the proposed new campus is expected to be from traffic on days school is in session or other times when the proposed outdoor athletic stadium is in use. Noise from the stadium created by people and artificial sources could be significant to adjoining residences.

PROJECT IMPACTS AND MITIGATION MEASURES

Impact #3.11-1 - Traffic Noise: The increased project-related traffic surrounding the Project Area will have an effect on ambient noise levels. An average residence (without noise producers like stereos and televisions on) has an interior noise level of 30 dB (decibels), which can be described as "faint." Noisy urban streets can produce up to 90 dB ("very loud"), thereby increasing outdoor noise levels by as much as 60dB. However, these levels are reduced by barriers such as landscaping, solid walls, and house construction techniques, such as placement of windows and prudent selection of building materials. A commonly used method (Ldn) to measure noise level impacts on people is based on decibels and the location of the person at the time the sound is heard. It is also based on night time noise levels because people are more sensitive to changes in sound levels at night. Acceptable noise levels in a residence is between 25 and 40 Ldn, normally unacceptable levels are between 40 and 50 Ldn, and levels above 50 Ldn are clearly unacceptable. (reference: *The Noise Guidebook*, U.S. Department of Housing and Urban Development, September 1991).

Conclusion: Project-related traffic noise, expected to be ***significant***, (i.e. 50 Ldn or more outdoors), is unavoidable, and un-mitigatable.

Mitigation Measures: None are required.

Impact #3.11-2 - Construction Noise: The type and number of construction equipment to be used are unknown. However, it is expected that the primary sources of noise during construction will include tractors, backhoes, compressors, cranes, bulldozers and similar equipment. Noise levels at 50 feet, for example, would range between 85 to 88 dB for the typical equipment to be used on this type of project. Construction activities will be temporary in nature and will generally occur during the daylight hours. However, construction noise impacts could result in annoyance or sleep disruption for nearby residents if nighttime operations were to occur or if equipment is not properly muffled or maintained.

Conclusion: Construction activities will temporarily increase noise at the proposed project to levels that are ***significant***.

Mitigation Measures #3.11-2: The operation of noise producing equipment used during construction shall be restricted to the hours from 7:00 a.m. to 7:00 pm., Monday through Friday, and 9:00 a.m. to 6:00 p.m. on Saturday and Sunday. Effective mufflers shall be fitted to gas- and diesel-powered equipment.

Effectiveness of Mitigation Measure: These measures will reduce impacts to a level that is ***less than significant***.

Impact #3.11-3 – Stadium Noise: Sporting events and other activities held at the proposed athletic stadium will increase noise levels.

Conclusion: Noise sources associated with the athletic stadium could include cheering by the crowd, pep bands, amplified music, fireworks, drums, air horns and public address system announcements. The noise levels from high school football games were measured by Brown-Buntin Associates (BBA) near three athletic stadiums in Bakersfield during 1988 and 1992. These measurements were taken during Friday night football games at West High School, Bakersfield High School and Garces High School stadiums. These stadium facilities were selected for comparative evaluation due to their similarity to the proposed stadium design and operational procedures. The measurements were taken during varsity football games that started at 7:30 p.m. Friday night football games were used for this study, as these activities clearly generate the maximum noise impacts.

An analysis of the results of the noise measurements by BBA indicated that “noise levels from football games vary significantly depending on crowd excitement, whether band music is played, use of air horns, public address systems, fireworks and other factors. Table 3.11-2 shows the equivalent energy level (L_{eq}) from each stadium normalized to a reference distance of 400 feet from the center of each stadium and the average of the three noise levels.

Table 3.11-2
Equivalent Energy Level (L_{eq})

Stadium	Leq @ 400 Feet
West High School	67 dBA
Bakersfield High School	65 dBA
Garces High School	62 dBA
Average	65 dB(A)

Source: Brown-Buntin Associates, Inc.

An analysis of the results of these measurements indicates that without mitigation there may be project-related noise impacts generated by football games. Residents within 800 feet of the stadium could be exposed briefly to noise levels in excess of 65dB CNEL, and for games that continue past 10:00 p.m., noise impacts may extend to residences within a 1,420 foot radius of the stadium. Noise impacts at both campuses are considered to be ***potentially significant***, but can be mitigated to a level that is ***less than significant***.

Mitigation Measure #3.11.3 Stadium Noise (a, b, d): The District shall establish procedures for the installation and operation of the public address systems. Specific measures shall include location and direction of loudspeakers and establishment of maximum volume levels in compliance with the daytime 65dB CNEL at adjacent residential properties.

The District shall set 10:00 p.m. as the targeted time to end all football games and all other outdoor stadium events that attract large numbers of spectators.

Effectiveness of Mitigation Measure: Implementation of these measures will reduce stadium noise impacts to levels that are ***less than significant***.

3.12 Population and Housing

INTRODUCTION

The Initial Study concluded that the proposed project would have no impact from the displacement of a substantial number of existing homes or people, and a less than significant impact from inducing substantial population growth in an area either directly or indirectly. Population and housing impacts are therefore, not discussed any further in this Draft EIR.

3.13 Public Services

INTRODUCTION

The Initial Study concluded that the proposed project would have less than significant impacts on fire and police protection, school capacity, parkland and other public facilities. Therefore, these issues are not discussed any further in this Draft EIR.

3.14 Recreation

INTRODUCTION

The Initial Study concluded that the proposed project would have no impact from requiring the construction or expansion of recreational facilities which might have an adverse physical effect on the environment, and a less than significant impact from increasing the use of recreational facilities such that substantial physical deterioration of the facility would occur. In fact, the school athletic fields and facilities can be expected to add to the recreational opportunities of the general public. Therefore, these issues are not discussed any further in this Draft EIR.

3.15 Traffic/Circulation

INTRODUCTION

The Institute of Transportation Engineers (ITE) published trip generation rates for a variety of land uses based on observations made nationally. For details regarding this subject, a full traffic study is included in Appendix E. The trip generation rates presented were reviewed and compared to data collected from observation of other similar suburban California high schools. The consultant reviewed data available for Johansen High School in Modesto, where a single access route is available and a clear indication of school traffic could be made. These estimates were determined to be applicable for this use.

At the 2,400 student enrollment level, the new High School is expected to generate 5,040 daily automobile trips per day with 1,800 trips occurring during the highest volume hour of school traffic (i.e., a.m. peak hour).

The limits of this analysis are focused on the major intersections along key routes to and from the proposed school site. After a preliminary investigation of the existing traffic circulation patterns and school boundary and discussion with City of Merced Planning staff, it was determined that the traffic analysis should investigate the operational characteristics of the following existing intersections on the streets serving the proposed project:

1. G Street / Farmland Avenue
2. Farmland Avenue / Golf Road
3. Bellevue Road / SR 59
4. Bellevue Avenue / Barclay Avenue
5. Bellevue Avenue / G Street
6. G Street / Cardella Road
7. G Street / Yosemite Avenue

State Route 59 is a major north-south arterial serving northwestern Merced. SR 59 extends northerly from an interchange on SR 99 along the western limits of the urbanized Merced area. In the vicinity of the proposed project, SR 59 is a two lane rural highway with graveled shoulders, although portion of the highway are being improved to the south as development proceeds. Traffic count information (2004) provided by Caltrans indicates a daily volume of 2,500 to 2,900 ADT in the area of the Bellevue Road intersection. In response to the Initial Study and Notice of

Preparation issued for this project, California Department of Transportation (Caltans) requested a Traffic Impact Study (TIS) be conducted to assess the impact this project may have on SR/59 and SR/99. A traffic study is included as Appendix E of this DEIR that Caltrans can review and comment on.

Bellevue Road is an east-west arterial road that extends from the area of the Castle Industrial area north of Atwater across SR 59 to the Yosemite Lake Recreation Area. Today Bellevue Road is a two lane rural road.

The **SR 59 / Bellevue Road intersection** is controlled by stop signs on the Bellevue Road approaches. Each approach is a single lane, and there are no auxiliary turn lanes at this intersection.

G Street is a key north-south arterial street that connects northern Merced with the downtown area of the community. G Street also provides access to Merced Community College, which is located about two miles south of the Project Site. In the immediate area of the project G Street is a two lane rural road, but the facility is being widened as development occurs. South of Cardella Road G Street is a four lane facility in the area of Merced Community College.

The **Bellevue Road / G Street intersection** is controlled by an all-way stop. Each approach provides a single lane. Improvements to the intersection, including signalization, are included in the Bellevue Ranch master Development Plan.

Farmland Avenue is a local rural road that links G Street and Golf Road in the area west of the Project Site. Farmland Avenue provides access the rural residential area developed in Merced County west of Yosemite Lake. Farmland Avenue is a two lane rural road with limited shoulders.

The **G Street / Farmland Avenue intersection** is a "tee" intersection controlled by a stop sign on the westbound Farmland Avenue approach. Single lane approaches are provided on each leg of the intersection.

Barclay Avenue is a planned collector street that is part of the Bellevue Ranch Master Development Plan. This two lane road will originate within the Crosswinds (Bellevue Ranch East) area and extend northerly across Bellevue Road to Farmland Avenue in the area between M Street and G Street. Ultimately Barclay Avenue will continue to Old Lake Road, but this analysis assumes that only the portion to Farmland Avenue will be available when the school opens.

The future **Bellevue Avenue / Barclay Avenue intersection** will provide all turning movements and will be signalized as part of the improvements included in the Bellevue Ranch Master Development Plan.

Golf Road is a local county road that links the Merced Golf Club with Bellevue Road. This two lane rural road extends northerly from Bellevue Road across Farmland Avenue to Old Lake Road. As the northern Merced area develops Gardner Avenue will be extended northerly to the Bellevue Road / Golf Road intersection.

The **Farmland Avenue / Golf Road intersection** is a "tee" intersection controlled by a stop sign on the eastbound Farmland Avenue approach. There is a single travel lane on each approach.

Cardella Road is a planned east-west arterial street located halfway between Bellevue Road and Yosemite Blvd. This four lane street will provide access to the developing urban areas south of the high school site.

The **Cardella Road / G Street intersection** is currently an unimproved rural intersection. The intersection will be improved as part of the Bellevue Ranch Master Plan, including signalization.

Yosemite Blvd is a major east-west arterial across northern Merced. Today Yosemite Blvd terminates as it approaches SR 59, but pending improvements will link the two roads and install a traffic signal on the state highway. Today Yosemite Blvd is a four lane facility in the study area.

The **G Street / Yosemite Blvd intersection** is controlled by an actuated traffic signal. Each intersection approach includes two through travel lanes and separate left turn lanes. Auxiliary right turn lanes are available on the G Street approaches.

Alternative Transportation Modes

Transit Facilities

Two public transit providers are available in northern Merced County.

Merced County Transit provides both fixed route service and "roundabout" service that combines features of fixed route and dial a ride services. The fixed route service (The Bus) extends on G Street as far north as Merced Community College, and several routes travel along Yosemite Blvd and G Street in this area. However, no routes extend north to the Project Site.

The Bus – Merced County Transit provides door-to-door transit service in every city, town and community in Merced County. Dial-A-Ride service is primarily for use by senior citizens age 60 and older and the handicapped, or those without a regularly scheduled fixed route bus operating within one (1) mile of their residence.

Pedestrian / Bicycle Facilities. Existing pedestrian and bicycle facilities are limited in the immediate area of the high school site. G Street south from Bellevue Road south and Yosemite Blvd are designated Class II facilities in the Merced Bicycle Master Plan. A Class I path extends north from Yosemite Blvd along Lake Road to Yosemite Lake. However, pedestrian and bicycle facilities are part of the improvements being installed under the Bellevue Ranch Master Plan.

The City of Merced has a two-tiered traffic mitigation program in place that relates to the project area. As part of the General Plan's Circulation Element implementation they have adopted a development impact fees for major roadway facilities. These fees have been adopted as mitigation for traffic impacts. The fees are applicable to all private development projects in the City and the mitigation program is fully funded by levies on the private residential, commercial and industrial development in the community. The school district is not assessed for these fees due to funding

limitations, and legal limitations contained in Government Code section 54999, and the relevant Supreme Court decision in City of Marina v. Board of Trustees of the California State University which held that the imposition of traffic and other fees are not specifically authorized by Section 54999 of the Government Code.

Measure of Significance / Level of Service

Level of Service. The quality of traffic flow through intersections and on individual roadway segments is described in terms of operating Level of Service.

"Level of Service (LOS)" is a qualitative measure of traffic operating conditions whereby a letter grade "A" through "F", corresponding to progressively worsening operating conditions, is assigned to an intersection or roadway segment. Table 3.15-1 presents the characteristics associated with each LOS grade.

Table 3.15-1
Level of Service Definition

Level of Service	Signalized Intersection	Unsignalized Intersection	Roadway (Daily)
"A"	Uncongested operations, all queues clear in a single-signal cycle. Delay $\leq$ 10.0 sec	Little or no delay. Delay $\leq$ 10 sec/veh	Completely free flow.
"B"	Uncongested operations, all queues clear in a single cycle. Delay > 10.0 sec and $\leq$ 20.0 sec	Short traffic delays. Delay > 10 sec/veh and $\leq$ 15 sec/veh	Free flow, presence of other vehicles noticeable.
"C"	Light congestion, occasional backups on critical approaches. Delay > 20.0 sec and $\leq$ 35.0 sec	Average traffic delays. Delay > 15 sec/veh and $\leq$ 25 sec/veh	Ability to maneuver and select operating speed affected.
"D"	Significant congestions of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay > 35.0 sec and $\leq$ 55.0 sec	Long traffic delays. Delay > 25 sec/veh and $\leq$ 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
"E"	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay > 55.0 sec and $\leq$ 80.0 sec	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and $\leq$ 50 sec/veh	At or near capacity, flow quite unstable.
"F"	Total breakdown, stop-and-go operation. Delay > 80.0 sec	Intersection blocked by external causes. Delay > 50 sec/veh	Forced flow, breakdown.

Sources: 2000 Highway Capacity Manual.

The *2000 Highway Capacity Manual* presents methodologies for calculating practical capacity and Level of Service at intersections. At signalized intersections and intersections controlled by all-way stop signs, traffic conditions are described in terms of the average length of the delays experienced by all motorists. Intersection configuration, traffic volumes and traffic signal timing are all factors that enter into determination of the length of average delay and the resulting Level of Service.

The delays experienced at intersections controlled by side street stop signs are different. Motorists waiting to turn must yield the right of way to through traffic, and the length of delays can vary on each approach to the intersection. For this analysis the length of delays experienced by motorists on each approach has been calculated.

A traffic impact is considered significant if it renders an unacceptable Level of Service on a street segment or at a signalized intersection, or if it worsens already unacceptable conditions on a street segment or at a signalized intersection. Local jurisdictions and Caltrans adopt minimum Level of Service standards for use in traffic studies and environmental impact reports. The City of Merced employs LOS D as the minimum standard. Caltrans strives to maintain LOS C on state highways.

Existing Levels of Service. To determine existing traffic volumes and obtain more information about traffic conditions in the study area, a.m. peak hour traffic counts were taken at the existing study intersections during February 2006. These counts were made on a weekday when area schools were in session. Existing intersection Levels of Service are shown on Table 3.15-2.

Table 3.15-2
Existing Intersection Levels of Service

Intersection	Control	AM Peak Hour	
		Average Delay (Seconds)	LOS
G Street / Farmland Avenue			
Southbound left turn	WB Stop	7.5 sec	A
Westbound left+right turn		11.4 sec	B
Golf Road / Farmland Avenue			
Northbound left turn	EB Stop	-	-
Eastbound left+right turn		8.5 sec	A
SR 59 / Bellevue Road	EB / SB Stop		
NB left turn		7.5 sec	A
SB left turn		7.8 sec	A
EB left+thru+right turn		17.6 sec	C
WB left+thru+right turn		16.3 sec	C
Bellevue Road / G Street	All-Way Stop		
(overall)		(10.5 sec)	(B)
NB approach		11.0 sec	B
SB approach		9.8 sec	A
EB approach		10.8 sec	B
WB approach		9.1 sec	A
G Street / Yosemite Blvd	Signal	29.3 sec	C

As shown, current Levels of Service vary at study intersections. The low volume intersections near the site operate at LOS C or better. The signalized G Street / Yosemite Blvd intersection also operates at LOS C, but short periods of congestion typically accompany the peak periods immediately before and after classes at Merced Community College.

Because current traffic conditions in the study area are likely to change before the project is developed, it is appropriate to evaluate project impacts within the context of background conditions expected to occur when the school opens. Currently the north Merced area is seeing significant growth, and the City of Merced Planning Department has provided input to this study with regard to the nature and location of background development that can be expected over the next three years.

Development Assumptions

Pending Development

The most noteworthy ongoing development in the area of the School site is Bellevue Ranch. The approved Master Plan addresses the area west of G Street between Cardella Road and Bellevue Road. Other development is also occurring east of G Street.

As part of their program to monitor ongoing development, City staff has forecast the number of residences that could reasonably be assumed to be occupied in the area of the school for the years 2010, 2020 and 2030. Assumptions relating to the year 2010 are presented in Table 3.15-3. As shown, City staff envisions occupancy of nearly 5,400 residences in this area by the year 2010.

Table 3.15-3
Year 2010 Development Assumptions

Area	North – South boundaries	East-West Boundaries	New Residences by 2010	
			Single Family	Multiple Family
1	Bellevue to Old Lake Rd	SR 59 to D Street	0	0
2	Bellevue to Old Lake Rd	R Street to G Street	177	32
3	Bellevue Road to Old Lake Road	G Street to Gardner Avenue	0	0
4	Cardella Ave to Bellevue Road	SR 59 to R Street	165	77
5	Cardella Ave to Bellevue Road	R Street to G Street	820	240
6	Cardella Avenue to Bellevue Road	G Street to Gardner Ave	145	96
7	Yosemite Blvd to Cardella Ave	SR 59 to R Street	945	772
8	Yosemite Blvd to Cardella Ave	SR Street to M Street	160	0
9	Yosemite Blvd to Cardella Ave	M Street to G Street	296	0
10	Yosemite Blvd to Cardella Ave	G Street to Gardner Ave	1,036	432
Total	Yosemite Blvd to Old Lake Road	SR 59 to Gardner Ave	3,744	1,649

Circulation System Improvements. Because each phase on the Bellevue Ranch project is conditioned to install specific roadway improvements, it is possible to project the extent of roadway improvements that are likely to be installed by the time the school opens.

Impact #3.15-1 - Increase in Traffic. Operation of the proposed Project will increase traffic volumes on various roadways in the Project vicinity.

Mitigation Measure #3.15-1: Traffic mitigation measures are outlined in Table 3.15-4. In addition to the District's improvements, additional roadway infrastructure will be necessary as the Bellevue Ranch Master Development Phasing Plan progresses. The District will pay it's approximately $1.53 million in local transportation impact fees and regional transportation impact fees. Traffic impact fees were calculated using the city's Institutional Land Use impact fee schedule ($6,174 per 1,000 sq. ft. of building space) and the Regional Transportation impact fee schedule ($1,900 per 1,000 sq. ft. of building space) for a total of $8,074 per 1,000 sq. ft. The proposed project includes approximately 190,000 sq. ft. for a total impact fee of $1,534,060.

Participation in local offsite improvements. Regarding construction of the bridges on Farmland and Barclay, MUHSD has proposed that the District will pay a proportionate share of bridge construction costs based on a 24-hour contribution of traffic flows utilizing the bridges at full build-out of the BRMDP area. The school's 24-hour contribution of traffic flows is estimated to be 10%.

State Highway Improvements. There is currently no adopted mitigation fee mechanism developed by the City of Merced for SR59 improvement participation.

Effectiveness of Mitigation Measure: These measures will reduce short-term impacts to a ***less than significant*** level for all the roads and intersections discussed above. Additional mitigations necessary to fully mitigate Master Plan and General Plan buildout will be provided through development impact fees and implemented by the City on as-needed basis.

Implementation/Monitoring: Implementation and monitoring shall be performed by MUHSD and Caltrans.

3.16 Utilities and Service Systems

INTRODUCTION

The Initial Study concluded that the proposed project would have no impact to the following: exceed wastewater treatment requirements of the applicable RWQCB; require or result in the construction of new water or wastewater treatment facilities, the construction of which could cause significant environmental effects; require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed; result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments; be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; and comply with federal, state, and local statutes and regulations related to solid waste.

Table 3.15-4
Traffic Mitigation Table

	Impact	Condition		Description of Mitigation	Method To Implement Mitigation Measure: Improvement or Payment of Fees			Reimbursable Or Credit for Improvement
		Peak Hour vs. Peak Period *	Project or Cumulative *		Improvement by District	Impact Fees paid by District	Other Fee	
"G" Street / Yosemite Avenue								
1	Level of Service E	PH	Project	Add lanes on G Street	No	Yes	No	NA
"G" Street / Farmland								
2	Level of Service on WB Farmland Approach is LOS F	PH	Project	None – not significant itself due to (a) small volume; (b) presence of alternate road; (c) only one approach of intersection is substandard.	No	No	No	NA
"G" Street / Farmland Avenue Intersection								
4.	"Above Capacity" Conditions	PP	Project	Configure EB approach with right turn lane, through lane and separate right turn lane on Farmland Ave from HS driveway to G Street	Yes	NA	No	No
5				Signalize Intersection and Overlap phasing for EB Farmland Right turn with NB left turn.	Yes	NA	No	87.5% of cost reimbursed
6	Long northbound queue on G Street	PP	C+ Project	Construct extended northbound left turn lane on G Street (850 feet)	Yes	No	No	No

Table 3.15-4
Traffic Mitigation Table (Cont.)

	Impact	Condition		Description of Mitigation	Method To Implement Mitigation Measure: Improvement or Payment of Fees			Reimbursable Or Credit for Improvement
		Peak Hour vs. Peak Period *	Project or Cumulative *		Improvement by District	Impact Fees paid by District	Other Fee	
Bellevue Road / Barclay Avenue Intersection								
7	"Above Capacity" conditions	PP	Project	Construct a separate SB right turn lane, a SB left, and SB through	NA - Built by Paseo	Yes	No	NA
8				Construct extended EB left turn lane on Bellevue Road (925 feet).	NA - Built by Crosswinds	Yes	No	NA
9				Restripe center SB lane from "through" to a combination SB left and through, and modify signal related improvements to provide for this change.	No	Yes	No	No
"G" Street / Bellevue Road								
11	"Above Capacity" Conditions	PP	Project	Construct 2nd NB and SB lanes on G Street	NA - Built by Others	Yes	No	NA
13				Construct NB dual left turn lanes.	NA - Built by Others	Yes	No	NA
Farmland Avenue / HS Access								
15	Long westbound Queue on Farmland Ave	PP	Project	Construct WB Farmland between High School driveway and G Street with separate left turn lane and though lanes	**Yes**	No	No	North side of centerline reimbursable from adjoining property owners

Table 3.15-4
Traffic Mitigation Table (Cont.)

	Impact	Condition		Description of Mitigation	Method To Implement Mitigation Measure: Improvement or Payment of Fees			Reimbursable Or Credit for Improvement
		Peak Hour vs. Peak Period *	Project or Cumulative *		Improvement by District	Impact Fees paid by District	Other Fee	
G Street Frontage								
16	Cumulative traffic impacts city streets	PH	C	Improve G Street frontage to ½ ultimate 6 lane Arterial section	Yes	No	No	Credit for asphalt section more than collector road standard
Farmland Ave Frontage								
17	Cumulative traffic impacts city streets	PH	C	Improve Farmland Frontage to full ultimate collector section except parkstrip and sidewalk on north side.	Yes	No	No	North side of centerline reimbursable from adjoining developer
Barclay Ave Frontage								
18	Cumulative traffic impacts city streets	PH	C	Improve Barclay Avenue to full ultimate collector frontage except parkstrip and sidewalk on west side.	Yes	No	No	West side of centerline are reimbursable from adjoining developer
Bridges of Fahrens Creek at Barclay and Farmland								
19	Cumulative traffic impacts to City Streets	PH	C	Contribute to City a Fair-Share fee for cost to improve these bridges prior to awarding bid for Project.	No	No	Yes	No

* PP = Peak Period Impact; PH = Peak Hour Impact; EX + Project = project impact; C = cumulative impact; C + Project = cumulative impact created by project

SIGNIFICANCE THRESHOLDS

In determining the significance of impacts of utility/service systems, the State CEQA Guidelines use the following criteria:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

b) 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?

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

g) Comply with federal, state, and local statutes and regulations related to solid waste?

Impact #3.16-1 - Wastewater. The proposed project includes an on-site stormwater basin located at the southwest corner of the project site.

Conclusion: The State Water Resources Control Board has adopted National Pollutant Discharge Elimination System (NPDES) Water Discharge Requirements for Discharges of Storm Water Runoff. These measures were designed to optimize "on-site" stormwater pollution control programs for new development projects through source control measures (operational and/or structural practices that prevent or reduce pollutants at their source). The District would utilize the Manual, or its function equivalent, in project design and would comply with the permitting and regulatory requirements of the MPDES prior to the start of any construction.

Construction activities would involve soil disturbing activities such as grading. The soil disturbance would expose soil to wind- and water-generated erosion. In addition, the Project would involve the use of small amounts of hazardous chemicals such as pesticides and fertilizers for project landscaping and cleaning agents. However, because the Project site drains to the campus drainage system, and eventually into the City's wastewater facility, discharges into surface waters would not occur. Compliance with provisions of the NPDES Permit would

ensure that appropriate practices are implemented at the Project site to prevent soil erosion and any potential discharge. The impact is ***less than significant***.

Mitigation Measures: None are required.

Impact #3.16-2 – Water Supply. The Project will require water from the City of Merced.

Conclusion: Prior to construction, the District will complete an agreement that includes a fair-share contribution to the City of Merced to obtain potable water from the City's water supply. Irrigation water will be provided by the Merced Irrigation District on a year-round basis. All on-site infrastructure improvements relative to the campus will be built by the District. The impact is ***less than significant***.

Mitigation Measures: None are required.

CHAPTER FOUR

EVALUATION OF ALTERNATIVES

CHAPTER FOUR - EVALUATION OF ALTERNATIVES

Introduction

The California Environmental Quality Act and the implementing State *CEQA Guidelines* require that alternatives to the proposed project be discussed in the EIR. The value of such discussion is to inform public decision-makers of the differential environmental impacts, which may be associated with each potential alternative, and to enable a reasoned judgment to be made as to which alternative to the proposed project may be environmentally superior. The *CEQA Guidelines Section 15126.6* (revised in 1998) provides the following description of what should be included in the alternatives discussion in an EIR:

15126.6 Consideration and Discussion of Alternatives to the Proposed Project

(a) **Alternatives to the Proposed Project.** 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. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.

(b) **Purpose.** Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

(c) **Selection of a range of reasonable alternatives.** The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly describe the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Additional information explaining the choice of alternatives may be included in the administrative record. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts.

(d) **Evaluation of alternatives.** The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects

of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.

(e) **"No project" alternative.**

(1) The specific alternative of "no project" shall also be evaluated along with its impact. The purpose of describing and analyzing a no project alternative is to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The no project alternative analysis is not the baseline for determining whether the proposed project's environmental impacts may be significant, unless it is identical to the existing environmental setting analysis, which does establish that baseline (see Section 15125).

(2) The "no project" analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, 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. If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

(3) A discussion of the "no project" alternative will usually proceed along one of two lines:

(A) When the project is the revision of an existing land use or regulatory plan, policy or ongoing operation, the "no project" alternative will be the continuation of the existing plan, policy or operation into the future. Typically this is a situation where other projects initiated under the existing plan will continue while the new plan is developed. Thus, the projected impacts of the proposed plan or alternative plans would be compared to the impacts that would occur under the existing plan.

(B) If the project is other than a land use or regulatory plan, for example a development project on identifiable property, the "no project" alternative is the circumstance under which the project does not proceed. Here the discussion would compare the environmental effects of the property remaining in its existing state against environmental effects, which would occur if the project were approved. If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this "no project" consequence should be discussed. In certain instances, the no project alternative means "no build" wherein the existing environmental setting is maintained. However, where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project's non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment.

(C) After defining the no project alternative using one of these approaches, the lead agency should proceed to analyze the impacts of the no project alternative by projecting what would reasonably be 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.

(f) **Rule of reason.** The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision-making.

(1) **Feasibility.** Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.

(2) **Alternative locations.**

(A) **Key question.** The key questions and first step in analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR.

(B) **None feasible.** If the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion, and should include the reasons in the EIR. For example, in some cases there may be no feasible alternative locations for a geothermal plant or mining project, which must be in close proximity to natural resources at a given location.

(C) **Limited new analysis required.** Where a previous document has sufficiently analyzed a range of reasonable alternative locations and environmental impacts for project with the same basic purpose, the lead agency should review the previous document. The EIR may rely on the previous document to help it assess the feasibility of potential project alternatives to the extent the circumstances remain substantially the same as they relate to the alternative.

(3) An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative.

CEQA requires that alternatives that have been considered but rejected by the Lead Agency be addressed in the EIR, at the beginning of the engineering and planning process.

The sections of this chapter that follow present a description of the alternatives considered and an analysis of the alternatives in the context of the State *CEQA Guidelines*. This EIR includes an evaluation of the No Project Alternative (which is required to be addressed), reduced project size and alternate location. Finally, this chapter presents an analysis of the comparative environmental superiority of the various alternatives, as required by *CEQA.*

Project objectives and site selection criteria can be found in Chapter 1, on Page 1-1, in this Draft EIR.

4.1 No Project Alternative

The *No Project* Alternative means that there would not be a new high school constructed at this location. In March 2005, a study prepared for the district by EIP Associates, a planning consultant firm based in several cities in California, was published, called, "*North Merced Area High School Site Suitability Study."* (Study) (refer to Appendix F for the full text).

In this study, it was stated that the district's goal is to maintain enrollment in the two existing high schools (*Merced* and *Golden Valley*), and future ones, between 1,800 and 2,000 students each. However, the district projected the 2005-2006 school year enrollment would be 2,611 for *Merced* and 2,400 for *Golden Valley*. Further, the district estimated their total high school population would be 11,434 in the year 2011 and 12,692 in 2013. This means that to reduce current and future school overcrowding - and the need to use temporary buildings - the district would need to construct at least three more high schools by 2011 and another by 2013 just to maintain an average enrollment of 2,100 at each of the six high schools.

Overall, the *No Project Alternative* completely fails to meet the objectives of the district to relieve current overcrowding in the existing two high schools, to locate schools closer to where the students live, and to provide more high school campuses for the growing high school population.

Significant differential impacts of this alternative would include:

- Increased air quality emissions due to longer vehicle trip-lengths for students who live in the rapidly developing north part of the City who now must travel to the existing high schools located in the south part of the City.

- More traffic related to the greater distance students will need to travel to attend an existing school located in the south part of the City.

- Possible loss of funding available for financing construction of the school.

4.2 Reduced Project Size

This alternative would involve a reduction in the student capacity of the project. With their application for this new school, the school district did not address the feasibility of a smaller sized campus in this location. Regardless of the scope of any reduction in the number of students to be served by the project, impacts from traffic in the vicinity of the project would temporarily be proportionately lower, but would likely occur elsewhere in the community and region.

As a variation in the definition of reduced project size, if smaller general education facilities were to be constructed, there would again be an increase in air emissions caused by the displaced students who would be traveling elsewhere to meet their educational needs.

As discussed above, the need for additional facilities for high school students will continue to grow as the population of Merced does and any benefits of a smaller campus on this site would be only temporary.

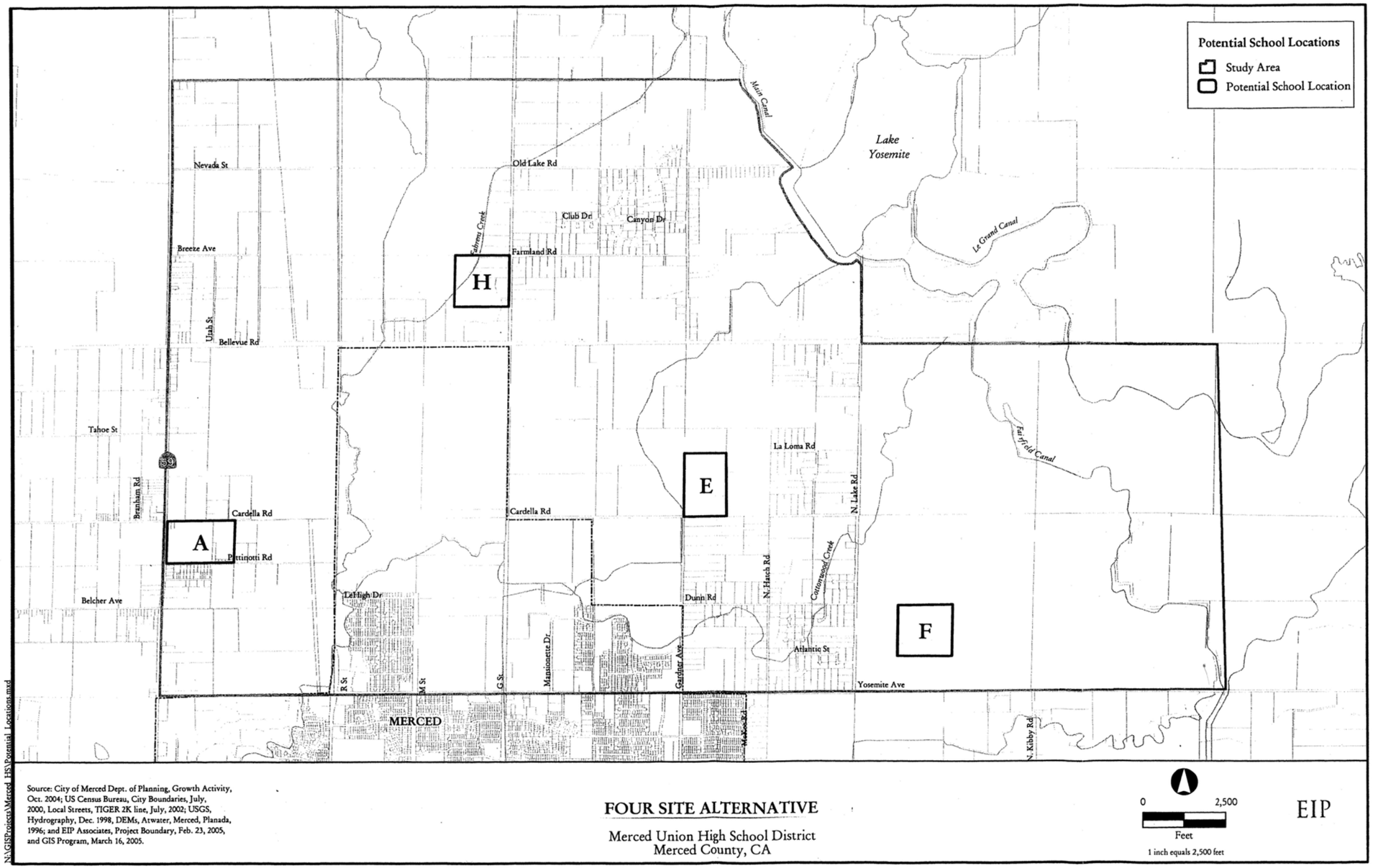
4.3 Alternate Sites

For the *Site Suitability Study* mentioned above, 4 possible sites in the north part of Merced were selected as alternative sites (see Figure 4–1), using the following criteria from the California Department of Education's School Site Selection and Approval Guide.

1. Safety
2. Location
3. Environment
4. Soils
5. Topography
6. Size and Shape
7. Accessibility
8. Public Services
9. Utilities
10. Cost
11. Availability
12. Public Acceptance

The MUHSD also has a set of guidelines for site selection, which includes the above criteria, plus;

1. General Plan consistency and balanced spatial location
2. Risk of hazards or hazardous material impacts (flooding, spills, emissions, etc.)
3. Physical feasibility to develop land (expansive soils, slopes less than 3 percent
4. Risk of impact to sensitive biological species and habitat
5. Availability of water and sewer lines
6. Economic feasibility of acquisition
7. Level of access
8. Site configuration



Quad Knopf	FOUR SITE ALTERNATIVE	Figure 4-1

In addition, the district evaluates how well a school would fit into the neighborhood, easement constraints (if any), the presence of residential buildings on the site, costs for removal of existing structures (if any), and the cost for clean up of the site.

Each of the possible alternative sites were evaluated on each of the criteria above (and more), given a rating of Desirable, Moderately Desirable, or Undesirable, and then given a total weighted score, based on order of importance and level of desirability. Since the District projects it will need four new high schools in the near future, the four highest scoring sites were selected for more consideration by the District. The Project Site was selected as the proposed first school site based on its central location, existing accessibility, feasibility of the site acquisition, and the District's size and access criteria as well as the access criteria. The District currently has an option on the proposed site, which would provide a central location at a relatively affordable price. The study concluded that the site was an "ideal" first site to be proposed for construction.

Although EIP Associates correctly claims this study was not intended to meet the requirements of CEQA, the criteria used for it is similar to that in CEQA and therefore is a useful supplement for the CEQA required comparison of *alternative sites* for an EIR.

The primary objective of the proposed project is the construction of a new high school to serve the ever-increasing need of the rapidly growing community of Merced and to reduce the current overcrowding in the existing campuses. The evaluation of alternatives in this EIR was limited to two alternative sites; one site located closer to the proposed project site (Site A) and a second site located at a greater distance from the proposed site (Site F).

ALTERNATIVE SITE A

Air Quality: Operational and construction emissions associated with alternative site A would be similar to the proposed project because the number of students in the District would remain the same and average daily trips would be similar. However, these impacts would likely be reduced because this location would serve an area where there is a significant increase in population.

Biological Resources: The impacts to biological resources would be similar to that of the project. An aerial wetlands assessment of the site revealed no wetland resources or associated biological species of significance on-site, making the site suitable for development

Noise: Noise levels at the alternative location would be similar to levels at the project site. Similar mitigation measures would be required to reduce construction and stadium noise levels to a less than significant level.

Traffic: The alternative site is located adjacent to Highway 59 and provides a very accessible location for prospective District students. However, the two-land highway is often occupied by trucks transporting potentially hazardous materials to and from the landfill. The materials transport issue, combined with the need for traffic signalization at Cardella Road and Highway

59, and high traffic volumes, present some safety and potential obstacles for site development. Traffic related impacts associated with Alternative A are greater than the project.

ALTERNATIVE SITE F

Air Quality: Air quality impacts related to Alternative Site F would be greater than the proposed project. The site is located on the eastern periphery of the study area requiring infrastructure improvements including extension roads. Traffic-related air quality impacts would be greater as prospected students would have to travel a greater distance to attend the school.

Biological Resources: The impacts to biological resources would be similar to that of the project. An aerial wetlands assessment of the site revealed no wetland resources or associated biological species of significance on-site, making the site suitable for development

Noise: Noise levels at the alternative location would be similar to levels at the project site. However, there are fewer sensitive receptors associated with Alternative Site F. Similar mitigation measures would still be required to reduce construction and stadium noise levels to a less than significant level. Noise-related impacts associated with alternative site F are similar to the proposed project

Traffic: Site F is located on the eastern periphery of the study area. Required infrastructure improvements including extension roads and provision of new traffic signals are not currently available. There is no guarantee that these components will be in place in the near term. Traffic-related impacts associated with alternative site F are greater than the project.

4.4 Comparative Analysis of Project Alternatives

Table 4.4-1 summarizes the environmental impacts associated with the project site, and the other alternatives considered above. Based on the analysis indicated above, the reduced project size alternative and the no project alternative are the environmentally superior alternatives. The No Project Alternative would reduce impacts to noise and biological resources; however traffic and air quality impacts will be greater due to increased travel distance for students to attend schools in other locations. The reduced school size alternative would have many of the same environmental impacts as the proposed project; however, as the number of classrooms would be fewer, traffic and noise impacts would be reduced. However, neither of these two alternatives fully achieves the basic objectives of the project.

Table 4.4-1
Environmental Impacts Associated with the Project Site

Impact	Air Quality	Biological Resources	Noise	Traffic
Project	---	---	---	---
No Project	More	Less	Less	More
Reduced Size	Same	Same	Less	Less
Alternative Site A	Same	Same	Same	More
Alternative Site F	More	Same	Same	More

CHAPTER FIVE

MITIGATION MONITORING AND REPORTING PROGRAM

CHAPTER FIVE – MITIGATION MONITORING AND REPORTING PROGRAM

Introduction

State and local agencies are required by Section 21081.6 of the California Public Resources Code to establish a mitigation monitoring and reporting program for all projects which are approved and which require CEQA processing.

Local agencies are given broad latitude in developing programs to meet the requirements of Public Resources Code Section 21081.6. The mitigation monitoring program outlined in this document is based upon guidance issued by the Governor's Office of Planning and Research.

In this instance, mitigation of the potentially significant environmental impacts attributable to the project and to project-permitted growth will be accomplished by the City in accordance with their construction plan review and site inspection activities.

The mitigation monitoring and reporting program for the proposed project corresponds to mitigation measures outlined in the project EIR. The program summarizes the environmental issues identified in the EIR, the mitigation measures required to reduce each potentially significant impact to less than significant, and the agency or agencies responsible for monitoring and reporting on the implementation of the mitigation measures. The time span or period of mitigated measure performance is also provided.

The environmental impacts of this project, such as loss of prime farm land, air quality, noise, and traffic congestion may not be mitigated to a level less than *potentially significant* even when the recommended mitigation measures are applied. There is no further discussion in this chapter of impacts that can not be addressed with mitigation measures, such as the loss of prime farmland. These impacts are fully discussed in Chapter 3 of this EIR.

5.1 The Program

Construction and operation of the Belleview High School will require approval by the City of Merced through the acquisition of a building permit, approval by the California Regional Water Quality Control Board; and an Authority to Construct permit from the San Joaquin Valley Air Pollution Control District. The mitigation measures contained herein shall be included as conditions of approval for each of these permits, to the extent permitted by law. The City of Merced shall ensure that all construction plans and project operations conform to the conditions of the mitigated project. Table 5-1 shall be attached to all permits as a condition of approval.

CEQA Guidelines (15097(c)(1)) state that: The public agency may choose whether its program will monitor mitigation, report on mitigation, or both. "Reporting" generally consists of a written compliance review that is presented to the decision making body or authorized staff person. A report may be required at various stages during project implementation or upon completion of the mitigation measure. "Monitoring" is generally an ongoing or periodic process of project oversight.

Table 5-1
Mitigation Monitoring and Reporting Program

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
Impact #3.1-1 - Create a new source of substantial light or glare which would adversely affect day or night time views in the area.	**Mitigation Measure #3.1-1:** Lighting will be designed to avoid direct lighting of off-site areas and to reduce associated glare to surrounding areas. A lighting plan will be developed by a registered illumination engineer, which demonstrates that the resultant lighting levels conform to the following standards: ▪ Off site lighting and glare will be limited to no more than 0.5 foot-candle illumination (0.5 lumen per square foot). Lighting on-site shall be limited to no more than 7 footcandle illumination, except directly within the stadium and athletic fields. ▪ All lighting fixtures on the perimeter of the project shall be outfitted with hoods and cut-off lenses so that the light source itself is not visible to the naked eye from neighboring properties or to drivers or pedestrians from neighboring streets. The developer shall submit a lighting plan, which demonstrates that the resultant lighting levels conform to this standard before issuance of a Building Use Permit. ▪ All yard, security and canopy lighting in excess of 150 watts shall be hooded or shielded so that it is not visible to the naked eye form adjacent properties.	Project architect/engineer	This measure shall be included in the District's construction plans and specifications. Monitoring shall be accomplished by the District by review of these documents prior to construction and site inspection following construction.	Prior to issuance of building permits for lighting and prior to occupancy.
Impact #3.3-1 - Construction Emissions - Particulate Matter.	**Mitigation Measure #3.3-1:** The Mandatory Control measures provided in Table 3.3-4 shall be implemented to reduce construction emissions. The following control measures shall	Construction Contractor/ Applicant	Monitoring shall be the responsibility of the SJVAPCD.	Ongoing during construction.

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	also be implemented to reduce particulate matter emissions: ▪ Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent. ▪ Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use. ▪ Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways. (For curtailment during periods of high ambient pollutant concentrations, the criteria should be set in terms of the Air Quality Index.)			

Table 3.3-4
Mandatory Control Measures for Construction, Excavation, Extraction, and Other Earthmoving Activities

A. Pre-Activity:

A1: Pre-water site sufficient to limit Visible Dust Emissions (VDE) to 20% opacity

A2: Phase work to reduce the amount of disturbed surface area at any one time.

B. During Active Operations:

B1: Apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20% opacity

B2: Construct and maintain wind barriers sufficient to limit VDE to 20% opacity. If utilizing wind barriers, control measure B1 above shall also be implemented.

B3: Apply water or chemical/organic stabilizers/suppressants to unpaved haul/access roads and unpaved vehicle/equipment traffic areas sufficient to limit VDE to 20% opacity and meet the conditions of a stabilized unpaved road surface.

C. Temporary Stabilization During Periods Of Inactivity:

C1: Restrict vehicular access to the area

C2: Apply water or chemical/organic stabilizers/suppressants, sufficient to comply with the conditions of a stabilized surface. If an area having 0.5 acres or more of disturbed surface area remains unused for seven or more days, the area must comply with the conditions for a stabilized surface area as defined below:

Stabilized Surface: any disturbed surface area or open bulk material storage pile that is resistant to wind blown fugitive dust emissions. A surface is considered to be stabilized if it meets at least one of the following conditions:

- A visible crust; or
- A threshold friction velocity (TFV) for disturbed surface areas corrected for non-erodible elements of 100 centimeters per second or greater; or
- A flat vegetative cover of at least 50 percent that is attached or rooted vegetation; or unattached vegetative debris lying on the surface with a predominant horizontal orientation that is not subject to movement by wind; or
- A standing vegetative cover of at least 30 percent that is attached or rooted vegetation with a predominant vertical orientation; or
- A standing vegetative cover that is attached or rooted vegetation with a predominant vertical orientation that is at least 10 percent and where the TFV is at least 43 centimeters per second when corrected for nonerodible elements; or
- A surface that is greater than or equal to 10 percent of non-erodible elements such as rocks, stones, or hard-packed clumps of soil.

D. Speed Limitations and Posting of Speed Limit Signs

D1: Limit the speed of vehicles traveling on uncontrolled unpaved access/haul roads within construction sites to a maximum of 15 miles per hour.

D2: Post speed limit signs that meet State and Federal Department of Transportation standards at each construction site's uncontrolled unpaved access/haul road entrance. At a minimum, speed limit signs shall also be posted at least every 500 feet and shall be readable in both directions of travel along uncontrolled unpaved access/haul roads.

E. Wind Generated Fugitive Dust Requirements

E1: Cease outdoor construction, excavation, extraction, and other earthmoving activities that disturb the soil whenever VDE exceeds 20% opacity. Indoor activities such as electrical, plumbing, dry wall installation, painting, and any other activity that does not cause any disturbances to the soil are not subject to this requirement.

E2: Continue operation of water trucks/devices when outdoor construction excavation, extraction, and other earthmoving activities cease, unless unsafe to do so.

Table 5-1
Mitigation Monitoring and Reporting Program (Continued)

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
Impact #3.3.2 – Construction Emissions - Gaseous Emissions.	**Mitigation Measures #3.3-2:** The following measures from the GAMAQI (January 2002) shall be implemented in order to reduce gaseous construction emissions: ▪ Use alternative fueled or catalyst equipped diesel construction equipment where feasible. ▪ Minimize idling time to a maximum of 10 minutes. ▪ Where feasible, replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable fossil fuel generator set). ▪ Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways.	Construction Contractor/ Applicant	Monitoring shall be the responsibility of the SJVAPCD.	Ongoing during construction and prior to occupancy for improvements.
Impact #3.3-3 - Operational Air Emissions.	**Mitigation Measure #3.3-3:** Require the following design features be implemented: ▪ Use energy efficient design including automated control system for heating/air conditioning and energy efficiency, utilize lighting controls and energy-efficient lighting in buildings and use light colored roof materials to reflect heat.	Construction Contractor/ District Inspector	The Districts construction inspector to enforce the provisions as set forth in the contractor agreement.	Ongoing during construction and prior to occupancy for improvements.

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	▪ Plant deciduous trees on the south and westerly facing sides of buildings. ▪ Provide low nitrogen oxide (NOx) emitting and/or high efficiency water heaters. ▪ Purchase low-emission, alternatively-fueled or electrical-driven maintenance vehicles and equipment. ▪ Promote pedestrian, bicycle and transit modes of travel through informational programs and provision of amenities such as transit shelters, secure bicycle parking and attractive pedestrian pathways. ▪ Designate an on-site Transportation Systems Management coordinator. ▪ Implement carpool/vanpool program, e.g., carpool ride-matching for employees, assistance with vanpool formation, provision of vanpool vehicles, student carpooling incentives, etc. ▪ Coordinate with the local transit operators to extend or expand service to the Project Area. ▪ Provide transit use incentives, provide transit alternatives information such as printed schedules and establish transit information kiosks at appropriate locations. ▪ Implement parking cash-out program for employees (non-driving employees receive			

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	transportation allowance equivalent to the value of subsidized parking). ▪ Provide showers and lockers for employees bicycling or walking to work.			
Impact #3.4-1a - Development Of The Project Would Have A Potentially Significant Adverse Impact On Nesting Raptors.	**Mitigation Measure #3.4-1a:** If construction would commence between March 1 and September 1, surveys should be conducted 30 days prior to construction of the project. The raptor nesting surveys shall include examination of all trees and shrubs within the area of influence of the proposed project. For the purposes of this document, the "area of influence" is within 1,000 feet of the project site. If nesting raptors are identified during the surveys on the project site, the dripline of the nest tree or shrub must be fenced with orange construction fencing and a 300-foot radius buffer around the nest tree or shrub must be fenced with bright orange construction fencing. This 300-foot buffer may be reduced in size if a qualified raptor biologist determines through monitoring that the nesting raptors are acclimated to people and disturbance, and otherwise would not be adversely affected by construction activities. At a minimum, however, the non-disturbance buffer shall be a radius of 100 feet around the nest tree or shrub. If the nest site is on an adjacent property, the portion of the buffer that occurs on the project site shall be fenced with orange construction fencing. When construction buffers are reduced in size, the raptor biologist shall monitor distress levels of the nesting birds while the birds nest and construction persists. If at any time the nesting raptors show levels of distress that could cause	District/Construction Contractor	Monitoring shall be the responsibility of the California Department of Fish and Game.	Prior to issuance of building permits and ongoing enforcement during construction.

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	nest failure or abandonment, the raptor biologist shall have the right to re-implement the full 300-foot buffer. Instances when the buffer could be reduced in size would be if the raptors were well acclimated to disturbance and/or if there were physical barriers between the nest site and the construction project that would reduce disturbance to the nesting raptors. No construction or earth-moving activity should occur within the non-disturbance buffer until it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by July 1st. Regardless, the resource agencies consider September 1st the end of the nesting period unless otherwise determined by a qualified raptor biologist. Once the raptors have completed the nesting cycle, that is the young have reached independence of the nest, no further regard for the nest site shall be required. No other compensatory mitigation is required. When implemented these mitigation measures would reduce impacts to nesting raptors to a level considered *less than significant*.			
Impact #3.4-1b - Development Of The Project Would Have A Potentially Significant Adverse Effect On The Swainson's Hawk.	**Mitigation Measure #3.4-1b - Mitigation for Swainson's Hawk:** CDFG has prepared guidelines for conducting surveys for Swainson's hawk entitled: Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (CDFG 2000). These survey recommendations were developed by the Swainson's Hawk Technical Advisory Committee (TAC) to	District/Construction Contractor	Monitoring shall be the responsibility of the California Department of Fish and Game.	Prior to issuance of building permits and ongoing enforcement during construction.

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	maximize the potential for locating nesting Swainson's hawks, and thus reduce the potential for nest failures as a result of project activities and/or disturbances. To meet the CDFG's recommendations for mitigation and protection of Swainson's hawks, surveys should be conducted for a half-mile radius around all project activities and should be completed for at least the two survey periods immediately prior to a project's initiation. The guidelines provide specific recommendations regarding the number of surveys based on the project is scheduled to begin and the time of year the surveys are conducted. If Swainson's hawks are found to be nesting on or in the immediate vicinity of the project site, consultation with CDFG and mitigation compensation would be required. At that time, the necessity of acquiring a Fish and Game Section 2081 management authorization should be determined. CDFG has prepared a *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California* (CDFG 1994) (hereinafter the Mitigation Guidelines) that prescribes avoidance and mitigation guidelines for impacts to Swainson's hawk nesting and foraging habitats. The Mitigation Guidelines require applicants to replace any impacted Swainson's hawk nesting and/or foraging habitat with other suitable Swainson's hawk nesting/foraging habitat. Because there is extensive foraging habitats for Swainson's hawks north and northeast of the project site in a local perspective, Merced Unified School District has determined that impacting potential agricultural foraging habitat from implementation of the project would not			

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	constitute a significant adverse impact pursuant to the CEQA. However, if Swainson's hawks nest on or within the area of influence of the project site (within 1,000 feet of the project site), impacts to nesting Swainson's hawks would be regarded as significant and adverse, and mitigation compensation would be required. Mitigation required would include a 1:1 impact to replacement ratio (58 acres of mitigation land) for all project disturbed habitat. The CDFG Mitigation Guidelines states that acceptable mitigation to offset impacts to Swainson's hawk foraging habitat can be met by Fee Title acquisition of Swainson's hawk habitat, or by acquisition of the right to record a conservation easement over lands that can be managed for this hawk species (hereinafter Habitat Management Lands). Any land acquired through Fee Title would have to be donated to a suitable conservation organization for management. In addition to providing Habitat Management Lands, the applicant would be assessed a management fee for the long-term management of the Habitat Management Lands by a suitable conservation organization. Implementation of the above mitigation measures would reduce impacts to Swainson's hawk to a level considered *less than significant.*			
Impact #3.4-1c - Development Of The Project Would Have A Potentially Significant Adverse Effect On The Western Burrowing Owl.	**Mitigation Measure #3.4-1c - Mitigation for Western Burrowing Owl:** <u>Mitigation Measure A.</u> A nesting survey shall be conducted for ground nesting raptors, such as western burrowing owl and northern harrier. The survey should be conducted in accordance with	District/Construction Contractor	Monitoring shall be the responsibility of the California Department of Fish and Game.	Prior to issuance of building permits and ongoing enforcement during construction.

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	the survey requirements detailed in the CDFG's October 17, 1995 *Staff Report on Burrowing Owl Mitigation.* Surveys shall be conducted in both the breeding season (April 15-July 15) and non-breeding season (December-January) to assess use of the project site by this species. If burrowing owls are present on the project site during the breeding season (peak of the breeding season is April 15 through July 15), and appear to be engaged in nesting behavior, a fenced 75 meter (276-foot) buffer would be required between the nest site(s) (i.e., the active burrow(s)) and any earth-moving activity or other disturbance on the project site. This 276-foot buffer could be removed once it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest). Typically, the young fledge by August 31. This date may be earlier than August 31, or later, and would have to be determined by a qualified raptor biologist. If northern harriers are identified on the project site, mitigation measures detailed above for nesting raptors (Mitigation Measure BIO-1) should be implemented. Additionally, if burrowing owls are identified nesting onsite or within the area of influence of the project site (within 1,000 feet of the project site), an upland mitigation area for burrowing owls shall be established either on or offsite. The mitigation site must be determined to be suitable by a qualified biologist. The size of the required mitigation site will be based on the number of burrowing owls observed on the project site with a minimum of 6.5 acres preserved per pair of owls or single owl observed using the site. The number of owls for			

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	which mitigation is required shall be based on the combined results of the protocol-level survey and the preconstruction surveys (i.e., if two pairs of owls are observed on the project site during the protocol-level survey, the mitigation requirement shall be 2 x 6.5 = 13 acres provided that no more than two pairs of owls are observed during the preconstruction survey; if three pairs of owls are observed during the preconstruction survey, then the mitigation requirement shall be 3 x 6.5 = 19.5 acres). A detailed mitigation and monitoring plan shall be developed for the burrowing owl mitigation area. This plan must be prepared in coordination with CDFG, and approved by this agency. Mitigation Measure B. Preconstruction surveys of the project site shall be conducted no more than 30 days prior to ground disturbing activities. If more than 30 days lapse between the time of the preconstruction survey and the start of ground-disturbing activities, another preconstruction survey must be completed. This process should be repeated until the habitat is converted to non-habitat (e.g., graded and developed). Mitigation Measure C. If burrowing owls must be passively relocated from the project site, as approved by CDFG, passive relocation shall not commence until October 1st and must be completed by February 1st. After passive relocation, the project site and vicinity will be monitored by a qualified biologist daily for one week and once per week for an additional two weeks to document where the relocated owls move and to ensure that the owls are not			

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	reoccupying the project site. A report detailing the results of the relocation and subsequent monitoring will be submitted to CDFG within two months of the relocation. Mitigation Measure D. If an upland mitigation site is designated for burrowing owls, it shall be approved as a suitable burrowing owl mitigation property by CDFG. The preserved area shall be preserved in perpetuity as wildlife habitat via recordation of a conservation easement that designates the California Department of Fish and Game (CDFG), or any other qualified conservation organization as the Grantee of the easement. Mitigation Measure E: If a conservation easement is established over burrowing owl habitat, an endowment to cover the management of the mitigation area and implementation of the mitigation and monitoring plan shall be provided by the project applicant to the Grantee of the Conservation Easement within six months of breaking ground on the project site. Implementation of the mitigation measures above would reduce impacts to western burrowing owl to a level considered ***less than significant***.			
Impact #3.4-1d - Development Of The Project Would Have A Potentially Significant Adverse Effect On Common And Special-Status Nesting Birds.	**Mitigation Measure #3.4-1d - Mitigation for Common and Special-Status Nesting Birds:** In order to avoid impacts to common and special-status nesting birds protected pursuant to the Migratory Bird Treat Act and California Department of Fish and Game Codes §3503, §3503.5, and §3800, a nesting survey should be	District/Construction Contractor	Monitoring shall be the responsibility of the California Department of Fish and Game.	Prior to issuance of building permits and ongoing enforcement during construction.

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	conducted prior to commencing with construction work if construction work would commence between March 15th and August 31st. If special-status birds are identified nesting within the area of influence, a 100-foot non-disturbance radius around the nest must be fenced (this fencing requirement shall not replace or be constructed in lieu of fencing discussed above for impacts to nesting raptors). No construction or earth-moving activity shall occur within this 100-foot staked buffer until it is determined by a qualified ornithologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by July 1st. This date may be earlier or later, and would have to be determined by a qualified ornithologist. Similarly, the qualified ornithologist could modify the size of the buffer based upon site conditions and the bird's apparent acclimation to human activities. If common (that is, not special-status) passerine birds (that is, perching birds such as northern mockingbirds) are identified nesting in any tree or shrub proposed for removal, tree removal would have to be postponed until it is determined by a qualified ornithologist that the young have fledged and have attained sufficient flight skills to leave the project site. Typically, most passerine birds can be expected to complete nesting by July 1st, with young attaining sufficient flight skills by this date that are sufficient for young to avoid project construction zones. Unless otherwise prescribed for special-status bird species, upon completion of nesting no further protection or mitigation measures would be warranted for nesting birds.			

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
Impact #3.5-1 – Potential disruption to significant historical or archeological resources.	**Mitigation Measure #3.5-1:** In the event of accidental discovery of human remains or items of historical or archaeological significance, the guidelines set forth in Section 15064.5 of CEQA require that the project be halted immediately, an archaeologist and the City called to the site to investigate further.	Construction contractor and District's construction inspector	The construction contractor and/or inspector to notify the Center for Archaeological Research at California State University, Bakersfield if any cultural resources are found. The Native American Heritage Commission shall be notified if human remains are found.	Ongoing during construction.
Impact #3.6-1 - Strong ground shaking.	**Mitigation Measure #3.6-1**. ▪ The project will be designed in compliance with Title 24 of the Uniform Building Code, Earthquake Requirements for Seismic Zone three and will be inspected by City building inspectors during the construction phase. ▪ The project will be designed by an engineer to resist any seismic-related impacts. ▪ The project will be designed for the appropriate soil type by an engineer to resist spreading, subsidence, or collapse.	District	District	Prior to construction.
Impact #3.6-3 - Result in substantial soil degradation or contamination.	**Mitigation Measure #3.6-3:** To reduce soil contamination from construction equipment, the following measures will be implemented: 1. All maintenance and refueling of construction equipment will be conducted at a pre-approved location on site. All used oil and other contaminants will be collected and disposed of properly.	Construction Contractor and Districts Construction Inspector	Specific measures to be incorporated into construction documents and enforced by District's Construction Inspector.	Ongoing during construction.

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	2. All equipment will be regularly and properly maintained to reduce leakage of fuel, oil, and other potential soil contaminants. 3. Any soil that is contaminated by fuel spills, oil spills, or spills of other potential soil contaminants will be removed from the site and disposed of at a suitable toxic waste facility.			
Impact # 3.7-1 - Presence of Toxic and Hazardous Substances.	**Mitigation Measure #3.7-1:** The District will complete a PEA form for submittal to the DTSC for evaluation. Should the PEA report determine the Project Site contains residue of organo-chlorine pesticides or other hazardous materials; the District is required to follow DTSC cleanup guidelines and implement the last step of the DTSC Three-Step Process, the Response Action, described below: ▪ The District shall amend the existing Environmental Oversight Agreement (EOA) to a Voluntary Cleanup Agreement (VCA), or School Cleanup Agreement (SCA). ▪ The District shall then be required to conduct a Supplemental Site Investigation, Removal Action Work Plan, Remedial Investigation, Feasibility Study or Remedial Action Plan following DTSC guidelines.	District	District	Prior to issuance of building permits.
Impact # 3.7-2 - Proximity to High-Voltage Transmission Line.	**Mitigation Measure # 3.7-2:** The 70 kV transmission lines and poles located on the west side of G Street adjacent to the proposed project	PG&E	District	Prior to issuance of building permits.

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	site will be relocated to the east side of G Street in the City of Merced's right-of-way.			
Impact #3.8-1 – Flooding of the project site.	**Mitigation Measure #3.8-1:** The elevation of the Project Site will be increased using fill to reduce the potential of site flooding. The amount of fill required and other site-specific requirements that will be implemented are provided in the Yosemite Lake Dam Failure Analysis (Appendix G). The Project site will be graded and raised approximately 3.5 feet to meet flood inundation levels. The building foundation pads and campus quad area will be elevated 1.5 feet above the inundation elevations. A licensed surveyor shall be retained to adjust the elevations reported to 1988 NAVD (*North American Vertical Datum* of 1988) and verify elevations and fill height.	District	District	Prior to issuance of building permits and during construction.
Impact #3.9-1 – Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.	**Mitigation Measure #3.9-1:** The MUHSD will apply for approval for a General Plan Amendment, a Site Utilization Plan (SUP) Revision, a Rezoning and encroachment permits for any work done in the rights-of-way (road work).	District	District	Prior to issuance of building permits.
Impact #3.11-2 - Construction Noise.	**Mitigation Measures #3.11-2:** The operation of noise producing equipment used during construction shall be restricted to the hours from 7:00 a.m. to 7:00 pm., Monday through Friday, and 9:00 a.m. to 6:00 p.m. on Saturday and Sunday. Effective mufflers shall be fitted to gas- and diesel-powered equipment.	Construction contractor/ inspector for the project	The construction contractor/inspector shall insure that work is done during non-restricted hours and mufflers are fitted on gas- and diesel-powered equipment.	Ongoing during construction.

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
Impact #3.11-3 – Stadium Noise.	**Mitigation Measure #3.11.3 Stadium Noise (a, b, d):** The District shall establish procedures for the installation and operation of the public address systems. Specific measures shall include location and direction of loudspeakers and establishment of maximum volume levels in compliance with the daytime 65dB CNEL at adjacent residential properties. The District shall set 10:00 p.m. as the targeted time to end all football games and all other outdoor stadium events that attract large numbers of spectators.	District	District	Ongoing.
Impact #3.15-1 - Increase in Traffic.	**Mitigation Measure #3.15-1:** Traffic mitigation measures are outlined in Table 3.15-4. In addition to the District's improvements, additional roadway infrastructure will be necessary as the Bellevue Ranch Master Development Phasing Plan progresses. The District will pay it's approximately $1.53 million in local transportation impact fees and regional transportation impact fees. Traffic impact fees were calculated using the city's Institutional Land Use impact fee schedule ($6,174 per 1,000 sq. ft. of building space) and the Regional Transportation impact fee schedule ($1,900 per 1,000 sq. ft. of building space) for a total of $8,074 per 1,000 sq. ft. The proposed project includes approximately 190,000 sq. ft. for a total impact fee of $1,534,060. **Participation in local offsite improvements.** Regarding construction of the bridges on Farmland and Barclay, MUHSD has proposed that the District will pay a proportionate share of bridge construction costs based on a 24-hou contribution of traffic flows utilizing the bridges	District/Caltrans	District/Caltrans	Prior to occupancy.

Impact	Mitigation Measures	Implementation Responsibility	Monitoring/Reporting Responsibility	Time Span
	at full build-out of the BRMDP area. The school's 24-hour contribution of traffic flows is estimated to be 10%. **State Highway Improvements.** There is currently no adopted mitigation fee mechanism developed by the City of Merced for SR59 improvement participation.			

Table 3.15-4
Traffic Mitigation Table

	Impact	Condition		Description of Mitigation	Method To Implement Mitigation Measure: Improvement or Payment of Fees			Reimbursable Or Credit for Improvement
		Peak Hour vs. Peak Period *	Project or Cumulative *		Improvement by District	Impact Fees paid by District	Other Fee	
"G" Street / Yosemite Avenue								
1	Level of Service E	PH	Project	Add lanes on G Street	No	Yes	No	NA
"G" Street / Farmland								
2	Level of Service on WB Farmland Approach is LOS F	PH	Project	None – not significant itself due to (a) small volume; (b) presence of alternate road; (c) only one approach of intersection is substandard.	No	No	No	NA
"G" Street / Farmland Avenue Intersection								
4.	"Above Capacity" Conditions	PP	Project	Configure EB approach with right turn lane, through lane and separate right turn lane on Farmland Ave from HS driveway to G Street	Yes	NA	No	No
5				Signalize Intersection and Overlap phasing for EB Farmland Right turn with NB left turn.	Yes	NA	No	87.5% of cost reimbursed
6	Long northbound queue on G Street	PP	C+ Project	Construct extended northbound left turn lane on G Street (850 feet)	Yes	No	No	No

Table 3.15-4
Traffic Mitigation Table (Cont.)

	Impact	Condition		Description of Mitigation	Method To Implement Mitigation Measure: Improvement or Payment of Fees			Reimbursable Or Credit for Improvement
		Peak Hour vs. Peak Period *	Project or Cumulative *		Improvement by District	Impact Fees paid by District	Other Fee	
Bellevue Road / Barclay Avenue Intersection								
7	"Above Capacity" conditions	PP	Project	Construct a separate SB right turn lane, a SB left, and SB through	NA - Built by Paseo	Yes	No	NA
8				Construct extended EB left turn lane on Bellevue Road (925 feet).	NA - Built by Crosswinds	Yes	No	NA
9				Restripe center SB lane from "through" to a combination SB left and through, and modify signal related improvements to provide for this change.	No	Yes	No	No
"G" Street / Bellevue Road								
11	"Above Capacity" Conditions	PP	Project	Construct 2nd NB and SB lanes on G Street	NA - Built by Others	Yes	No	NA
13				Construct NB dual left turn lanes.	NA - Built by Others	Yes	No	NA
Farmland Avenue / HS Access								
15	Long westbound Queue on Farmland Ave	PP	Project	Construct WB Farmland between High School driveway and G Street with separate left turn lane and though lanes	***Yes***	No	No	North side of centerline reimbursable from adjoining property owners

Table 3.15-4
Traffic Mitigation Table (Cont.)

	Impact	Condition		Description of Mitigation	Method To Implement Mitigation Measure: Improvement or Payment of Fees			Reimbursable Or Credit for Improvement
		Peak Hour vs. Peak Period *	Project or Cumulative *		Improvement by District	Impact Fees paid by District	Other Fee	
G Street Frontage								
16	Cumulative traffic impacts city streets	PH	C	Improve G Street frontage to ½ ultimate 6 lane Arterial section	Yes	No	No	Credit for asphalt section more than collector road standard
Farmland Ave Frontage								
17	Cumulative traffic impacts city streets	PH	C	Improve Farmland Frontage to full ultimate collector section except parkstrip and sidewalk on north side.	Yes	No	No	North side of centerline reimbursable from adjoining developer
Barclay Ave Frontage								
18	Cumulative traffic impacts city streets	PH	C	Improve Barclay Avenue to full ultimate collector frontage except parkstrip and sidewalk on west side.	Yes	No	No	West side of centerline are reimbursable from adjoining developer
Bridges of Fahrens Creek at Barclay and Farmland								
19	Cumulative traffic impacts to City Streets	PH	C	Contribute to City a Fair-Share fee for cost to improve these bridges prior to awarding bid for Project.	No	No	Yes	No

* PP = Peak Period Impact; PH = Peak Hour Impact; EX + Project = project impact; C = cumulative impact; C + Project = cumulative impact created by project

In addition to the mitigation measures that are required specifically for the Bellevue High School project, there are mitigation measures that were developed for the Bellevue Ranch project that apply and must be implemented. These additional measures are provided in Table 5-2 and must be implemented and monitored by the District.

Table 5-2
Mitigation Measures for Bellevue Ranch
That Must be Implemented for the Bellevue High School Project

MM 4.2.1	The project applicant, in cooperation with adjacent land owners, shall provide interim buffers between future urbanized areas and existing agricultural uses that use pesticides, herbicides, or create dust and/or odors. Width and location of buffers shall be determined prior to approval of tentative maps, and shall be maintained until the project applicant has demonstrated that adjacent agriculture uses have ceased.
MM 4.5.1	Prior to the approval of building permits, the City shall require a detailed geotechnical report to be prepared by a California registered geotechnical engineer for each project.
MM 4.5.2	The City shall require the recommendations contained in the geotechnical report be incorporated into the design prior to approval of building permits.
MM 4.5.3	During construction, the geotechnical engineer shall provide inspection to ensure that recommendations and plans are properly implemented.
MM 4.7.4	A comprehensive plan to prevent erosion, siltation, and contamination of storm water during construction will be required for any development proposal within the Bellevue Ranch project area prior to approval of the improvement plans.
MM 4.9.1	Prior to the approval of a tentative map, the project applicant shall submit to the City of Merced Public Works Department detailed water supply and delivery plans for review and approval.
MM 4.9.2	The following two water conservation measures shall be implemented as required by state law – all buildings shall include low-flow fixtures and insulation of hot water lines in water recirculation systems.
MM 4.9.3	Prior to the approval of a tentative map, the project applicant will submit to the City Planning Department for review and approval general landscaping plans (as specified by the City's CUP submittal requirements).
MM 4.9.4	The project applicant, as approved by the City Public Works Department and Fire Department, will demonstrate that the water system proposed for the project is designed to meet the projected water capacity and fire flow requirements as well as all City specifications, prior to the approval of the first final map.

Table 5-2
Mitigation Measures for Bellevue Ranch
That Must be Implemented for the Bellevue High School Project (Continued)

MM 4.9.5	Prior to the approval of a tentative map, the project applicant will submit to the City Public Works Department detailed wastewater service plans for review and approval.
MM 4.9.6	Prior to the approval of a tentative map, the project applicant will demonstrate to the City that they have coordinated with Pacific Gas and Electric regarding the location and phases of natural gas and electrical facilities to serve the area.
MM 4.9.7	Prior to the issuance of building permits, the project applicant shall demonstrate to the City that their architect(s) have consulted with Pacific Gas and Electric regarding the incorporation of energy conservation techniques into building and landscape design.
MM 4.9.8	Prior to the approval of a tentative map, the project applicant will demonstrate to the City that they have coordinated with Pacific Bell regarding the extension, location, and phasing of telecommunication facilities to serve the project.
MM 4.9.9	The project applicant shall pay all Cost Revenue Impact System fees, or other applicable program fees as defined by the City, which are intended to cover all Police Department costs.
MM 4.9.10	Developers associated with Bellevue Ranch shall meet with the Merced Police Department prior to issuance of building permits. Specific security mitigation, as agreed between the Department and the developer, shall be incorporated into the construction plans.
MM 4.9.12	Payment of Cost Revenue Impact System fees or other applicable fees as determined by the City of Merced.
MM 4.9.13	Construction of exterior and interior water lines, fire hydrants, and provision of sufficient water pressure shall be determined by the Merced Fire Department.
MM 4.11.1	To ensure that construction mitigation is utilized, final approval shall not be granted to any development until the developer or contractor submits a satisfactory construction mitigation plan.
MM 4.11.2	As a condition of project approval, the project applicant shall coordinate with the City to implement a Transportation Demand Program.
MM 4.11.3	Employers within the Master Plan area shall coordinate with the City to implement a strong Transportation Demand Management program for all employment generating use.

Table 5-2
Mitigation Measures for Bellevue Ranch
That Must be Implemented for the Bellevue High School Project (Continued)

MM 4.11.4	Project design shall be reviewed by the City Planning Department prior to tentative map approvals to encourage telecommuting.
MM 4.11.5	Project design shall be reviewed by the City Planning Department prior to approval of the Master Development Plan to encourage the provision of park-and-ride amenities within the project.
MM 4.12.1	For the year 2010 with the project scenario noise environment, 6 to 12 foot sound walls, earth berms, or other acoustical shielding would need to be constructed to meet the City's recommended outdoor noise goal of DNL 65 db. A detailed noise study should be performed along impacted roadway segments to corroborate the actual noise environment and the required acoustical shielding.
MM 4.12.3	Trucks used for the development of Bellevue Ranch will be required to use the City's designated truck routes.
MM 4.12.4	All construction activity shall be conducted in accordance with City of Merced Standards for times of operations.

CHAPTER SIX

CUMULATIVE IMPACTS

CHAPTER SIX - CUMULATIVE IMPACTS

Introduction

The *California Environmental Quality Act Guidelines* require that all environmental impact reports contain an analysis of cumulative impacts for the project. An EIR must discuss the "cumulative impacts" of a project when its incremental effect will be cumulatively considerable. Section 15355 defines cumulative impacts as *"two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts."* A cumulative impact *"consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts"* [Section 15130(a)(1)]. The discussions of cumulative impacts *"shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone"* [Section 15350(b)].

The Guidelines provide further direction regarding cumulative impacts analysis. They state that the *"Lead agencies shall define the geographic scope of the area affected by the cumulative effect and provide a reasonable explanation for the geographic limitation used"* [Section 15130(b)(1)(B)(3)]. The cumulative impact analysis *"shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects"* [Section 15130(b)(3)]. With some projects, *"the only feasible mitigation for cumulative impacts may involve the adoption of ordinances or regulations rather than the imposition of conditions on a project-by-project basis"* [Section 15130(c)]. Section 15130(a)(3) states also that an EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable, and thus not significant, if a project is required to implement or fund its fair share of a mitigation measure(s) designed to alleviate the cumulative impact.

The geographic scope of the area analyzed for cumulative effects is the area of the proposed project and the area of other approved, pending projects that occur in 10 specified areas (Table 6-1 and Figure 6-1). One of these approved projects is the Belleview Ranch Master Development, which encompass Areas 2, 5, 8 and 9. The Draft and Final EIR for the Bellevue Ranch Master Development Plan dated September 1993 and February 1995 respectively were reviewed and are hereby incorporated by reference. The projects within the 10 specified areas consist primarily of residential developments that, taken as a whole, are contiguous to and completely surround the Bellevue High School project. These 10 areas cover approximately 9 square miles (Figure 6-1) and are projected to add approximately 5,400 single and multi- family residences to the area by the year 2010. Other developments including schools, golf courses, parks, and other facilities (City of Merced 1997) will be built in this area.

The following sections describe the cumulative effects of the Bellevue High School project and the other pending projects. The data supporting the cumulative impact analyses is primarily contained in other sections and appendices of this EIR.

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LOCATIONS OF PROPOSED PROJECT AND PENDING PROJECTS

Figure 6 - 1

Table 6-1
Approved Pending Projects

Area	North – South boundaries	East-West Boundaries
1	Bellevue to Old Lake Rd	SR 59 to D Street
2	Bellevue to Old Lake Rd	R Street to G Street
3	Bellevue Road to Old Lake Road	G Street to Gardner Avenue
4	Cardella Ave to Bellevue Road	SR 59 to R Street
5	Cardella Ave to Bellevue Road	R Street to G Street
6	Cardella Avenue to Bellevue Road	G Street to Gardner Ave
7	Yosemite Blvd to Cardella Ave	SR 59 to R Street
8	Yosemite Blvd to Cardella Ave	SR Street to M Street
9	Yosemite Blvd to Cardella Ave	M Street to G Street
10	Yosemite Blvd to Cardella Ave	G Street to Gardner Ave

Cumulative Impacts

AESTHETICS

Significant cumulative visual resources impacts would occur if the project and other approved, pending projects result in adverse changes to the visual quality or character of the area, if elements are in stark contrast with the project setting, or if project elements cause a loss of viewpoints or are inconsistent with applicable City of Merced's goals and policies. The greatest source of aesthetic cumulative impacts is the transformation of rural farmland into residential development resulting from this and other approved pending projects. The City's Land Use Element of the General Plan emphasizes that the visual character of the community shall be maintained and enhanced through the application of standards for landscaping, setbacks, protection of existing creeks, incorporation of open space elements, and incorporation of development guidelines to control land use. The proposed project and other approved pending projects will change the appearance and general character of the area. This change in land use has been appropriately planned for by the City and incorporates measures to ensure aesthetic appeal. None-the-less, the conversion of rural farmland to an urban setting represents a ***cumulative, significant, and unavoidable impact***.

The project, and proposed pending projects will increase light and glare in the surrounding area. While the impacts from light and glare are reduced to less than significant for this project, with use of implementation of mitigating measures described in this EIR, there will be a ***cumulatively significant and unavoidable impact*** due to an increase in light and glare from multiple projects in the vicinity.

AGRICULTURAL RESOURCES

The Merced General Plan acknowledges that development and expansion of the City will inevitably convert agricultural land into non-agricultural land. The City encourages urban growth on vacant land within the existing city limits to reduce impacts associated with loss of farmland. The General Plan EIR states that the General Plan "will have an adverse, irreversible impact on agricultural land." Cumulative impacts associated with the conversion of the project

site's agricultural land, in combination with the urbanization of other agricultural lands of pending projects are considered to be a ***significant cumulative environmental impact***.

AIR QUALITY

The air quality effects associated with the proposed project will affect the ambient air quality within the San Joaquin Valley Air Basin. The air basin has geographic boundaries which encompass approximately 25,000 square miles of land, including portions of 8 counties. The air quality within the basin is affected by a wide range of human activities, including stationary sources of air emissions (e.g. industrial facilities and power plants), mobile sources (e.g., cars, trucks, and mobile equipment) and biogenic or natural sources (e.g., methane emissions from decomposition of organic materials, including sewage). The air basin is also affected by emissions generated by a wide range of urban and agricultural activities. The basin has been designated as severe non-attainment status for PM_{10} and ozone.

The lack of available quantitative data makes exact representative analysis of all cumulative sources of air emissions infeasible. The primary thresholds of significance for cumulative air quality impacts are defined by Ambient Air Quality Standards which provide a basis for measurement or the attainment status of the air basin. These ambient standards do not define which sector or sources contribute to air pollution (or how much), but nevertheless act to trigger the significance classification of cumulative impacts. All sources (point or non-point, permitted and unpermitted) of air emissions for which the air basin is not in attainment (e.g., PM_{10} and ozone precursors) contribute to the nonattainment condition.

Major contributing sources of PM_{10} emissions in the air basin (in descending order of contribution) are entrained roadway dust, farming operations, waste burning, and industrial processes. The main sources of NOx and ROG (Ozone precursors) emissions are vehicle and other mobile sources, solvent use, farming, petroleum storage and transfer, and waste burning. Dust (PM_{10}), NOx and reactive organic gas emissions from the project site contribute to criteria pollutant emissions generated throughout the San Joaquin Valley air basin, however the area of the basin is nearly 25,000 square miles and it covers all or portions of 8 counties. Table 6-2 summarizes the stationary source emissions for the Air Basin in tons per day.

Table 6-2
2004 Estimated Average Emissions,
San Joaquin Valley Air Basin

(All emissions are represented in Tons per Day and reflect the most current data provided to CARB)

STATIONARY SOURCES								
SUMMARY CATEGORY NAME	**TOG**	**ROG**	**CO**	**NOx**	**SOx**	**PM**	**PM_{10}**	**$PM_{2.5}$**
Fuel Combustion	36.9	10.1	50.4	116.8	13.5	7.0	6.5	6.5
Waste Disposal	237.4	3.6	0.0	0.1	0.1	0.2	0.0	0.0
Cleaning and Surface Coatings	22.5	18.7	-	0.0	0.0	0.1	0.1	0.1
Petroleum Production	70.0	40.4	0.3	0.4	0.5	0.0	0.0	0.0
Industrial Processes	15.8	13.9	3.0	21.6	7.0	27.5	17.0	10.1
Solvent Evaporation	68.9	63.5	-	-	-	-	-	-
Miscellaneous Processes	866.1	97.5	392.6	11.1	0.4	572.0	317.7	118.8
Mobile Sources	159.5	145.9	1290.8	342.3	5.6	15.5	15.2	12.6
Grand Total for San Joaquin Valley APCD	**1477.1**	**393.5**	**1737.2**	**492.3**	**27.0**	**622.3**	**356.5**	**148.1**

Since construction activities are temporary in nature, they are not considered cumulative impacts. Traffic emissions from this project, along with the nearby approved, pending projects will result in cumulative impacts to air quality. The Traffic Study (Appendix E) predicted increased traffic volumes from the proposed project and the approved or pending projects in the project area. The SJV air basin is in severe non-attainment over for PM10, NOx, and ROG. Since vehicle traffic is the major source of these three contaminants, any additional sources of PM10, NOx, and ROG produced or emitted in the SJV air basin contributes to the non-attainment status. The project and the approved, pending projects will contribute 67.3 tons per year of ROG, 68.9 tons per day of NOx, and 56.2 per year of PM_{10}. Therefore, this project represents a significant, cumulative impact to air quality.

The additional emissions that would result from the proposed project would be occurring in an air basin that has severe air quality problems and that currently exceeds the state/federal ambient air quality standards. The state/federal ambient standards are health-based thresholds, so the project would cumulatively contribute to the known adverse health effects associated with exceedances of the ambient air quality standards, and cumulatively contribute to the health effects associated with mobile-source Toxic Air Contaminants. Therefore the proposed project will create a significant, unavoidable and considerable, cumulative impact to air quality.

BIOLOGICAL RESOURCES

Summary

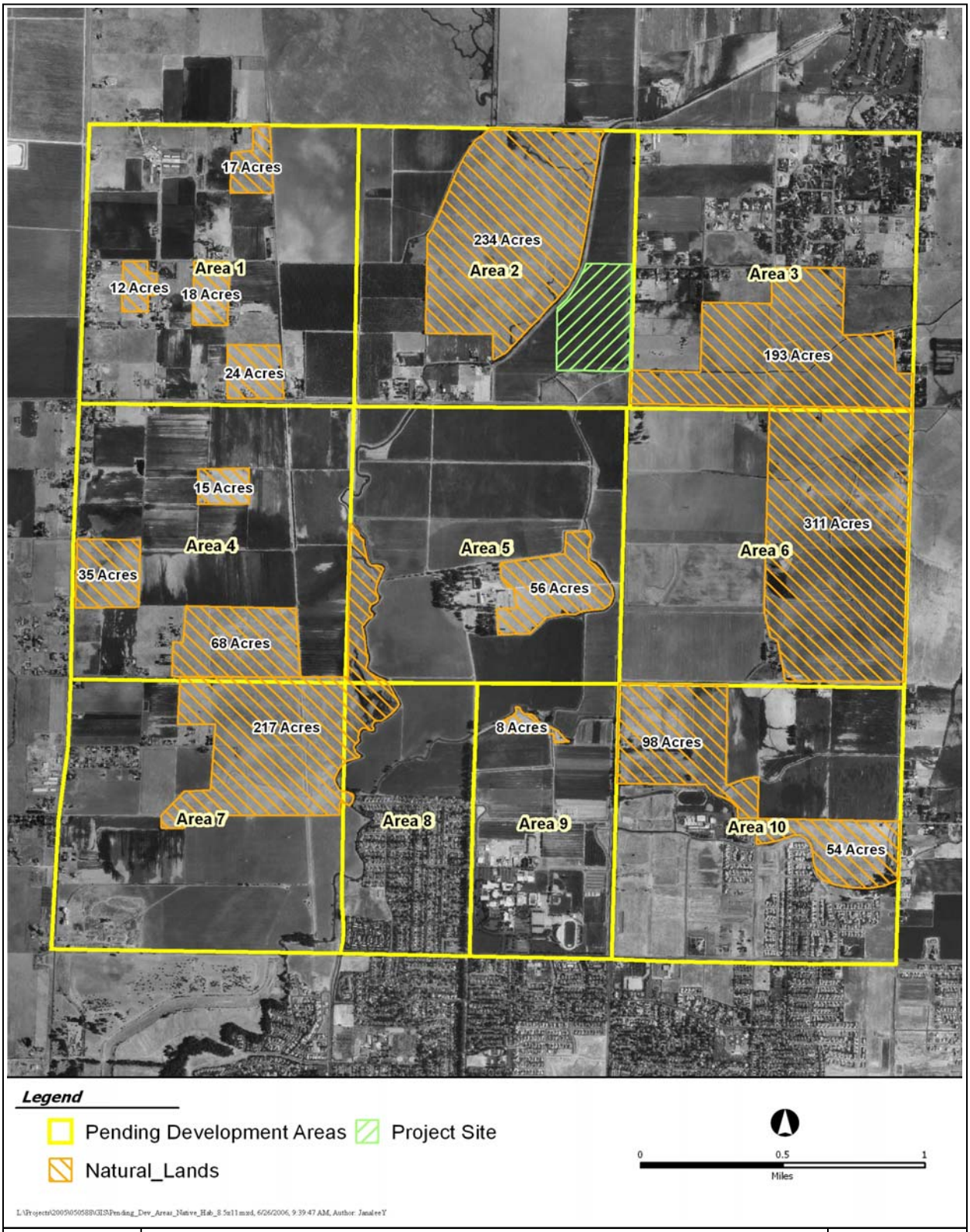
Cumulative impacts to biological resources resulting from this and pending projects include:

- loss of native habitats including grasslands, vernal pools, wetlands, and riparian habitats, which support sensitive biological resources;
- loss of agricultural lands which contribute to breeding and foraging habitat for special-status wildlife; and
- direct impacts to special-status species including mortalities, disruption of breeding and foraging behaviors, of resulting in reduction of population sizes and the elimination of populations.

Cumulative impacts from the Belleview High School project and pending projects will not significantly impact known movement corridors or the regional movements of wildlife. There will be no cumulative impacts to regional Habitat Conservation Plans or Natural Community Conservation Plans because none have been prepared for the area.

Cumulative loss of native habitats and wetlands

It appears that there will be approximately 1,360 acres of native habitat that will be lost through the development of this project and other pending projects (Figure 6-2). The native habitats in these areas are primarily grasslands which support vernal pools, although other wetlands and riparian habitats also occur. These habitats support a variety of special-status plants and wildlife. There are approximately 300 acres of vernal pool critical habitat that is located within two miles



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NATIVE HABITAT WITHIN THE PENDING PROJECTS AREA

Figure 6 - 2

of the pending development areas. Vernal Pool critical habitat exists in Project Areas 2, 3, 6, and 10 (Figure 6-3). There are a large number of wetlands of various types occurring in the pending projects area (Figure 6-4). Many of these wetlands are Jurisdictional Wetlands or Waters of the United States. Many of these wetlands support associated riparian habitats, although the majority of the riparian areas are disturbed and degraded. The loss of native habitats including upland grasslands, vernal pools and vernal pool critical habitat, other wetlands, and riparian habitat to development in this area will be ***cumulatively significant impact***.

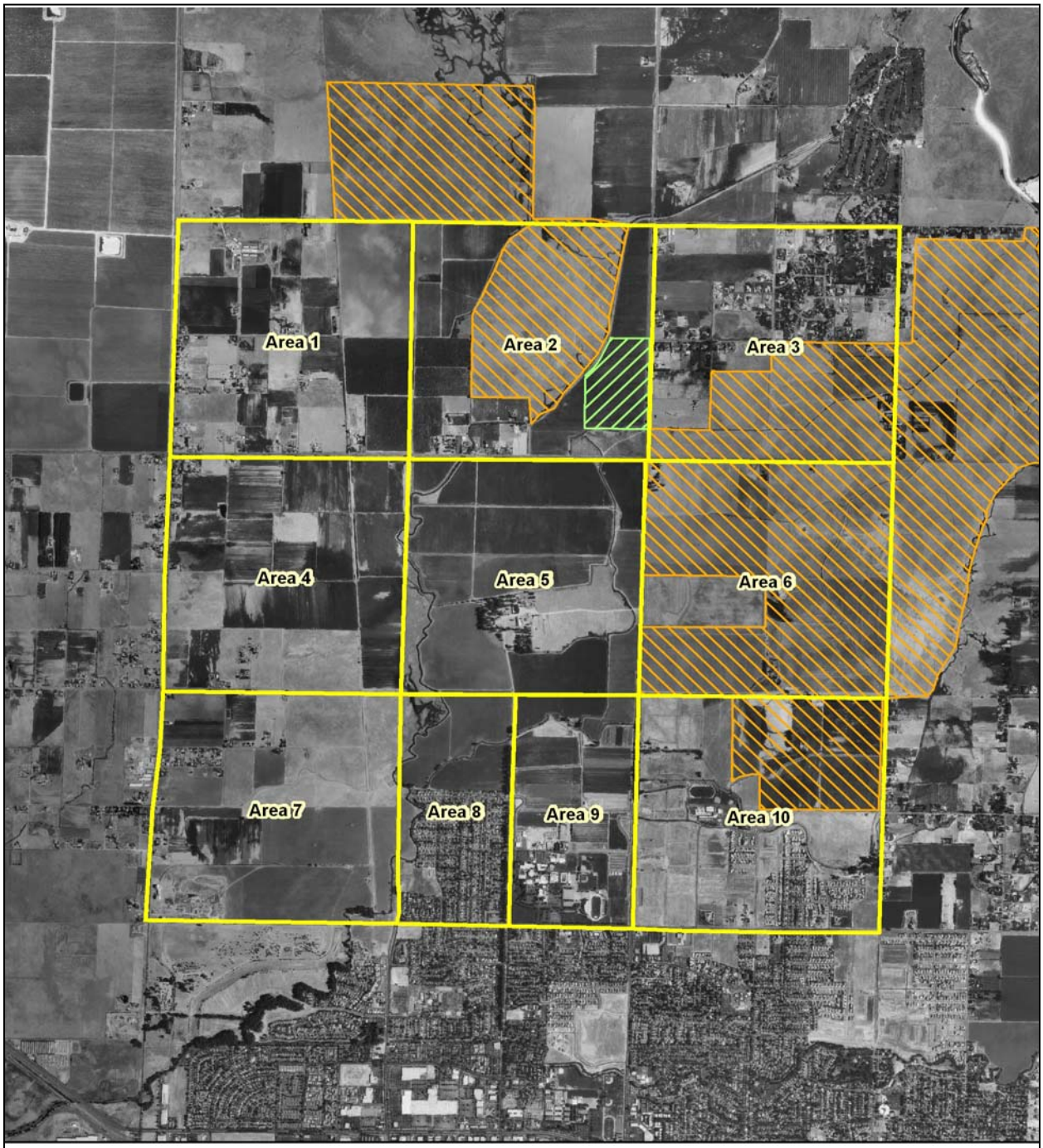
The Belleview High School project will not contribute to an on-site loss of native habitat because the entire site consists of repeatedly disked and cultivated farmland. The project may, however, result in the on-site loss of habitat that is suitable for basking, aestivation, and foraging by a number of special-status species. Project specific mitigation measures include avoidance measures and compensation for habitat loss, as warranted by specific site conditions and the presence of special-status species. The Belleview High School project will contribute to the loss of native habitat in the surrounding area or "pending projects area" by facilitating urban growth and residential development. The cumulative loss of habitat and its impact on special-status species is ***significant and unavoidable***.

Cumulative loss of habitat provided by agricultural lands

This project will result in the conversion of approximately 51 acres of farmland. Pending projects will result in the estimated loss of farmlands in excess of 2,500 acres (estimated from current aerial photographs, see Figure 6-2). These farmlands provide foraging and breeding habitat for a wide variety of wildlife, including a number of special-status species. The project site and pending projects are in an area that is designated in the Recovery Plan for Upland Species of the San Joaquin Valley (USFWS 1998) as important for maintaining "a contiguous band of natural lands and wildlife-compatible farmlands." Although the loss of some 2,500 acres of farmland is cumulatively significant and the Belleview High School project will contribute to that loss, there are no acceptable measures that will mitigate this loss. Accordingly the loss of farmland and its impact on special-status species is ***cumulatively significant, unavoidable, and unmitigatable***.

Cumulative direct impacts to special-status plants and wildlife

Significant and cumulative direct impacts will occur to a wide variety of special-status plants and wildlife which are known to occur within the area covered by approved, pending projects. These species include many plants that are vernal pool associates including Sanford's arrowhead, hairy orcutt grass, and Colusa grass (Figure 6-5). Other special-status plant species may also be present in the area and subject to loss (Figure 6-5, see Table 3.4-1). The vernal pool fairy shrimp is known from the approved, pending development area (Figure 6-5). Other special status wildlife species that are known from the vicinity and which likely occur within the development area include, California linderiella, midvalley fairy shrimp, molestan blister beetle, California tiger salamander, giant garter snake, burrowing owl, and others (Figure 6-5, see Table 3.4-1).



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VERNAL POOL CRITCAL HABITAT WITHIN THE PENDING PROJECTS AREA

Figure 6 - 3

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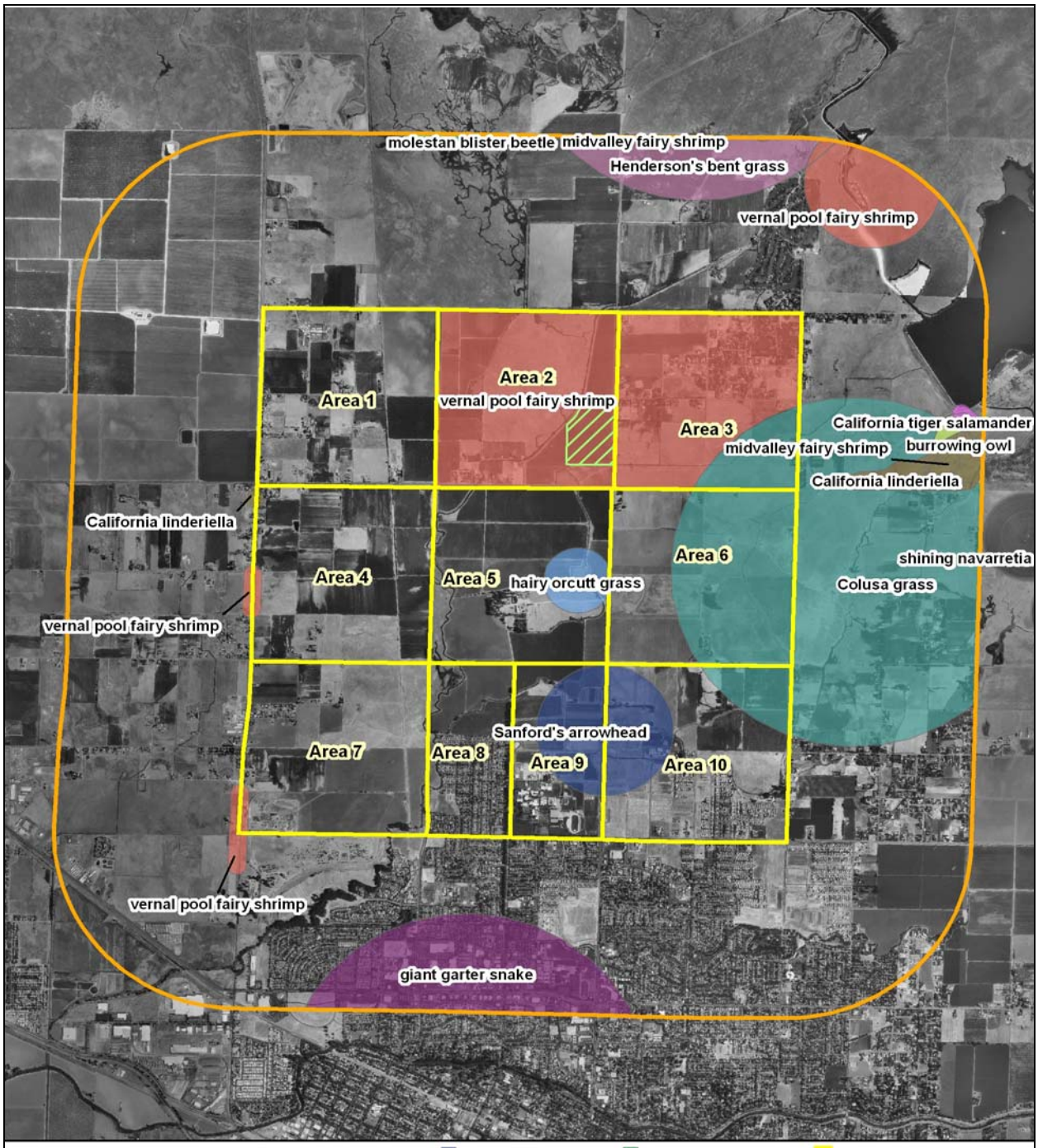
WETLANDS WITHIN THE PENDING PROJECTS AREA

Figure 6 - 4



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SENSITIVE BIOLOGICAL RESOURCES KNOWN TO OCCUR IN THE PENDING PROJECTS AREA

Figure 6 - 5

Direct impacts to these species are expected to include mortalities caused by land clearing and construction activities, disruption of breeding behaviors resulting in reproductive failure, and disruption of foraging behaviors. Together with the projected loss of habitat, this will result in a complete elimination of most special-status plant and wildlife species from the development area. Some species may not be completely eliminated, but will experience severe and un-recoverable declines in population numbers.

Although each individual project requires appropriate mitigation measures to reduce or avoid direct impacts to species and to compensate for habitat loss, there will be ***cumulative and significant*** losses to special-status species that are unavoidable. Even with the incorporated mitigation measures that will reduce project specific impacts to ***less than significant***, the Belleview High School project will contribute to the cumulative direct impacts to special-status species by facilitating development in adjacent areas,. Cumulative direct impacts to special-status species are unavoidable and un-mitigatable, even with the inclusion of project specific mitigation measures and compensation for loss of habitat.

CULTURAL RESOURCES

Disturbances to archaeological and historical resources from the proposed project, along with other approved, pending projects could occur. However, the mitigating measure described in this EIR would render the impacts to be less than cumulatively considerable and thus not significant. It is expected that other approved, pending projects would contain similar measures and cumulative impacts to cultural resources ***would not be significant***.

GEOLOGY AND SOILS

Significance criteria for geology and soils impacts are based on potential for damage caused by seismic or geologic hazards. Development of the property and development of other projects would affect to varying degrees geologic and soil-related hazards. However, both geologic and soil-related hazards are site-specific. Mitigating measures described in this EIR, would reduce the project's contribution to cumulative impacts to less than significant. Similarly, other approved, pending projects contain mitigation measures that would reduce those projects contribution to cumulative impacts to less than significant. Cumulative impacts from this and other approved projects are expected to be ***less than significant***.

HAZARDS AND HAZARDOUS MATERIALS

Regulatory standards and guidelines have been applied in determining the impacts caused by hazardous substances and wastes. Development of this and other approved/pending projects may result in the exposure to hazardous substances and hazardous wastes. Such activities would be subject to all applicable federal, state, and local regulations to minimize the potential risk to human health and the natural environment. Mitigating measures described in this EIR would reduce the project's contribution to cumulative impacts to ***less than significant***.

HYDROLOGY; GROUNDWATER IMPACTS

The Initial Study (Appendix A) concluded that the proposed project would have no, or less than significant, impacts to all significance thresholds of Hydrology and Water Resources. All wastes

from the project will be handled by the City. Storm water drainage from the site will be collected onsite, and storm water drainage created by the elevation of the project will enter into the City storm water drainage system. The District will comply with applicable requirements of the RWQCB. The implementation of these measures will result in the project contributing a ***less than significant*** level of impacts to any cumulative hydrologic impacts within the area containing other, approved projects.

The Belleview High School will result in an increase in water usage. However, water will be obtained from the City of Merced, which has an adequate water supply to accommodate not only this project, but other, approved projects, without affecting groundwater supplies or quality. Additionally, the City of Merced has contracted with the Merced Irrigation District to supply supplemental water. The cumulative groundwater impacts are ***not considered significant***.

LAND USE PLANNING

The Initial Study concluded that there would be no conflicts with existing Land Use Planning policies, regulations, general plans, specific plans, or habitat conservation plans. Accordingly, this project will not contribute to cumulative impacts. Similarly, other approved pending projects in the vicinity will not contribute to land use planning issues. Cumulative impacts on land use planning issues from all projects in the vicinity are ***less than significant***.

MINERAL RESOURCES

The Initial Study (Appendix A) concluded that the proposed project would have ***no significant impact*** to the loss of availability of a known mineral resource or the loss of availability of a locally-important mineral resource recovery site. Land in and around the City of Merced lacks substantial mineral deposits. The proposed project would not contribute to cumulative impacts to mineral resources.

NOISE

Although the greatest source of noise produced by the proposed Belleview High School will be from sporting events at the stadium, noise will also be produced by traffic associated with school operations. Construction noise is not considered to contribute to cumulative noise impacts because construction will be temporary in nature. The greatest cumulative source of noise in the project vicinity will be that produced by vehicle traffic in the project vicinity. The increase in ambient noise levels will be ***cumulatively significant, unavoidable, and unmitigatable***.

POPULATION AND HOUSING

The Initial Study concluded that the proposed project would have no impact from the displacement of a substantial number of existing homes or people, and a less than significant impact from inducing substantial population growth in an area either directly or indirectly served by the Belleview School. The construction of the Belleview High School is being completed in response to the increase in the population of the City of Merced and the need to increase the capacity to serve students in the vicinity. The approved, pending projects in the vicinity would provide approximately 5,400 single and multi-family dwelling units as well as commercial and

public facilities. This represents a ***significant cumulative increase*** in population and housing, which is ***unavoidable and unmitigatable***.

PUBLIC SERVICES

The Initial Study concluded that the proposed project would have less than significant impacts on fire and police protection, school capacity, parkland and other public facilities. Police and fire protection services will be provided by the City of Merced. One of the approved, proposed projects, the Belleview Ranch project, includes the construction of a new fire station. Payment of development impact fees and City property taxes will contribute to expansion of police and fire protection services for the vicinity. These measures will mitigate cumulative impacts to a level that is ***less than significant***.

RECREATION

There will be a cumulative significant increase in the need for recreational facilities in the vicinity of the project. The Merced High School District has made its school campuses available to the community for recreational use, thus the project will help reduce the cumulative need for recreational facilities. Additionally, the Belleview Ranch project, one of the approved, pending projects, incorporates additional schools, parks, and other open space elements. These facilities will reduce the cumulative recreational impacts to ***less than significant***.

TRANSPORTATION/TRAFFIC

Cumulative impacts of the project were evaluated in the year 2030 plus project scenario in the traffic study for rural segments and intersection. Table 10, of Appendix E, summarizes the impacts to the following intersections:

- G Street/Farmland Avenue
- Golf Road/Farmland Avenue
- SR 59/Bellevue Road
- Bellevue Road/Barclay Road
- Bellevue Road/G Street
- G Street/Cardelle Road
- G Street/Yosemite Road

As shown in Table 10 with the implications of planned regional improvements, long term traffic conditions in the study area will operate within the City of Merced's LOS D minimum at all study locations with and without the proposed high school.

Cumulative conditions were also evaluated at the site access intersections and at the G Street/ Bellevue Road intersection assuming the peak traffic characteristics associated with high schools. The text which follows describes resulting conditions.

G Street / Farmland Avenue intersection. Assuming the cumulative geometry described earlier, this intersection will operate at LOS F. This is a ***significant*** impact. To provide "below

capacity" conditions at the G Street / Farmland Avenue intersection the following improvements would be needed:

1. Construct a three lane eastbound approach with separate left turn, through and right turn lanes, and "overlap" the right turn with the northbound left turn.

This level of improvement would deliver LOS D during the peak period. However, the queue in the single northbound turn lane would be very long (i.e., 40 vehicles or 1,000 feet). Widening G Street to provide a dual left turn lane into the site would be recommended. Although not required to meet the City's minimum LOS standard.

Bellevue Road / Barclay Avenue intersection. This intersection would operate at LOS F during the peak period before the school day begins. This is a ***significant*** impact. To provide "below capacity" conditions the following improvements would be needed at the Bellevue Road/ Barclay Avenue intersection:

1. Create a "free" westbound right turn lane onto northbound Barclay Avenue that was not controlled by the signal;

2. Provide a three lane southbound approach on Barclay avenue, and configure this approach with a separate left turn, a combination left + through lane and a separate right turn lane;

3. Widen Bellevue Road to create a second eastbound left turn lane into the site.

This level of improvement would deliver LOS E during the peak period. These improvements are recommended but are not required to meet the City's minimum LOS standard.

G Street / Bellevue Road. This intersection would operate at LOS F during the peak period before school. This is a ***significant*** impact. To deliver "below capacity" conditions the following additional improvements are needed:

1. Construct separate right turn lanes on the Bellevue Road approaches.

This level of improvement would yield LOS E during the peak period.

However, as with the G Street/Farmland Avenue intersection, a very long queue would develop in the northbound left turn lane. Dual left turn lanes on the northbound approach would be recommended.

Certain improvements specified above are included in the funding programs for the citywide traffic impact fee and the Bellevue Ranch Master Development Plan mitigation fee program. These programs and the construction of the related improvements are outside of the legal ability of the district to perform. Several of the mitigations are within the District's legal, fiscal and technical ability, including the following:

1. Left turn from Bellevue onto Barkley

2. Create acceleration/deceleration lane on Barkley
3. Create right lane from Barkley onto Bellevue
4. Extended 1,300 foot through lane on G
5. Added right turn lane from Farmland onto G
6. Right in and right out from site to G

Where these facilities are provided off-site, the District will pay the City for such improvements.

Effectiveness of Mitigation: These measures will reduce short-term impacts to a ***less than significant*** level of all the roads and intersections discussed above. Additional mitigations necessary to fully mitigate Master Plan and General Plan buildout will be provided through development impact fees and implemented by the City on as-needed basis.

UTILITIES

The proposed project would not contribute to significant impacts to utilities and service systems. However, the project and other approved pending projects will cumulatively and significantly impact utilities and service systems. Expansion of those systems will be required to accommodate the expected growth envisioned for the area. These issues have been adequately evaluated and addressed in the Belleview Ranch EIR and the City of Merced EIR. Cumulative impacts to utility systems are ***cumulatively significant, unavoidable***, but will be mitigated by the planned expansion of the utility systems.

APPENDICES

Appendix A

Initial Study/NOP and Letters of Response to Notice of Preparation/Initial Study

INITIAL STUDY

MERCED UNION HIGH SCHOOL DISTRICT
BELLEVUE HIGH SCHOOL

December 2005

Quad Knopf

INITIAL STUDY

MERCED UNION HIGH SCHOOL DISTRICT
BELLEVUE HIGH SCHOOL

December 2005

Lead Agency: Merced Union High School District
P.O. Box 2147
Merced, CA 95344-0147

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Director of Facilities Planning
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5110 W. Cypress Avenue
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SECTION ONE

NOTICE OF PREPARATION

NOTICE OF PREPARATION

To: Responsible Agencies and Surrounding Landowners

Subject: Notice of Preparation of a Draft Environmental Impact Report

Project Title: Merced Union High School District, Bellevue High School

Project Location: Southwest Corner of Farmland and G Street in Merced

Lead Agency: Merced Union High School District
P.O. Box 2147
Merced, California 95344-0147

Contact Person: Michael Belluomini
Title: Director of Facilities Planning
Telephone: (209) 385-6400
Fax: (209) 385-6442

Project Description: The establishment and operation of an approximately 2,000 student high school on a 51 acre project site. This site will also include a sports stadium and several athletic fields. (see Descriptions in attached Initial Study).

Review Period: Due to the time limits mandated by State law, your response must be sent at the earliest possible date *but not later than 30 days* after receipt of this notice.

Scoping Meeting: TBD

_____ **Date:**_____
Stephen J. Peck, AICP

SECTION TWO

PROJECT DESCRIPTION

SECTION TWO – PROJECT DESCRIPTION

2.1 Project Location

Merced Union High School District is proposing to construct a 51-acre new high school in the City of Merced (see Figures 2-1 and Figure 2-2).

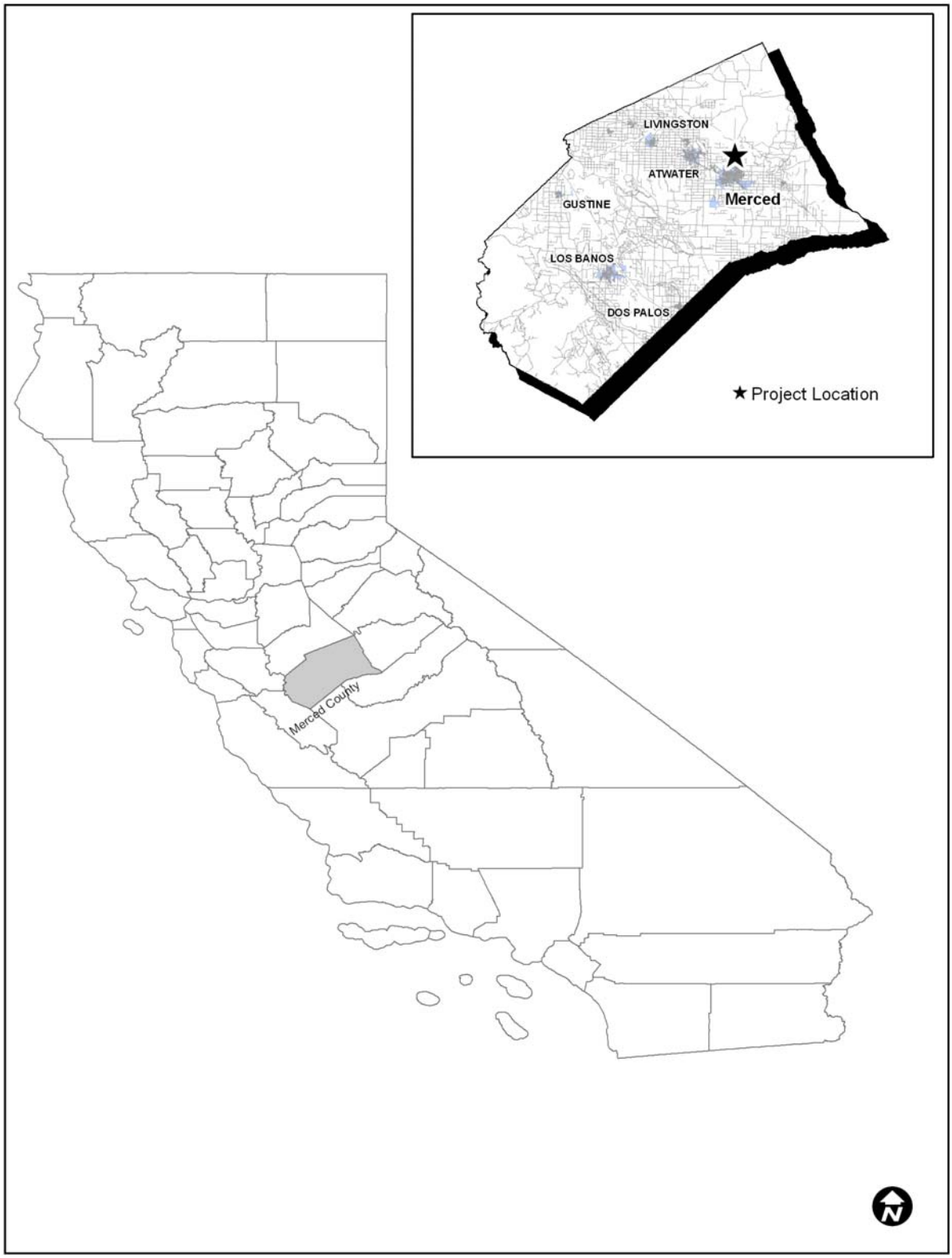
The Project is located at the southwest corner of Farland and G Street in Merced.

2.2 Project Description

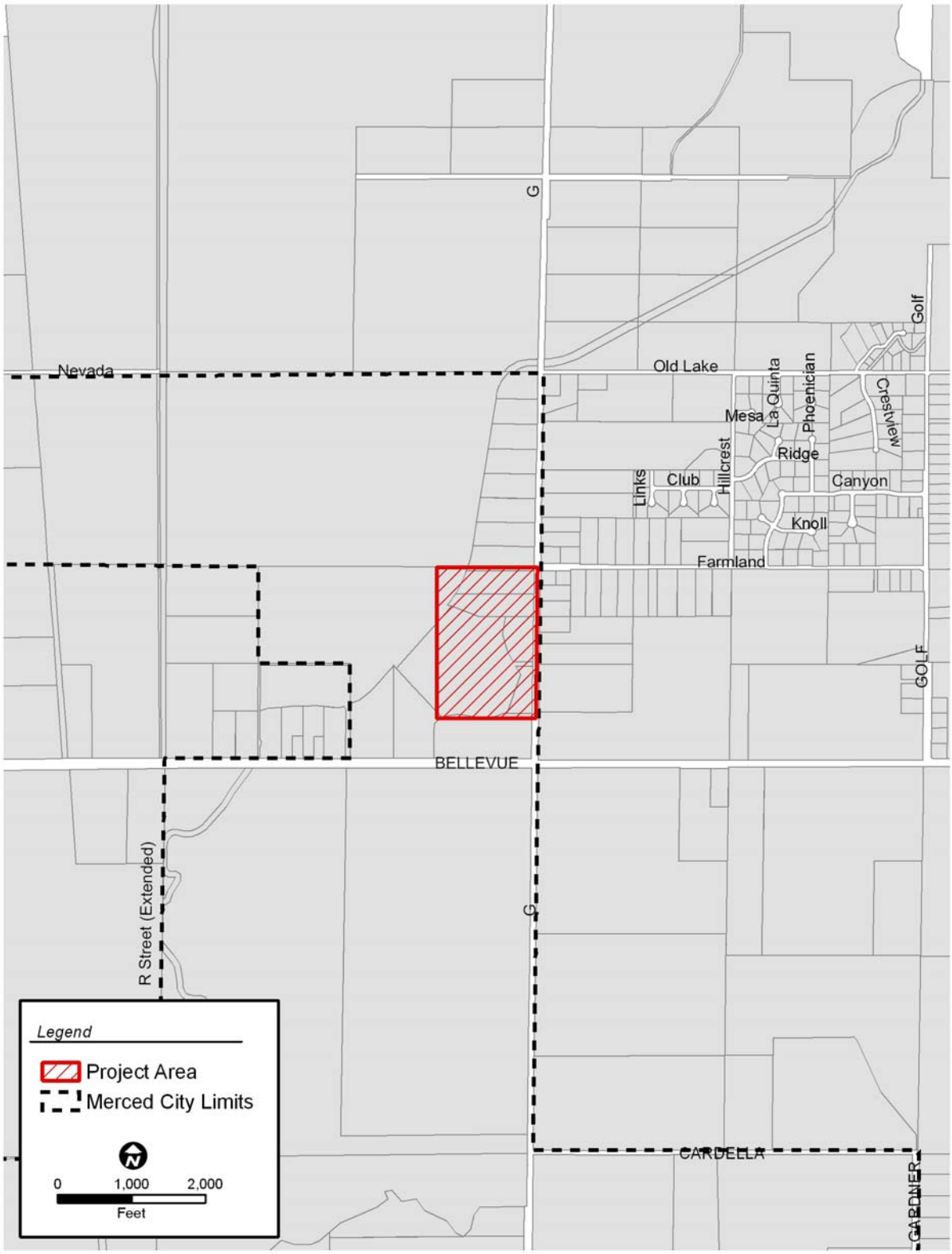
The proposed high school will provide classroom space for a maximum of 2,000 students, with a staff of approximately 100 and an outdoor athletic stadium. The Campus is designed to provide an educational program that is comprehensive in terms of its curriculum, facilities, and community service programs. The school accommodates the following programs and functions on site:

- Core Academic Programs
- Pre-vocational Programs
- Special Education Programs
- Extra Curricular Student Activities
- Student Counseling and Guidance Services
- Physical Education
- Campus Administrative Operational Services

The campus will include classrooms, administration buildings, a library, an outdoor athletic stadium, and various athletic facilities (see Figure 2-3). Buildings will occupy 191,575 square feet, parking area 204,900 square feet (623 spaces) and athletic fields 1,409,000 square feet.



Quad Knopf	REGIONAL LOCATION	Figure 1



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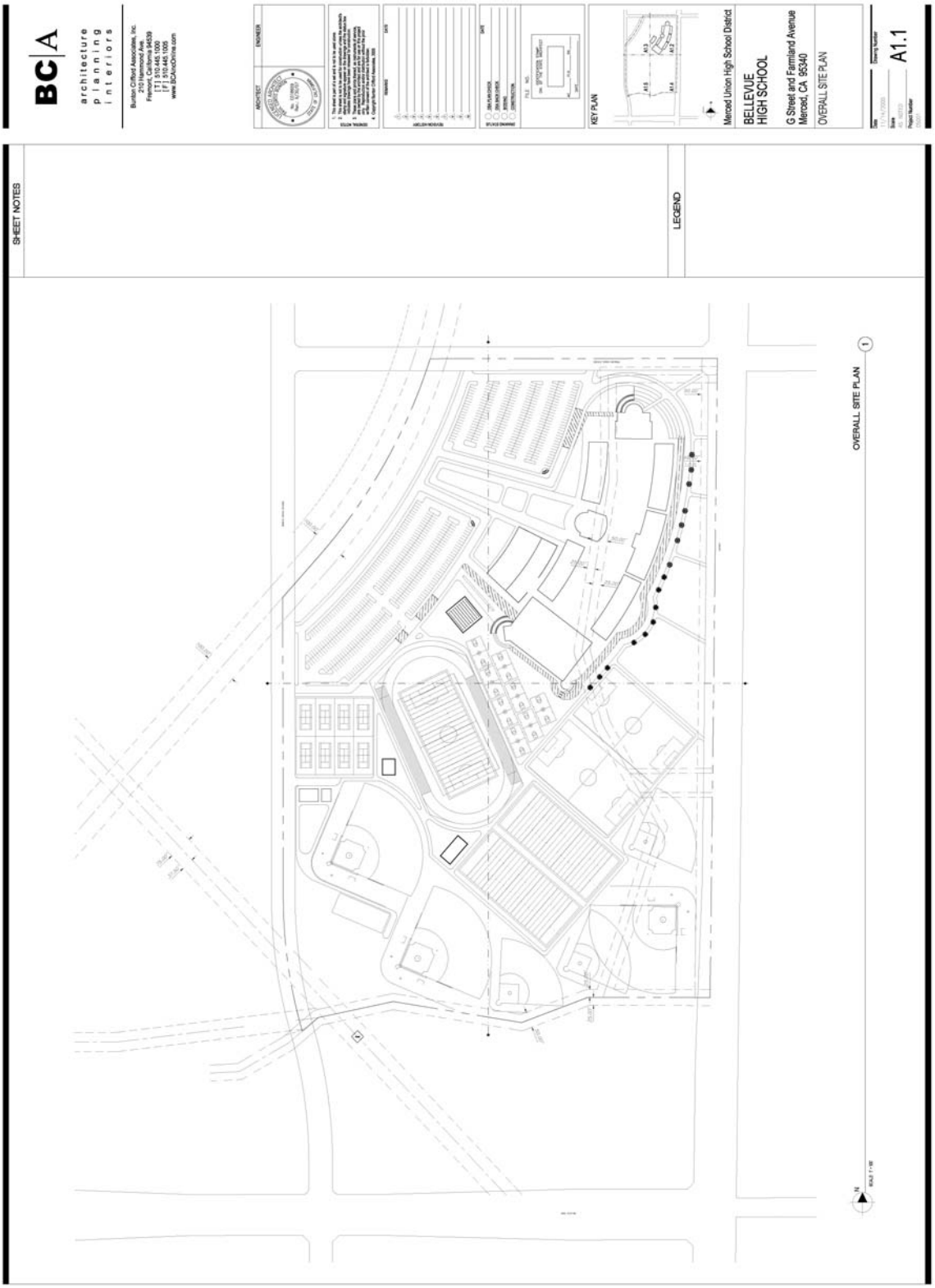
PROJECT VICINITY

Figure 2



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SECTION THREE

EVALUATION OF ENVIRONMENTAL IMPACTS

SECTION THREE – EVALUATION OF ENVIRONMENTAL IMPACTS

Introduction

This Initial Study section provides an evaluation of the environmental impacts of the project. For each topic the following is provided:

1) A brief explanation for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g. the project falls outside a fault rupture zone).

2) All answers take account of the whole action involved, including off-site as well as on-site effects; cumulative as well as project-level; indirect as well as direct; and construction as well as operational impacts.

3) In addition to the "No Impact" category, the checklist indicates whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is evidence that an effect may be significant.

4) "Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The mitigation measures are described and explain how they reduce the effect to a less than significant level.

5) Earlier analyses is used where, pursuant to a tiering EIR, a program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration (Section 15063(c)(3)(D)).

6) A source list is attached and other sources used or individuals contacted are cited in the discussion.

7) The explanation of each issue identifies the significance criteria or threshold, if any, used to evaluate each question, and the mitigation measure identified, if any, to reduce the impact to less than significant.

Environmental Checklist and Discussion	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
3.1 Aesthetics				
Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☒	☐	☐	☐

Response:

Scenic Resources and Visual Character (a, b, c): The site is located on flat ground that has been previously graded. No known aesthetic resources exist on the site, and it is not within any State, City or County-identified scenic vista or scenic highway corridor.

Conclusion: The impact on scenic resources will be less than significant.

Athletic Stadium Lighting (d): Evening athletic events and other school activities at the athletic stadium will result in a substantial alteration in night-time illumination.

Conclusion: Stadium lighting may have a significant impact and will be evaluated in the District's project EIR.

3.2 Agricultural Resources

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland.				
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☒	☐	☐	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use?	☐	☐	☒	☐

Response:

Farmland Conversion (a, c): The 51-acre site is currently vacant land, but has been in agricultural production in the past.

Conclusion: The loss of prime farmland is considered to be a significant impact and will be addressed in the District's project EIR.

Zoning Conflicts (b): The site is not covered by a Williamson Act Contract.

Conclusion: Development of the proposed school complex at this site will be evaluated in the District's EIR.

3.3 Air Quality

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management of air pollution control district may be relied upon to make the following determinations. Would the project:				
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☒	☐	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☒	☐	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations or hazardous emissions?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

Response:

Air Quality Plan (a): Development of the 51-acre school campus site will not conflict with the San Joaquin Valley Air Pollution Control District's plans and policies.

Conclusion: There will be no significant impacts.

Air Quality Standards (b, c): The project will exceed the San Joaquin Valley Air Pollution Control District's threshold (1,325 students) for the Small Project Analysis Level (SPAL). Air emissions resulting from project-related traffic may also exceed existing standards.

Conclusion: The EIR will incorporate both a cursory air quality analysis and an evaluation of traffic emissions. The EIR will recommend measures to address air quality impacts.

Sensitive Receptors and Odors (d, e): Operation of a high school will not generate substantial pollutant concentrations, hazardous emissions, or objectionable odors.

Conclusion: No impacts will result.

3.4 Biological Resources

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) 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?	☐	☐	☒	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Response:

Biological Resources (a, b, c, d): The site has been in agricultural use in the past. Practices associated with such use, including pesticide application, cultivation, and ground disturbance have resulted in the removal of the site's native vegetation and wildlife. The project is not expected to have a substantial effect on any special status species or on a federally protected wetland, such as a marsh or vernal pool. The site is not within an identified migratory wildlife corridor.

Conclusion: While the biological impacts are considered to be less than significant, a biological survey will be conducted and incorporated into the EIR.

Habitat Conservation Plan (e, f): The District will comply with the Merced County Natural Community Conservation Plan.

Conclusion: The project will not be in conflict with policies or ordinances protecting biological resources.

3.5 Cultural Resources

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064385?	☒	☐	☐	☐
c) Directly or indirectly destroy a unique paleontological resource site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☒	☐	☐	☐

Response:

Disturbance of Cultural Resources (a, b, d): There could be a disturbance or destruction of archaeological resources, or human remains resulting from the construction activities associated with the project.

Conclusion: A cultural resources survey of the project site will be conducted and incorporated into the project EIR.

Paleontological Resources (c): There are no unique geological features or known fossil-bearing sediments in the vicinity of the project site.

Conclusion: There will be no adverse impact.

3.6 Geology/Soils

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction of collapse?	☐	☐	☐	☒
d) 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?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems when sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Response:

Seismic Effects (a-i through a-iii): According to the 1996 Redevelopment Plan and the 1997 General Plan EIRs, there are no known active earthquake faults within or near the City.

Conclusion: The soils of the site will accommodate the development, and the impact of ground shaking will then be mitigated to a less than significant level by designs to comply with *Title 24 Building Standards.*

Landslides (a-iv): Site topography is essentially level.

Conclusion: There is no potential landslide impact.

Soil Erosion, Instability, and Expansive Soil Hazards (b, c, d): The site is currently level and will remain level. Landslide potential and liquefaction potential have been discussed, and found to be less than significant. There is no evidence in the geologic record that "Old Alluvium" or its derivative soils are subject to lateral spreading. Subsidence is due to non-compacted, wind-deposited, soils consolidation under load, to oil or gas production or to ground water overdraft, none of which are factors at this site.

Conclusion: No soil-related impacts will occur.

Wastewater Disposal (e): The school will connect to the City's sewer system, wastewater treatment, and disposal facilities, all of which have sufficient designed or constructed capacity to accommodate project occupancy wastewater discharges.

Conclusion: There is no potential impact associated with on-site wastewater disposal.

3.7 Hazards/Hazardous Materials

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) 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 area?	☐	☐	☐	☒
f) 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 area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
h) 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?	☐	☐	☐	☒

Response:

Hazardous Materials (a, b, d): The site is currently vacant. Operation of a school complex at this site will not involve the transport, use or disposal of hazardous materials, nor will the school operation have this potential to release hazardous materials into the environment.

The San Joaquin Valley Air Pollution Control District and The Gas Company will be contacted to determine if there are any other facilities within one-fourth mile of the site that have hazardous emissions potential.

Conclusion: Impacts dealing with hazardous materials (if any) will be discussed in the EIR.

Hazardous Emissions (c): The project will not emit hazardous emissions.

Conclusion: There are no significant impacts.

Airport Land Use and Emergency Response Plans (e, f, g): The project is not located within two miles of an airport.

The project will not alter any county or city emergency response plan or emergency evacuation plan.

Conclusion: There are no significant effects.

Wildland Fires (h): Grasslands do not exist in the site vicinity. Surrounding lands are either in irrigated agricultural production or urban uses.

Conclusion: There is no danger of wildland fires within the project vicinity.

3.8 Hydrology/Water Quality

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially deplete ground-water 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 (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☒	☐	☐
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Response:

Water Quality (a): The school complex will generate domestic-type wastewater from cafeteria and restroom facilities, and will not generate any unusual discharges.

Conclusion: No significant impacts will result.

Groundwater (b): The 51-acre site has been graded, leveled and developed for agricultural use.

Conclusion: The impact on groundwater will be less than significant, as the amount of groundwater used for urban development, including educational facilities, is comparable to intensive agricultural land, there will be no measurable impact on groundwater supplies.

Surface Water (c, d): The site is bound on the north by an irrigation canal but the project won't have an impact on existing drainage patterns.

Conclusion: No significant impacts will result.

Stormwater (e): Development of the site for a high school campus will increase surface runoff. An on-site drainage basin will be developed on the school site to contain this storm water.

As the project will disturb more than 1 acre, the National Pollutant Discharge Eliminations System (NPDES) for Discharge of Storm Water Associated with Construction Activity will be required.

Conclusion: Impacts will be less than significant.

Water Quality (f): The project will not otherwise substantially degrade water quality.

Conclusion: No significant impacts will result.

Flood Hazard (g, h): The Federal Emergency Management Agency's Flood Insurance Rate Map shows that the site is not within a 100-year flood hazard zone.

Conclusion: No significant impacts will result.

Dam Failure Inundation (i): The District will comply with the Merced General Plan and the Merced County Critical Area Flooding and Drainage Plan. These regulations address drainage, flooding, stormwater, surface water and other impacts.

Conclusion: Less than significant impact.

Seiche/Tsunami (j): There is no potential for seiche or tsunami due to the lack of a significant water body near the site. The site is flat, therefore eliminating the possibility for mudflow.

Conclusion: No significant impacts will result.

3.9 Land Use/Planning

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) 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, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Response:

Divide Established Community (a): Locating the school at this location will not impede the orderly growth and development in the Merced area. The project will not have an adverse impact.

Conclusion: No significant impacts will result.

Conflicts with Land Use and Zoning (b): The site is zoned as A-1.

Conclusion: The potential impact is less than significant.

Conservation Plan (c): The District will comply with the Merced County Natural Community Conservation Plan.

Conclusion: The potential impact is less than significant.

3.10 Mineral Resources

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Response:

Mineral Resources (a, b): The site is not on or adjacent to an active oil field or a sand and gravel mining operation.

Conclusion: No impacts will result.

3.11 Noise

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☒	☐	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☒	☐	☐	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
e) 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 expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Response:

Construction and Stadium Noise (a, b, d): Construction activities will generate substantial excess noise. Also, the proposed athletic stadium will result in increased noise levels that will have a potentially significant impact on residential areas.

Conclusion: The EIR will address potential adverse noise impacts.

Permanent and Temporary Ambient Noise Levels (c): The day-to-day school activities will not generate noise levels exceeding the City's noise level standards.

Conclusion: There will not be a significant impact.

Airport Noise (e, f): The site is not located within the vicinity (5,000 feet) of a public or private airstrip. Therefore, the site will not be affected by significant noise impacts.

Conclusion: The project site will not be exposed to excessive noise levels associated with airport activities.

3.12 Population and Housing

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Response:

Population Growth and Displacement (a): Development of the new high school is in response to the existing and proposed increased growth in Merced.

Conclusion: The construction and operation of a new high school in Merced will encourage growth and development in accordance with the City's General Plan and is not considered to represent a potentially significant growth-inducing effect.

Housing (b) (c): There are no housing units on the site.

Conclusion: No significant impact will occur.

3.13 Public Services

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impact, in order to maintain acceptable service ratios for any of the public services:				
i) Fire protection?	☐	☐	☒	☐
ii) Police protection?	☐	☐	☒	☐
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Response:

Fire Protection Services: Fire suppression support for this campus would come from the City of Merced.

Conclusion: Working with the City and County fire departments, the District will install the required infrastructure to meet water supply demands for municipal fire protection services.

An approved water supply system capable of supplying required fire flow for fire protection purposes will be provided to all portions of the school campus which buildings are to be located. The establishment of gallons-per-minute requirements for fire flow shall be based on the *Guide for Determination of Required Fire Flow,* published by the Insurance Service Office.

Fire hydrants shall be located and installed per the Fire Department. On-site fire hydrants will be provided when any portion of the building protected is in excess of 150 feet from a water supply on a public street. These measures will reduce impacts to less than significant level.

Police Protection: As the population and geographic area of the City increases, the demand for police services will similarly increase. The number of law enforcement officers and patrol cars, which presently serve the project vicinity, varies according to shift and time of day.

Development of a new high school campus will not result in the need for additional police services.

Conclusion: The project effects will not require the construction of new police facilities, or the physical alteration of the existing facility. Additionally, the District provides its own on-campus security services, which relieves the need for most of the service calls by the Merced Police Department. The impact is less than significant.

School Facilities: The establishment of a new school complex in Merced is needed to meet projected enrollment growth.

Conclusion: The project will reduce overcrowding on high school campuses in Merced. Development of a new high school in the area will have a beneficial effect and assist the District to meet projected growth needs.

Park Facilities: The project effects will not require the construction of new park facilities.

Conclusion: Development of a new school complex will not have any adverse impact on city parks. There will be beneficial effects to having the new school complex as the site can be used to host some of the activities currently held at nearby parks.

2.14 Recreation

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) 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?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Response:

Recreational facilities (a, b): The Project will not increase the use of, or require additional recreational facilities.

Conclusion: As a matter of policy, the District has made its school campuses available to the community for recreational use. Development of these new school facilities is expected to have an overall beneficial effect on meeting recreational needs in the Merced area.

3.15 Transportation/Traffic

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) 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?	☒	☐	☐	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☒	☐	☐	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☒	☐	☐	☐
e) Result in inadequate emergency access?)	☐	☐	☐	☒
f) Result in inadequate parking capacity?	☐	☐	☐	☒
g) Conflict with adopted polices, plans, or programs supporting alternative transportation?	☐	☐	☐	☒

Response:

Traffic Conditions (a, b, d): The project will increase traffic in Merced.

Conclusion: A traffic study will be prepared as part of the EIR evaluation on traffic impacts.

Air Traffic Patterns (c): There are no public or private airports within 2 miles of the proposed campus. Locating a new high school at this site will not result in a change of air traffic patterns.

Conclusion: The project will not have an impact on existing air traffic patterns.

Emergency Access and Parking (e, f): The site will have adequate access for emergency traffic and will have sufficient on-site parking.

Conclusion: The District will meet or exceed the City's parking requirements. There will be no significant impact.

Alternate Transportation (g): The project is not in conflict with the City's transit services.

Conclusion: There will not be an adverse impact on existing transit systems.

3.16 Utilities/Service Systems

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) 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?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

Response:

Wastewater (a, b, e): Wastewater and disposal facilities will be provided by the City.

Conclusion: The project's wastewater impact is less than significant.

Storm Water (c): See Section 2.8 Hydrology/Water Quality

Conclusion: Less than significant impact.

Water Service (d): Domestic water service is adjacent to the site.

Conclusion: Less than significant impact.

Solid Waste (f, g): The solid waste is to be transported by the City.

Conclusion: The City's refuse collection has the ability to serve the site.

3.17 Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☒	☐	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐

Response:

a) While the potential for a significant impact on biological or historical resources is considered to be very limited, both of these issues will be addressed in the EIR.

b) The project will support growth and development in the City. There are potential cumulative impacts from the buildout of the proposed project.

c) The analyses of environmental issues contained in this Initial Study indicates that the project may have substantial impacts on human beings.

3.18 Determination

I find that the proposed project may have a significant effect on the environment, and an environmental impact report is required.

Stephen J. Peck, AICP
Quad Knopf, Inc.

Date

Copy to Terry Silva + David H

Transportation Planning, 1976 Dr. Martin Luther King Jr., Stockton, CA 95205

Caltrans District 10

Fax

To: Merced Union High School District **From:** Dee Maddox

Attn: Mr. Michael Belluomini

Fax: 209-385-6442 **Pages:** 2

Phone: 209-385-6400 **Date:** 2/1/2006

Re: IS NOP for Bellevue High School **CC:**

☐ **Urgent** ☐ **For Review** ☐ **Please Comment** ☐ **Please Reply** ☐ **Please Recycle**

• **Comments:**

Comments on IS NOP.

Dee Maddox
IGR & Intermodal Planning
(209) 942-6022

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

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January 31, 2006

10-MER-99-PM 14.31
Initial Study, NOP
Bellevue High School
SCH #2006011001

Mr. Michael Belluomini
Director of Facilities Planning
Merced Union High School District
3105 G Street
Merced, CA 95344

Dear Mr. Belluomini:

The California Department of Transportation (Department) appreciates the opportunity to review and comment on the Initial Study, Notice of Preparation for Bellevue High School. The proposed project is the establishment and operation of an approximately 2,000 student high school on a 51 acre project site that will include a sports stadium and several athletic fields. The project is located on the southwest corner of Farmland and G Street in Merced. The Department has the following comments:

A traffic impact study (TIS) is necessary to determine this proposed project's near-term and long-term impacts to State facilities – both existing and proposed – and to propose appropriate mitigation measures. The Department recommends that the study be prepared in accordance with the *Caltrans Guide for the Preparation of Traffic Impact Studies*, dated December 2002 (Guide). The Guide is available online at: http://www.dot.ca.gov/hq/tpp/planning_tools/tools.htm. Minimum contents of the TIS are listed in Appendix "A" of the TIS guide. All State owned signalized intersections affected by this project along (SR/59 and SR-99) should be analyzed using the intersecting lane vehicle (ILV) procedure from the Department's Highway Design Manual, Topic 406, page 400-21.

The Department endeavors to maintain a target level of service (LOS) at the transition between LOS C and LOS D on State highway facilities, including intersections (see Appendix "C-3" of the TIS guide). If an intersection is currently below LOS "C," any increase in delay from project-generated traffic should be analyzed and mitigated. The LOS for operating State highway facilities is based upon measures of effectiveness (MOE) (see Appendix "C-2" of the Guide). If an existing State highway facility is operating at less than this target LOS, the existing MOE should be maintained.

The Department recommends the TIS be prepared to include a Traffic Management Plan for sporting events that may have an effect on traffic operations along SR-59 and/or SR-99.

The Department recommends that the Lead Agency encourage the developer to submit a scope of work for conducting the TIS prior to circulating the local development application for comment in order to expedite the Department's review. The Department is available to discuss assumptions, data requirements, study scenarios, and analysis methodologies prior to beginning the TIS. This will insure a quality TIS is prepared.

The Department looks forward to reviewing the Draft Environmental Impact Report (DEIR) that will more clearly describe and map the locations of the potential improvement projects that are indicated in this NOP.

If you have any questions, please contact Dee Maddox at (209) 942-6022 (email: dcc_maddox@dot.ca.gov) or me at (209) 941-1921. We look forward to continuing to work with you in a cooperative manner.

Sincerely,

TOM DUMAS, Chief
Office of Intermodal Planning

cc: Scott Morgan
State Clearinghouse

Alan C. Lloyd Ph.D.
Secretary for Environmental Protection

California Regional Water Quality Control Board
Central Valley Region

Robert Schneider, Chair

Arnold Schwarzenegger
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8 February 2006

Dave Hanham
Merced Union High School District
P.O. Box 2147
3105 G Street
Merced, CA 95344

INITIAL STUDY/NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT (EIR), MERCED UNION HIGH SCHOOL DISTRICT, BELLEVUE HIGH SCHOOL, SCH#2006011001, MERCED COUNTY

Your request for comments on the Initial Study/ Notice of Preparation of a Draft Environmental Impact Report for Bellevue High School was received on 6 January 2006. The proposed project is for the establishment and operation of an approximately 2,000-student high school on a 51 acre project site. This site will also include a sports stadium and several athletic fields.

The Environmental Impact Report needs to include a description of all solid and/or liquid waste that might be generated by the proposed project and how it will be handled, treated, and disposed. The CEQA environmental document also needs to consider how storm water drainage may be affected by the proposed project.

As construction associated with the project will disturb one acre or more, compliance with the National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002 for Discharges of Storm Water Associated With Construction Activity will be required for potential discharges to surface waters, including ephemeral and intermittent drainages. Before construction begins, the District must submit a Notice of Intent (NOI) to comply with the permit, a site map, and an appropriate fee to the State Water Resources Control Board and a Storm Water Pollution Prevention Plan (SWPPP) must be prepared. The SWPPP must contain at a minimum all items listed in Section A of the General Permit including descriptions of measures taken to prevent or eliminate unauthorized non-storm water discharges, and both temporary (e.g., fiber rolls, silt fences, etc.) and permanent (e.g., vegetated swales, riparian buffers, etc.) best management practices (BMPs) that will be implemented to prevent pollutants from discharging with storm water into waters of the United States.

If the project will result in construction dewatering discharges, compliance with the NPDES No. CAG995001, General Order No. 5-00-175 for Dewatering and Other Low Threat Discharges to Surface Waters may be required. Before construction begins, the District must submit a NOI to comply with the permit and a filing fee to this Regional Board office. The dewatering General Order is applicable only if the discharge does not contain significant quantities of pollutants, and

is less than four months in duration or has an average dry weather flow of less than 0.25 million gallons per day. Otherwise, the District must apply for site-specific waste discharge requirements (WDRs). A representative sample of the construction dewatering discharge would need to be collected and analyzed to demonstrate that no constituents of concern are present in quantities that would cause an exceedance of water quality objectives.

If the project will result in the discharge of dredged or fill material into navigable waters or wetlands (jurisdictional waters), the District must obtain a permit pursuant to Section 404 of the Clean Water Act from the U.S. Army Corps of Engineers and a Section 401 Water Quality Certification from this office. The Regional Board will review the Section 401 certification application to ensure that discharges will not violate water quality standards. If the project will result in the discharge of dredged or fill material into wetlands that are determined by the Corps to be non-jurisdictional, the District will not be required to obtain a Section 401 Water Quality Certification, but may be required to submit a report of waste discharge (RWD) if the wetlands are waters of the State. The Regional Board will either prescribe waste discharge requirements (WDRs) that will incorporate measures to mitigate potentially significant impacts to water quality and potential public nuisances or issue a waiver of WDRs. For more information regarding Section 404 permitting, contact the Sacramento District of the Corps of Engineers at (916) 557-5250.

If the project will involve the storage of petroleum products in above ground tanks, with a single tank capacity of greater than 660 gallons or a cumulative capacity of greater than 1,320 gallons, the District will be subject to State above ground petroleum tank regulations. The District must file a storage statement with the SWRCB, pay a facility fee, and prepare a federal spill prevention control and countermeasure plan.

Thank you for the opportunity to comment on this Initial Study/ Notice of Preparation of a Draft Environmental Impact Report (EIR). If you have any questions regarding our comments, please call me at (559) 445-6190.

W. DALE HARVEY
Sr. WRC Engineer

Cc: State Clearinghouse, Sacramento

C:\\CEQA\BellvueHSMerced.DOC

State of California - The Resources Agency
DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
San Joaquin Valley and Southern Sierra Region
1234 East Shaw Avenue
Fresno, California 93710
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ARNOLD SCHWARZENEGGER, Governor

January 18, 2006

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Dave Hanlan
Merced Union High School District
Post Office Box 2147
Merced, California 95344

Dear Mr. Hanlan:

Merced Union High School District
Bellevue High School Notice of Preparation
(SCH#2006011001)

The California Department of Fish and Game (Department) has reviewed the Notice of Preparation (NOP) for the above Project. The Project is located at the southwest corner of Farmland and G Street in the City of Merced. The Project proposes to establish and operate a 2,000 student high school on a 51 acre site, which will include a sports stadium and several athletic fields. The parcel is currently in agricultural production.

The Department has limited comments on the proposed Project as outlined in the NOP; more specific comments may be provided once the Department has had the opportunity to review the California Environmental Quality Act (CEQA) document that will be prepared for this Project. Our comments follow:

Trustee Agency Authority: The Department is a Trustee Agency with responsibility under CEQA for commenting on projects that could impact plant and wildlife resources. Pursuant to Fish and Game Code Section 1802, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. As a Trustee Agency for fish and wildlife resources, the Department is responsible for providing, as available, biological expertise to review and comment on environmental documents and impacts arising from project activities as those terms are used under CEQA.

Stream Alteration Notification and Responsible Agency Authority: The Department has regulatory authority with regard to activities occurring in streams. Aerial photographs and topographic maps show that a blue line stream or conveyance ditch crosses the Project site, and it is unclear from the Project description whether the Project will encroach upon or directly impact this stream or ditch. For any activity that will divert or obstruct the natural flow, or change the bed, channel, or bank of a river or stream, or use material from a streambed, the Department may require a Stream Alteration Agreement (SAA), pursuant to Fish and Game Code Section 1600 et seq. The issuance of a SAA is subject to CEQA review. The Department, as a Responsible Agency under CEQA, would consider the CEQA document

prepared for the Project. The CEQA document should fully identify the potential impacts to streams and provide adequate avoidance, mitigation, monitoring and reporting commitments for completion of the SAA. We recommend contacting Annette Jennings, Staff Services Analyst, at 559-243-4593 for further information regarding notification requirements.

General Comments:

1. Page 3-7 of the NOP states that "the District will comply with the Merced County Natural Community Conservation Plan." All references to this NCCP and associated conservation should be removed from the CEQA document, since Merced County terminated development of this NCCP a few years ago.

2. Riparian habitat may be present in the Project Area in association with the conveyance ditch/stream present on site. Impacts to riparian habitat and associated wildlife should be evaluated in the CEQA document prepared for this Project.

3. The Federally and State-threatened giant garter snake (*Thamnophis gigas*) is known to occur a few miles away from the Project Area. An assessment should be made to determine whether or not the conveyance ditch/stream that is present within the Project Area provides habitat for this species, which is known to utilize irrigation ditches. The CEQA document prepared for the proposed Project should quantify and describe the potential impacts to giant garter snake.

We look forward to reviewing the CEQA document prepared for this Project. If you have any questions, please contact Julie Vance, Senior Environmental Scientist, at the address or telephone number (extension 222) provided on this letterhead.

Sincerely,

for W. E. Loudermilk
Regional Manager

cc: Stephen J. Peck
Quad Knopf, Inc.
5110 West Cypress Avenue
Visalia, California 93278

Terry Roberts, Director
State Clearinghouse
1400 Tenth Street
Sacramento, California 95814

STATE OF CALIFORNIA -- THE RESOURCES AGENCY
ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 942360001
(916) 653-5791

JAN 17 2006

RECEIVED
JAN 19 2006
M.U.H.S.D.
FACILITIES PLANNING

Dave Hanham
Merced Union High School District
Post Office Box 2147
Merced, California 95344

Merced Union High School District, Bellevue High School
State Clearinghouse (SCH) Number: 2006011001

Staff for The Department of Water Resources has reviewed the subject document and provides the following comments:

Portions of the proposed project may be located within a regulated stream over which The Reclamation Board has jurisdiction and exercises authority. If the project includes any "channel reconfiguration" that was not previously permitted, new plans must be submitted. Section 8710 of the California Water Code requires that a Board permit must be obtained prior to start of any work, including excavation and construction activities, within floodways, levees, and 10 feet landward of the landside levee toes. A list of streams regulated by the Board is contained in the California Code of Regulations, Title 23, Section 112.

Section 8(b)(2) of the Regulations states that applications for permits submitted to the Board must include a completed environmental questionnaire that accompanies the application and a copy of any environmental documents if they are prepared for the project. For any foreseeable significant environmental impacts, mitigation for such impacts shall be proposed. Applications are reviewed for compliance with the California Environmental Quality Act.

Section 8(b)(4) of the Regulations states that additional information, such as geotechnical exploration, soil testing, hydraulic or sediment transport studies, biological surveys, environmental surveys and other analyses may be required at any time prior to Board action on the application.

You may disregard this notice if your project is outside of the Board jurisdiction. For further information, please contact Sam Brandon of my staff at (916) 574-0651.

Sincerely,

Mike Mirmazaheri, Chief
Floodway Protection Section

cc: Governor's Office of Planning and Research
State Clearinghouse
1400 Tenth Street, Room 121
Sacramento, CA 95814

CITY OF MERCED

"Gateway to Yosemite"

Received
JAN 2006
Quad Knopf, Inc.

January 26, 2006

Travis L. Crawford
Quad Knopf
5110 West Cypress Avenue
P.O. Box 3699
Visalia CA 93278

Re: City Review Comments regarding the Initial Study for the "Bellevue High School"

Mr. Crawford,

Thank-you for the opportunity to review the Initial Study for the "Bellevue High School" project. Many of our prior comments set forth in our October 26, 2005 letter are still applicable. Unfortunately, some of the issues in that letter were either overlooked or given little consideration. As a responsible agency that needs to use the environmental document, we look forward to use of a complete and comprehensive document.

This letter provides you with brief comments; Please refer to our letter of October 26, 2005 for details.

I. Project Description

A. *Plans*: The project description lacks building elevations, landscape plans, and the site plan lacks detail that could be helpful to assess environmental impacts. This lack of description has a direct correlation to determination of impact as will be noted below.

B. *Use of Property in Northwest Corner*: The project description should define the use of this portion of the site.

C. *Bellevue Ranch Master Development Plan (BRMDP)*: The project description is wholly incomplete without mention that the project site lies within the BRMDP, and that the development of this site is subject to said plan. Among other topics, the BRMDP establishes design standards for infrastructure improvements and open space (for example – along Fahrens Creek); describes the phasing plan for

improvements and developments; and sets forth acceptable land uses and roadway designs.

D. *High School Parking Lot Driveway Connections to Adjacent Collector Roads*: During review of the Bellevue Ranch Phase 3 and 4 "Large-lot Tentative Subdivision Map," it was found that the height of the bridges over Fahrens Creek is likely to affect the location or design of driveway connections from adjacent collector streets to the parking lot of the proposed high school. Please contact Seth Irish of Thompson-Hysell Engineers for further information and to coordinate efforts. He can be reached at (209) 521-8986

II. Aesthetics:

Visual Character: In the absence of project description features that describe how views of parking lots or other views of expansive paved or concrete surfaced sites, walls (as may be the case near the stadium), and other like features that may negatively affect the visual character of the area, there could be potentially significant impacts.

Light and Glare: City agrees with the conclusion of the initial study.

III. Biological Resources:

An important "environmental setting" topic that should be disclosed it the fact that Fahrens Creek traverses through the site. The initial study states that a biological study will be conducted and incorporated into the EIR. Given the presence of the creek and lack of a study, the initial study should note that impacts to biological resources could be potentially significant.

IV. Hydrology / Water Quality:

Without mitigation, use of groundwater is regarded by the City as a cumulative significant impact. Typical mitigation includes use of surface water (if available) and water conservation measures.

V. Land Use:

The initial study's analysis as it pertains to item (b) on the CEQA checklist is incorrect.

The site is not zoned A-1. The site is within the City of Merced and zoned Planned Development #42 with a "single-family residential" designation. Furthermore, the site is not in conformance with the City's General Plan; the site is currently designated "Low Density Residential," which does not allow for schools. School sites must be designated "School."

As such, the placement of a school on land designation for homes is regarded by the City as a significant impact.

However, a Project Description that includes language regarding the proposal to seek a change to the *Land Use Diagram* of the *Merced Vision 2015 General Plan* and BRMDP from "Low Density Residential" to "School," and to change the zoning designation and

BRMDP from "single family residential" to "school," would be regarded as a project that has less than significant impact in this category.

A discretionary application for a "General Plan Amendment" needs to be submitted to the City for review and action by the City Council. From a CEQA perspective, there are several factors the City uses to determine whether or not a change in land use is appropriate, including: aesthetics, noise, adequate provision of public services and utilities, and transportation and circulation.

It would be helpful to know (perhaps as a part of the project description) whether or not the school district intends to submit a discretionary Conditional Use Permit (CUP) for this project, or exempt themselves from that part of the City review process.

VI. Noise: City agrees with the conclusion of the initial study.

VII. Transportation / Circulation:

The City agrees with the conclusion of the initial study. Please refer to our letter of October 26, 2005 as it lists several issues that the EIR should include, namely: access; frontage improvements; traffic study considerations; and Bellevue Ranch Master Development Plan related improvements.

Based on the above comments, we look forward to receipt of an amended initial study or for the issues presented to be included in the EIR.

If you have any questions regarding our comments, then please do not hesitate to contact me at your earliest convenience at 209-385-6858.

Sincerely,

Bill King

Bill King
Principal Planner

CC: Paul Bunton, AIA, Bunton Clifford Associates Inc.

CITY OF MERCED

"Gateway to Yosemite"

October 26, 2005

Travis L. Crawford
Quad Knopf
5110 West Cypress Avenue
P.O. Box 3699
Visalia CA 93278

Re: Farmland High School EIR Preparation

Mr. Crawford,

The City of Merced welcomes and supports the placement of a third high school within City Limits. As providers of public services and infrastructure ourselves, we fully understand the MUHSD's need and desire to construct a new high school for our growing community. To help us move through the environmental review stage, the City will actively participate at the earliest time so that all relevant issues are discussed and mitigated where possible without delay of the project. In this spirit, the following "early consultation" comments are provided. We look forward to receipt of the Notice of Preparation and review of the Draft EIR. Finally, as a responsible agency, we are interested to have a comprehensive project description, to have meaningful input, and look forward to the review and/or drafting of feasible mitigation measures for this project.

List of EIR Topics of Concern to the City

1. Land Use:

   The site is not in conformance with the City's General Plan; the site is currently designated "Low Density Residential," which does not allow for schools. School sites must be designated "School." A discretionary application for a General Plan Amendment needs to be submitted to the City for review and action by the City Council. There are several factors the City uses to determine whether or not a change in land use is appropriate, including: aesthetics, noise, adequate provision of public services and utilities, and transportation and circulation.

As a responsible agency, the City will utilize the EIR now being prepared by Quad Knopf for the school district's request to amend the City's General Plan as well as the Project Conditional Use Permit.

On a related note, it would be helpful to know (perhaps as a part of the project description) whether or not the school district intends to submit a discretionary Conditional Use Permit (CUP) for this project.

2. Aesthetics:

Visual Character: Except for the southern property line, the high school site will be visible from pubic lands on the east ("G" Street); north (Farmland Road); and the west (Fahrens Creek open space, and a future City park. The City would like to know what measures or project description features will be part of the Project to address potential impacts of views of parking lots or other views of expansive paved or concrete surfaced sites, walls (as may be the case near the stadium), and other like features that may negatively affect the area.

Light and Glare: Residential uses are planned to exist to the north, east, and south of the subject site. . The City would like to know what measures, project description features, or operational procedures will be part of the Project to address potential light-related impacts from athletic events, parking lots and vehicle traffic and other like features that may negatively affect the area.

Cellular Towers: Although not part of the proposal, City Staff would like you to be aware that the City supports the use of "stealth" cellular towers on lands designated for "residential" and "school" uses. These towers, which resemble common objects, such as trees and flagpoles, blend well into the visual landscape without causing a negative aesthetic impact. Additionally, they generate revenue for the landowner through lease agreements with the cellular companies that mount antennas on the pole. You may want to take advantage of this opportunity during your site planning process.

3. Noise:

Sensitive Receptors (future residential uses) are planned to exist to the north, east, and south. The City would like to know what measures, project description features or operational procedures will be part of the Project to address potential noise impacts from athletic events, vehicle traffic and other features or activities that may negatively affect the area.

4. Adequate Provision of Public Services and Utilities:

The high school will need to connect to urban sewer and water services. Issues of capacity and improvement of service lines need to be fully discussed in the EIR, or as part of project initial study. No sewer or water lines abut the project site. The high school will use City emergency services and public works services (water, sewer, trash collection). The City would like to know what measures, project description features or operational procedures are part of the Project that will minimize potential impacts to public services and utilities.

5. Transportation / Circulation:

A. *Access Issues*:

The City's General Plan spells out access restrictions on "G" Street as follows:

a. Three full-access signalized intersections (allowing left and right turns) are planned for "G" Street's intersections with Bellevue Road, Farmland Road (1/2 mile north of Bellevue), and Old Lake Road;

b. Right-turn in and right-turn out intersections may be located at the ¼ mile locations (i.e. ¼ mile north of Bellevue Road and ¾ mile north of Bellevue); and

c. No other access roads or driveways will be allowed on "G" Street.

Therefore, the high school may have only two direct access points to "G" Street (one at the ¼ mile location and a second at the extension of Farmland into the project site at the ½ mile location). The proposal to utilize only one point of access to "G" Street is acceptable.

B. *Frontage Improvements:*

The City will require frontage improvements (curb, gutter, sidewalk, park strip, etc) along the school's frontage on "G" Street, Farmland Road (extended), and along the north-south collector located ¼ mile west of and generally parallel to "G" Street.

C. *Traffic Study Considerations*:

Recent changes in the Regional Transportation Plan and Merced's community-wide transportation network need to be recognized and factored into the MCAG traffic model. These changes include the addition of the Campus Parkway between Highway 99 and UC Merced, the addition of the University / Castle Parkway between Castle Airport and UC Merced; and the loss of the Highway 59/Thornton connection to Highway 99 and associated western loop road of the City of Merced. Be sure that the traffic study incorporates these features of the future circulation system.

City staff will need to work with the traffic engineer to describe the circulation system that will be in place for each scenario, i.e. existing road conditions; road conditions upon opening of the high school; and road conditions in the long term. City staff anticipates that without "R" Street and other improvements existing in the short-term, significant impacts to Merced roadways can be anticipated.

D. *Bellevue Ranch Master Development Plan Related Improvements:*

The proposed high school site is within the boundary of the Bellevue Ranch Master Development Plan (BRMDP), and is known as sub-phase 20 (Attachment 1). As such, the high school district is bound to the project description and related approvals of that project. The application to change the City's General Plan's Land Use Diagram would also involve changing the Land Use Plan of the BRMDP.

The BRMDP's Phasing Plan, referred to as Table 6.1, is another key component of said plan. I have attached a copy for your review to help you determine if the high school project is consistent or not with the BRMDP Phasing Plan. Relative to the EIR, there are at least two implications: (1) if the project is not consistent with the Phasing Plan, then a proposal to modify the Phasing Plan is necessary to move the project forward (the *project description* needs to reflect changes to the BRMDP and vice versa); and (2) constructing the high school out-of-phase may lead to significant transportation and circulation impacts.

Other linkages to the BRMDP include:

1. Provision of open space corridor on the east side of Fahrens Creek;
2. Improvement of bridges adjacent to the site;
3. Dedication of adequate amounts of land for adjacent roadways, specifically – "G" Street has an overall right-of-way of 128-feet; Farmland extended has an overall right-of-way of 74-feet; and the north-south collector located ¼ mile west of and generally parallel to "G" Street has an overall right-of-way of 74-feet; and
4. Need for off-site improvements to be constructed before use of the site (please refer to Table 6.1, Attachment 2).

Coordination with other "owner" parties of the BRMDP will be necessary to implement the Phasing Plan.

If you have any questions regarding our comments, then please do not hesitate to contact me at your earliest convenience at 209-385-6858.

Sincerely,

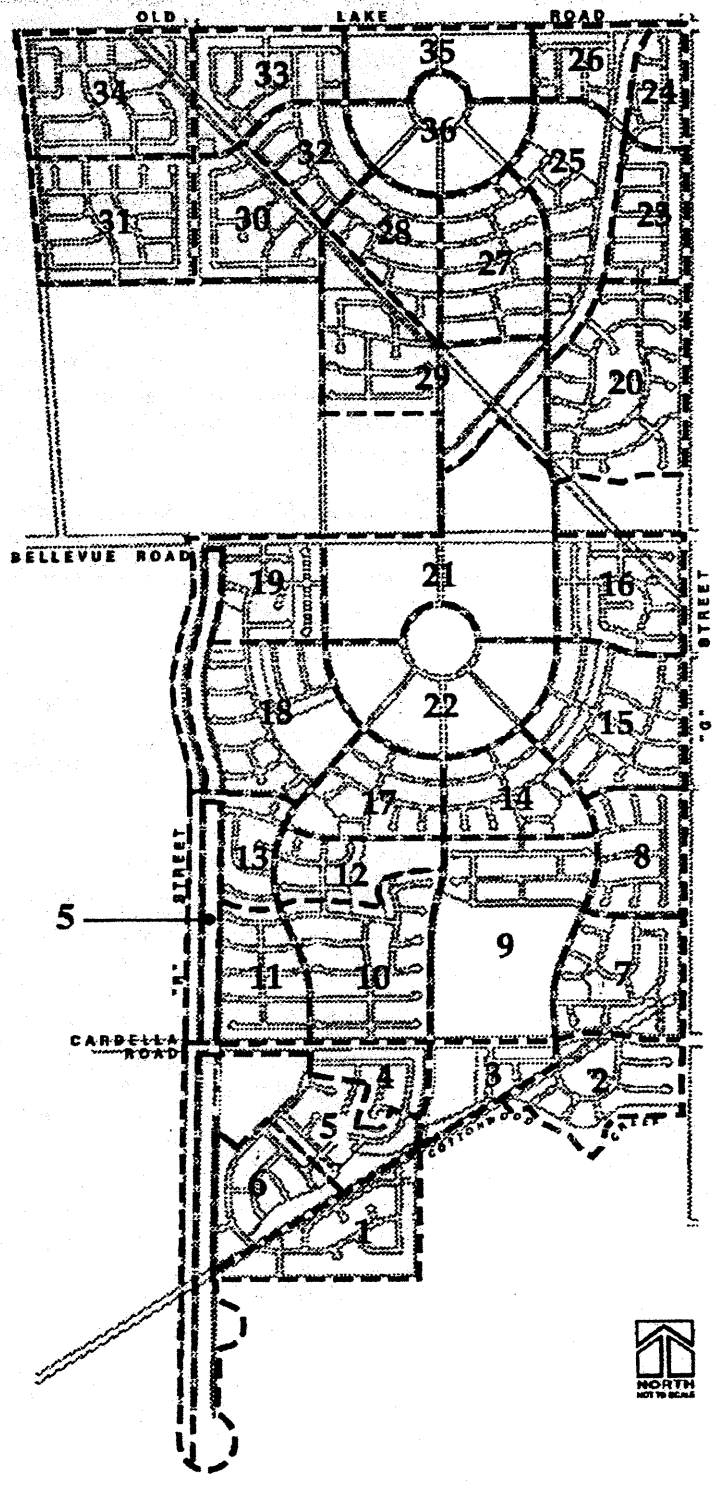
Bill King

Bill King
Principal Planner

CC: Robert H. Fore, MUHSD Superintendent
Michael Belluomini, MUHSD Director of Facilities Planning
Paul Bunton, AIA, Bunton Clifford Associates Inc.
Ken Anderson, Kd Anderson Transportation Engineers

MINOR PHASING DIAGRAM

BELLEVUE RANCH



Bellevue Ranch Master Development Plan (MDP) Table 6.1
Major Infrastructure Phasing
~~(Revised & Adopted by City Council on June 21, 2004)~~
(Revision & Adopted by Planning Staff on August 17, 2005)

The following table shows the same circulation and major infrastructure improvements listed in the MDP Table 6.1,adopted by the City Council May 15, 1995, in the columns for contiguous and non-contiguous improvements. Two new columns have been added to show the village interior improvements as well as concurrent construction phasing. This table indicates when certain improvements are **warranted** by Sub-Phase development. It does not address funding sources or the timing of available funding. In general, each Developer shall be responsible for construction of the warranted improvements, with the exception of wells, which the City will construct.

The Sub-Phases have been reorganized to show the order in which the Villages are now expected to be developed by Crosswinds and Woodside, for the area south of Bellevue Road. North of Bellevue Road the order shown in the adopted Table 6.1 shall be maintained except as noted. MDP Villages 6, 11, 13 and 19 have been excluded from this proposed sequence due to floodplain constraints.

Bellevue Ranch Master Development Plan
Table 6.1—Major Infrastructure Phasing

Sub-Phase (Village)	Contiguous Improvements	Non-Contiguous Improvements	Interior Improvements	Villages Able to Construct out of sequence with this sub-phase
BIIP I	**None**	• **M St (Barclay Rd. to Lehigh)(1/2 street)** • **M St Cottonwood Creek Bridge (1/2 Street)** • **Well Site (G St/ Cardella Rd)**	• **BIIP I Collectors** • **Sewer, Drain and Water** • **Detention Basins DB-P, T and U** • **Storm Drain and Sewer Pump Stations Outfalls**	• **Village 15, 16, 8A, 14 and 9**
8A	**None**	**None**	• **V-8A streets and utilities**	• **Concurrent with BIIP I**
15	**None**	• **Fire Station Dedication**	• **Village-15 streets and utilities**	• **Concurrent with BIIP I**
1	• M St: Lehigh to Cottonwood Ck (1/2 Street) • M St: Cottonwood Bridge (1/2 street) and bike crossing	• M St: Cottonwood Ck to Cardella Rd intersection (1/2 street)	• V-1 streets and utilities	• None Note: Sub-Phase (Village) 1 is not dependent on Sub-Phases BBIP I, 8A, and 15.
9	**None**	**None**	• **V-9 streets and utilities**	• **Concurrent with BIIP I**

Bellevue Ranch Master Development Plan
Table 6.1—Major Infrastructure Phasing

3	• Cardella Road: M St to Bancroft Dr (1/2 street) • Cottonwood Ck bike path/imp. • Cardella Rd (Bancroft Dr to G St) (1/2 street)	None	• V-3 streets and utilities • V-11 drainage basin	• Village 2 Note: Sub-Phase (Village) 3 is not dependent on Sub-Phases BBIP I, 8A, 9, and 15.
2	• Cottonwood Ck bike path/improvements	None	• V-2 streets and utilities	• Concurrent with Village 3
5	• Cardella: (M St to Round Hill Dr (Freemark)) (4 lanes total) • Well site (Cardella Rd/Fahrens Ck.)	None	• V-5 streets and utilities	• Villages 4, 10, & 12 Note: Sub-Phase (Village) 5 is not dependent on Sub-Phases BBIP I, 8A, 15 and 9.
14	**None**	**None**	• **Village-14 streets and utilities**	• **Concurrent with BIIP I**
16	• **Well Site (G Street/Bellevue Road)**	• **M St: Cardella to Barclay (remainder to full improvements)**	• **Village-16 streets and utilities**	• **Concurrent with BIIP I**
BIIP II	**None**	**None**	• **BIIP II Collector Roadways** • **Sewer, Drain and Water**	• **Village 8B, 7 and Lot Q**
4	• Cottonwood Ck pedestrian bridge	None	• V-4 streets and utilities	• Concurrent with Village 5
8B	**None**	**None**	• **V-8B streets and utilities**	• **Concurrent with BIIP II**
7	• **Cardella Rd (M St to G St)(1/2 street)** • **Cardella Road/G Street signal**		• **V-7 streets and utilities**	• **Concurrent with BIIP II**
10	None	None	• V-10 streets and utilities	• Concurrent with Villages 5 and BBIP I (M Street component only)
12	None	• M St/Cardella Rd signal[1]	• V-12 streets and utilities	• Concurrent with Village 10

Bellevue Ranch Master Development Plan
Table 6.1—Major Infrastructure Phasing

17	None	• R St (Yosemite to Cardella)(4 lanes total)[1,8] • Cardella Rd (Round Hill Dr (Freemark) to R St) (4 lanes total)[1,8] • Fahrens Ck Bridge at /Cardella Rd (4 lanes total)[1,8] • R St/Cardella Rd Signal[1]	• V-17 streets and utilities	• Villages 18 & 19 • Note: Sub-Phase (Village) 17 is not dependent on Sub-Phases BBIP I, 8A, 15, 9, 14, 16, BBIP II, 8B and 7. Excepting "M" Street portion of BBIP I.
18	None	• R Street: Cardella Rd to Franciscan Dr (4 lanes total)[1,8] • R Street: Franciscan Dr to Bellevue Rd (4 lanes total)[1,8] • Cardella Rd/Bancroft Signal • Franciscan Dr/R St signal[1,8] • R St/Bellevue Rd Signal[1] • Cardella Rd/Round Hill Dr (Freemark) signal	• V-18 streets and utilities	• Concurrent with Village 17 •
19	None	• Franciscan Dr (Freemark Ave to R St)[1,8] • Fahrens Creek Bridge at Franciscan Dr[8]	• V-19 streets and utilities	• Concurrent with Village 17
Lot Q	**None**	• **None**	• **Lot Q streets & utilities**	• **Concurrent with BIIP II**
22[6] (MFR)	• **M Street (Barclay Drive to Bellevue Road) (2 lanes) including Transit Circle w/ V-21 segments**	• **Bellevue/G Signal[1]** • **Well site (Bellevue/R St)[7]** • **Fahrens Creek Bridge at Bellevue Rd(3 lanes)[8]** • **Bellevue Rd: R St to G St (3 lanes)[8]**	**None**	**None**
21[6] (Comm)		• **M & Bellevue Signal[1]** • **G St: Bellevue to Merced College (4 lanes total)[3]** • **G & Foothill (Harvest) Signal[1]**	**None**	

Bellevue Ranch Master Development Plan
Table 6.1—Major Infrastructure Phasing

Above Bellevue Road	Same as adopted in the MDP, 5/15/95 (see below)	**Non-Contiguous Improvements**	Each village's streets and utilities
20	• Fahrens Creek Bypass (Drainage Phase 3)	• ~~G St: 2 lanes Bellevue to Yosemite (4 lanes total)~~ • ~~G St/Bellevue Traffic Signal~~ • ~~G St/Cardella Traffic Signal~~ • ~~G St/Collector St. Traffic Signal (in Phase 15)~~ • Fahrens Creek Bypass (Phase 3)	• V. 20 streets and utilities
23	None	None	• V. 23 streets and utilities
24	• Well Site No. 6 • Old Lake Rd (2 lanes)	None	• V. 24 streets and utilities
25	• Collector St./Fahrens Cr. Bridge (near Phase 23/24) • Collector St/Fahrens Cr. Bridge (near Phase 20)	None	• V. 25 streets and utilities
26	• Old Lake Rd: 2 lanes • Old Lake Rd/Fahrens Creek Bridge	• G St: 2 lanes Old Lake Rd to Bellevue Rd (4 lanes total) • G St/Collector St Traffic Signal (near Phase 20/23)	• V. 26 streets and utilities
27	• M St: 2 lane ultimate section	• Collector St/Fahrens Cr. Bridge (near Phase 20/23) • N/S Collector/Bellevue Signal	• V. 27 streets and utilities
28	None	None	• V. 28 streets and utilities
29	• M St: 2 lane ultimate section	• N/S Collector/Fahrens Creek Bridge (between M & R Sts.) • M St: 2 lanes (So. To Bellevue) • M St/Fahrens Creek Bridge	• V. 29 streets and utilities
30	• R St: 2 lanes • Fire Station	• R St: 2 lanes ½ mile north of Bellevue to Bellevue Rd	• V. 30 streets and utilities

Bellevue Ranch Master Development Plan
Table 6.1—Major Infrastructure Phasing

		• R St: 2 lanes Bellevue to ½ mile south of Bellevue (4 lanes total) • R St/Fahrens Creek Bridge: 2 lanes (4 lanes total) • R St/Collector St Traffic Signal (near Phases 13/18)	
31	None	None	• V. 31 streets and utilities
32	None	None	• V. 32 streets and utilities
33	• R St: 2 lanes • Old Lake Rd: 2 lanes	• Old Lake Rd: 2 lanes (in Phase 35)	• V. 33 streets and utilities
34	None	None	• V. 34 streets and utilities
35	None	None	• V. 35 streets and utilities
36	None	None	• V. 36 streets and utilities

Color Coding of Responsible Areas:

Red Bold=Bellevue Ranch East Improvements (Crosswinds)
Blue Underlined=Bellevue Ranch West Improvements (Woodside)
Black Bold=Bellevue Ranch Improvements, joint responsibility in Villages 21 and 22
Black=Bellevue Ranch Improvements, North of Bellevue Road (unchanged since May 15, 1995).
[Phases are as noted on Minor Phasing Diagram in Master Development Plan—page 60 and Attachment B of Planning Commission Staff Report #04-13 2nd Addendum]

Notes:

1. The R Street improvements as well as the staging of signal improvements throughout the plan area have been revised as recommended by the memorandum dated December 2, 2004 entitled "Timing of off-site roadway improvements for Bellevue Ranch" prepared by Fehr & Peers.

2. Not used.

3. The G Street improvements have been revised as recommended by the memorandum dated December 2, 2004 entitled "Timing of off-site roadway improvements for Bellevue Ranch" prepared by Fehr & Peers.

4. Projects revised due to lack of Corps of Engineers drainage projects:
   a. Cottonwood Creek Bypass (Drainage Phase 1, 2): By Bellevue Ranch West, Villages 1-3.
   b. Fahrens Creek Bypass (Drainage Phase 1, 2, 3): deleted

5. Project moved to a later phase: Bellevue Rd: M to R (last 1 of 6 lanes) is moved into Phase 3/4.

6. The timing and responsibility (Crosswinds or Woodside) for these improvements in Villages 21 (commercial) and 22 (multi-family) will be determined at the time of conditional use permit approval for these areas.

7. Well site may be required sooner if deemed necessary by the City Engineer.

8. Improvements shall be completed prior to occupancy of any unit in this village.

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Arnold
Schwarzenegger
Governor

Sean Walsh
Director

RECEIVED
JAN 10 2006
M.U.H.S.D.
FACILITIES PLANNING

Notice of Preparation

January 3, 2006

To: Reviewing Agencies

Re: Merced Union High School District, Bellevue High School
SCH# 2006011001

Attached for your review and comment is the Notice of Preparation (NOP) for the Merced Union High School District, Bellevue High School draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Dave Hanham
Merced Union High School District
P.O. Box 2147
3105 G Street
Merced, CA 95344

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Project Analyst, State Clearinghouse

Attachments
cc: Lead Agency

Document Details Report
State Clearinghouse Data Base

SCH# 2006011001
Project Title Merced Union High School District, Bellevue High School
Lead Agency Merced Union High School District

Type NOP Notice of Preparation

Description The campus will include classrooms, administration buildings, a library, an outdoor athletic stadium, and various athletic facilities. Buildings will occupy 191,575 square feet, parking area 204,900 square feet (623 spaces) and athletic fields 1,409,000 square feet.

Lead Agency Contact

Name Dave Hanham
Agency Merced Union High School District
Phone (209) 385-6553 **Fax**
email
Address P.O. Box 2147
3105 G Street
City Merced **State** CA **Zip** 95344

Project Location

County Merced
City Merced
Region
Cross Streets Southwest corner of Farmland and G Street
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways 99
Airports
Railways Atchison, Topeka & Santa Fe
Waterways
Schools Merced College
Land Use Zoning is A-1

Project Issues

Reviewing Agencies Resources Agency; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Game, Region 4; Department of Health Services; Native American Heritage Commission; California Highway Patrol; Caltrans, District 10; Regional Water Quality Control Bd., Region 5 (Fresno)

Date Received 01/03/2006 **Start of Review** 01/03/2006 **End of Review** 02/01/2006

Note: Blanks in data fields result from insufficient information provided by lead agency.

NOP Distribution List

County: Mercea

SCH# 2006011001

Resources Agency

- [x] **Resources Agency**
  Nadell Gayou
- [ ] **Dept. of Boating & Waterways**
  David Johnson
- [ ] **California Coastal Commission**
  Elizabeth A. Fuchs
- [ ] **Colorado River Board**
  Gerald R. Zimmerman
- [ ] **Dept. of Conservation**
  Roseanne Taylor
- [ ] **California Energy Commission**
  Roger Johnson
- [ ] **Dept. of Forestry & Fire Protection**
  Allen Robertson
- [x] **Office of Historic Preservation**
  Wayne Donaldson
- [x] **Dept of Parks & Recreation**
  Environmental Stewardship Section
- [ ] **Reclamation Board**
  DeeDee Jones
- [ ] **S.F. Bay Conservation & Dev't. Comm.**
  Steve McAdam
- [x] **Dept. of Water Resources**
  Resources Agency
  Nadell Gayou
- [ ] _____
  Conservancy

Fish and Game

- [ ] **Depart. of Fish & Game**
  Scott Flint
  Environmental Services Division
- [ ] **Fish & Game Region 1**
  Donald Koch
- [ ] **Fish & Game Region 2**
  Banky Curtis
- [ ] **Fish & Game Region 3**
  Robert Floerke
- [x] **Fish & Game Region 4**
  Mike Mulligan
- [ ] **Fish & Game Region 5**
  Don Chadwick
  Habitat Conservation Program
- [ ] **Fish & Game Region 6**
  Gabrina Gatchel
  Habitat Conservation Program
- [ ] **Fish & Game Region 6 I/M**
  Tammy Allen
  Inyo/Mono, Habitat Conservation Program
- [ ] **Dept. of Fish & Game M**
  George Isaac
  Marine Region

Other Departments

- [ ] **Food & Agriculture**
  Steve Shaffer
  Dept. of Food and Agriculture
- [ ] **Depart. of General Services**
  Public School Construction
- [ ] **Dept. of General Services**
  Robert Sleppy
  Environmental Services Section
- [x] **Dept. of Health Services**
  Veronica Rameriz
  Dept. of Health/Drinking Water

Independent Commissions,Boards

- [ ] **Delta Protection Commission**
  Debby Eddy
- [ ] **Office of Emergency Services**
  Dennis Castrillo
- [ ] **Governor's Office of Planning & Research**
  State Clearinghouse
- [x] **Native American Heritage Comm.**
  Debbie Treadway
- [ ] **Public Utilities Commission**
  Ken Lewis
- [ ] **State Lands Commission**
  Jean Sarino
- [ ] **Tahoe Regional Planning Agency (TRPA)**
  Cherry Jacques

Business, Trans & Housing

- [ ] **Caltrans - Division of Aeronautics**
  Sandy Hesnard
- [ ] **Caltrans - Planning**
  Terri Pencovic
- [x] **California Highway Patrol**
  John Olejnik
  Office of Special Projects
- [ ] **Housing & Community Development**
  Lisa Nichols
  Housing Policy Division

Dept. of Transportation

- [ ] **Caltrans, District 1**
  Rex Jackman
- [ ] **Caltrans, District 2**
  Marcelino Gonzalez
- [ ] **Caltrans, District 3**
  Katherine Eastham
- [ ] **Caltrans, District 4**
  Tim Sable
- [ ] **Caltrans, District 5**
  David Murray
- [ ] **Caltrans, District 6**
  Marc Birnbaum
- [ ] **Caltrans, District 7**
  Cheryl J. Powell
- [ ] **Caltrans, District 8**
  Dan Kopulsky
- [ ] **Caltrans, District 9**
  Gayle Rosander
- [x] **Caltrans, District 10**
  Tom Dumas
- [ ] **Caltrans, District 11**
  Mario Orso
- [ ] **Caltrans, District 12**
  Bob Joseph

Cal EPA

Air Resources Board

- [ ] Airport Projects
  Jim Lerner
- [ ] Transportation Projects
  Kurt Karperos
- [ ] Industrial Projects
  Mike Tollstrup
- [ ] **California Integrated Waste Management Board**
  Sue O'Leary
- [ ] **State Water Resources Control Board**
  Jim Hockenberry
  Division of Financial Assistance
- [ ] **State Water Resources Control Board**
  Student Intern, 401 Water Quality Certification Unit
  Division of Water Quality
- [ ] **State Water Resouces Control Board**
  Steven Herrera
  Division of Water Rights
- [ ] **Dept. of Toxic Substances Control**
  CEQA Tracking Center
- [ ] **Department of Pesticide Regulation**

Regional Water Quality Control Board (RWQCB)

- [ ] **RWQCB 1**
  Cathleen Hudson
  North Coast Region (1)
- [ ] **RWQCB 2**
  Environmental Document Coordinator
  San Francisco Bay Region (2)
- [ ] **RWQCB 3**
  Central Coast Region (3)
- [ ] **RWQCB 4**
  Jonathan Bishop
  Los Angeles Region (4)
- [ ] **RWQCB 5S**
  Central Valley Region (5)
- [x] **RWQCB 5F**
  Central Valley Region (5)
  Fresno Branch Office
- [ ] **RWQCB 5R**
  Central Valley Region (5)
  Redding Branch Office
- [ ] **RWQCB 6**
  Lahontan Region (6)
- [ ] **RWQCB 6V**
  Lahontan Region (6)
  Victorville Branch Office
- [ ] **RWQCB 7**
  Colorado River Basin Region (7)
- [ ] **RWQCB 8**
  Santa Ana Region (8)
- [ ] **RWQCB 9**
  San Diego Region (9)

- [ ] **Other** _____

Last Updated on 08/10/05

Copy to Terry S., Bob F., David H., Paul Burton,

Department of Toxic Substances Control

Alan C. Lloyd, Ph.D.
Agency Secretary
Cal/EPA

Maureen F. Gorsen, Director
1011 North Grandview Avenue
Glendale, California 91201

Arnold Schwarzenegger
Governor

RECEIVED
FEB - 6 2006
M.U.H.S.D.
FACILITIES PLANNING

February 2, 2006

Mr. Michael Belluomini
Director of Facilities Planning
Merced Union High School District
Castle Airport, 3430 A Street
Atwater, California 95301

APPROVAL OF PHASE I ENVIRONMENTAL SITE ASSESSMENT, MERCED UNION HIGH SCHOOL DISTRICT, PROPOSED HIGH SCHOOL SITE, G STREET AND FARMLAND AVENUE, MERCED, MERCED (SITE CODE 104505)

Dear Mr. Belluomini:

The Department of Toxic Substances Control (DTSC) reviewed the "Phase I Environmental Site Assessment Update" (Phase I) (Kleinfelder, Inc., August 16, 2005) received on September 6, 2005 by DTSC. Additional information was received from Kleinfelder on January 9, 2006 via email in response to DTSC's request dated on September 30, 2005 as well as on January 23, 2006 via email in response to DTSC's request dated on January 13, 2006. The Phase I describes current and historical land uses and identifies environmental conditions.

According to the Phase I, the approximately 56 acres site consists of fallow agricultural land. The site has been used as dry farming, vegetable farming and grazing land. Because of the information for the most recent land use and the limited information for the historical application of pesticides, DTSC does not concur with the Phase I recommendation of no action.

Based on the information provided, DTSC has determined that completion of a Preliminary Environmental Assessment (PEA) is needed for this site. The purpose of the PEA is to determine whether a release or threatened release of hazardous material or naturally occurring hazardous material may pose a threat to public health or the environment. The PEA should address, but may not be limited to, the following recognized environmental conditions:

- Potential for pesticides and heavy metals in soil from past agricultural use.

Pursuant to Education Code section 17213.1, subdivision (a)(4)(B), if the Merced Union High School District (District) elects to pursue site acquisition or construction, the District shall enter into an Environmental Oversight Agreement (EOA) with DTSC to oversee the preparation of the PEA. A copy of the Environmental Oversight Program application for the EOA may be obtained from the DTSC Web site at dtsc.ca.gov. Please forward the completed application, signed by an authorized District representative, to:

Ms. Robbie Morris
Oversight Agreement Coordinator
School Property Evaluation and Cleanup Division
Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, California 90630-4732

Ms. Morris will prepare and forward an agreement for review and signature. Subsequently, a project manager will contact the District to schedule a scoping meeting. For additional information regarding the PEA process or entering into an agreement, please contact Ms. Morris at (714) 484-5315 or rmorris@dtsc.ca.gov.

If you have any questions regarding the project, please contact Ms. Ann Chang, Project Manager, at 818-551-2834 or me at 818-551-2172.

Sincerely,

Javier Hinojosa, Chief
Schools Unit – Glendale Office
School Property Evaluation and Cleanup Division

cc: See next page.

cc: Mr. Michael O'Neill
California Department of Education
1430 N Street, Suite 1201
Sacramento, California 95814

Mr. Jason Paul, P.G.
Senior Geologist
Kleinfelder, Inc.
1410 F Street
Fresno, California 93706

Appendix B

URBEMIS Emissions

URBEMIS 2002 For Windows 8.7.0

File Name: L:\Projects\2005\050588\DEIR\Merced High School URBEMIS.urb
Project Name: Merced High School
Project Location: San Joaquin Valley
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Tons/Year)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	0.45	0.39	0.40	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	13.47	14.56	125.99	0.11	10.57

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	13.92	14.95	126.39	0.11	10.58

URBEMIS 2002 For Windows 8.7.0

File Name: L:\Projects\2005\050588\DEIR\Merced High School URBEMIS.urb
Project Name: Merced High School
Project Location: San Joaquin Valley
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Tons/Year)

AREA SOURCE EMISSION ESTIMATES (Tons per Year, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.03	0.39	0.33	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00
Landscaping	0.01	0.00	0.07	0.00	0.00
Consumer Prdcts	0.00	-	-	-	-
Architectural Coatings	0.41	-	-	-	-
TOTALS (tpy, unmitigated)	0.45	0.39	0.40	0.00	0.00

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
High school	13.47	14.56	125.99	0.11	10.57
TOTAL EMISSIONS (tons/yr)	13.47	14.56	125.99	0.11	10.57

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2005 Season: Annual

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
High school		2.10 trips/students	2,400.00	5,040.00
		Sum of Total Trips		5,040.00
		Total Vehicle Miles Traveled		38,127.60

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	56.10	2.30	97.10	0.60
Light Truck < 3,750 lbs	15.10	4.00	93.40	2.60
Light Truck 3,751- 5,750	15.50	1.90	96.80	1.30
Med Truck 5,751- 8,500	6.80	1.50	95.60	2.90
Lite-Heavy 8,501-10,000	1.00	0.00	80.00	20.00
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	10.00	20.00	70.00
Heavy-Heavy 33,001-60,000	0.80	0.00	12.50	87.50
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.10	0.00	0.00	100.00
Motorcycle	1.60	87.50	12.50	0.00
School Bus	0.30	0.00	0.00	100.00
Motor Home	1.40	14.30	78.60	7.10

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)						
High school				10.0	5.0	85.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Area

Changes made to the default values for Operations

Appendix C

Reconnaissance Level Biological Survey

ADMISTRATIVE DRAFT

BIOLOGICAL RESOURCE ANALYSIS
MERCED UNION HIGH SCHOOL DISTRICT
MERCED COUNTY, CALIFORNIA

July 12, 2007

Prepared for

Merced Union High School District
P.O. Box 2147
Merced, California 95344-0147

Prepared by

Monk & Associates, Inc.
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595

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FIGURES

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Figure 1. Merced Union High School District Project Site Regional Map.

Figure 2. Merced Union High School District Project Site Location Map.

Figure 3. Aerial Photograph of the Merced Union High School District Project Site and Surrounding Land Use.

Figure 4. Soils of the Merced Union High School District Project Site.

Figure 5. Closest Known Records for Special Status Species within 10 Miles of the Merced Union High School District Project Site.

TABLES

(Behind Tab at Back of Report)

Table 1. Plant Species Observed on the Merced Union High School District Project Site.

Table 2. Wildlife Species Observed on the Merced Union High School District Project Site.

Table 3. Special-Status Plant Species Known To Occur in the Vicinity of the Merced Union High School District Project Site.

Table 4. Special-Status Animal Species Known To Occur in the Vicinity of the Merced Union High School District Project Site.

1. INTRODUCTION

Monk & Associates, Inc. (M&A) has prepared this biological resource analysis for Merced Union School District's proposed Merced Union High School project (the proposed project) located in Merced County, California (Figures 1 and 2)(the project site). The purpose of our analysis is to provide a description of existing biological resources on the project site and to identify potentially significant impacts that could occur to sensitive biological resources from construction of the proposed project.

Biological resources include common plant and animal species, and special-status plants and animals as designated by the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), National Marine Fisheries Service (NMFS), and other resource organizations including the California Native Plant Society (CNPS). Biological resources also include waters of the United States and State, as regulated by the U.S. Army Corps of Engineers (Corps), California Regional Water Quality Control Board (RWQCB), and CDFG.

This biological resources analysis provides mitigation measures for "potentially significant" and "significant" impacts that could occur to biological resources from construction of the proposed project. When implemented, the mitigation measures would reduce impacts to levels considered less than significant pursuant to the California Environmental Quality Act (CEQA). Accordingly, this report is suitable for review and inclusion in any review being conducted by the Merced Union High School District (lead agency) for the proposed project pursuant to the CEQA.

2. PROPERTY LOCATION AND SETTING

The project site is located immediately north of the City of Merced, in Merced County (Figures 1 and 2). The site is north of Bellevue Road and is bordered by G Street to the east. The 58-acre site extends from G Street west to the centerline of Fahrens Creek, which occurs along the northwestern project site boundary. Development of the high school on the project site will not impact Fahrens Creek or the environment immediately adjacent to the creek. The project site is essentially surrounded by agricultural land on all sides with the exception of new high density housing development immediately to the south, and a few low density single family homes to the east. Figure 3 provides an aerial photograph of the project site depicting surrounding land uses.

3. PROJECT SITE HISTORY

Based on the research conducted by Kleinfelder Inc. and the background information gathered by the Merced Union High School District, the project site was leveled approximately 40 years ago for agricultural purposes. The site has been intermittently farmed since that period with hay crops and intensive, irrigated row crops. A Phase 1 Environmental Site Assessment report prepared by Kleinfelder, Inc. (dated August 2005) states that the site has been "used as agricultural farmland since 1957," basing this conclusion on aerial photographic evidence and interviews with property owners and Merced County Agricultural Commissioner's Office personnel. Aerial photographs of the site from 1942, 1950, 1957, 1961, 1967, and 1973 indicate that the project site was once bisected by several irrigation canals that provided irrigation water directly to crops on the site. These canals no longer exist on the site. M&A confirmed that the historical aerial photographs of the project site indicate that the site was either in irrigated

pasture (flood irrigated) or in row crops starting in 1957. More recently, the site has been used grow sugar beets and tomatoes.

4. ANALYSIS METHODS

4.1 Background Research

Prior to preparing this biological resource constraints analysis, Monk & Associates researched the most recent version of the California Department of Fish and Game's (CDFG) Natural Diversity Database, RareFind 3.1 application (CNDDB) for historic and recent records of special-status plant and animal species (that is, threatened, endangered, rare) known to occur in the region of the project site. In addition, Monk & Associates researched California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Plants of California* (CNPS 2001) for records of special-status plants known in the region of the Merced, California U.S. Geological Survey 7.5 minute quadrangle and the surrounding eight quadrangles. All special-status species records from these quadrangles were compiled in tables.

M&A reviewed the Biological Resources section of the *Draft Environmental Impact Report* (DEIR) prepared by Quad Knopf (dated June 2006); DEIR Appendix *Reconnaissance Level Biological Survey* report prepared by Quad Knopf (dated April 2006), *Final Environmental Impact Report* (FEIR) prepared by Quad Knopf (dated October 2006), including the California Department of Fish and Game (CDFG) comment letter (dated August 2006) and the Responses to CDFG Comments, and the Administrative Draft Errata for the FEIR prepared by Quad Knopf (dated October 2006).

In addition, M&A reviewed the *Phase 1 Environmental Site Assessment Update – Proposed School Site, Merced Union High School District* prepared by Kleinfelder Inc. (dated August 2005), and two reports prepared by Mr. Lawrence Silva that include *A Review of Biological Survey Related Documents That Were Prepared for the Proposed Bellevue High School Site* (dated January 12, 2007), and *Environmental Surveys of Fahrens Creek Environs for the Future Bellevue High School Site, Merced, California* (dated May 8, 2007).

4.2 Site Reconnaissance Survey

M&A biologists Mr. Geoff Monk, Ms. Hope Kingma and Ms. Erin Hanlon surveyed the project site on April 2, 2007. The site visit was conducted to determine if the site provided any natural/native plant communities and associated wildlife habitats, or supported any areas that could be considered by the U.S. Army Corps of Engineers (Corps) as "waters of the United States," or by the Regional Water Quality Control Board (RWQCB) as "waters of the State." During this survey, notes were made on all plants and animals observed on the project site.

4.3 Surveys Preformed By Others

Mr. Lawrence Silva (Silva Environmental Services) conducted wildlife surveys on the project site, including the Fahrens Creek corridor and in the area immediately surrounding the proposed project site. Mr. Silva visited the site ten (10) times during the months of April and May in 2007. Specifically, Mr. Silva surveyed the site for ten special-status species, including valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), Pacific pond turtle (*Actinemys*

marmorata), giant garter snake (*Thamnophis gigas*), California red-legged frog (*Rana aurora draytonii*), California tiger salamander (*Ambystoma californiense*), western spadefoot toad (*Scaphiopus hammondii*), tricolored blackbird (*Agelaius tricolor*), western burrowing owl (*Athene cunicularia hypugaea*), Swainson's hawk (*Buteo swainsoni*), and San Joaquin kit fox (*Vulpes macrotis mutica*). In addition, Mr. Siva conducted raptor nesting surveys in the vicinity of the project site.

5. RESULTS OF RESEARCH AND PROJECT SITE ANALYSES

The results of M&A's background research combined with the various field surveys are provided in the sections below.

5.1 Soils

Soils on the project site as mapped by the Soil Conservation Service (USDA 2007) are shown in Figure 4. Five soil types are within the project site's boundaries: Bear Creek clay loam, 0-3 percent slopes (BaA), Wyman clay loam, 0-3 percent slopes (WoA), Wyman clay loam, deep over hardpan, 0-1 percent slopes (WnA), Yokohl clay loam, 0-3 percent slopes (YbA), and Peters clay, 0-8 percent slopes (PnB). A short description of each soil type follows.

Bear Creek clay loam is comprised of eroded material found on narrow alluvial fans. The soil texture is slightly gravelly, and therefore the water-holding capacity, permeability, and drainage ability of this soil is moderate. The surface is nearly level with a 0-3 percent slope and the runoff rate is low. Bear Creek clay loam is a hydric soil. Hydric soils are one component of wetlands. To constitute wetland, a site must exhibit hydric soils, hydrology (some reason that water would be there to an extent greater than from just normal rainfall sheetwater flow), and finally must be dominated by hydrophytic vegetation (plants adapted to wetland conditions). In the absence of all three characters, a site would not be considered wetland pursuant to the Clean Water Act.

Wyman clay loam soils (0-3 percent slopes, and 0-1 percent slopes deep over hardpan) are also found on the project site and are formed from basic igneous alluvium. These well-drained soils are finely textured. Wyman clay loam soils, 0-3 percent slopes, have a high water-holding capacity while the Wyman clay loam , deep over hardpan, 0-1 percent slope soils have a moderate water-holding capacity; both soils have a medium rate of runoff. Wyman clay loam soils are not hydric.

Yokohl clay loam soils are formed from basic igneous rocks on gently sloping terraces and alluvial fans. The finely textured clay loam soil is slowly permeable and has a thick claypan resulting in a very high runoff rate; however the soil is well-drained and has a low water holding capacity. Yokohl clay loam is not a hydric soil.

Peters clay, 0-8 percent slope soil is comprised of residuum weathered from sedimentary rock. Peters clay is a well drained soil with a low water holding capacity, slow permeability, and a high runoff rate. Peters clay, 0-8 percent slopes is not a hydric soil. (USDA. 1962, NRCS 1995).

5.2 Plant Communities and Associated Wildlife Habitats

A complete list of plant species observed on the project site is presented in Table 1. Nomenclature used for plant names follows *The Jepson Manual* (Hickman 1993) and changes made to this manual as published on the Jepson Interchange Project website (http://ucjeps.berkeley.edu/interchange/index.html). During our site survey, we identified 38 plant species on the project site. Of these 38 species, 5 species are native to California and 33 species are grasses and forbs introduced to California. Table 2 is a list of wildlife species observed on the project site.

With the exception of the levee along Fahrens Creek, the project area is entirely devoted to agriculture. Three plant communities found in the project area are the direct result of human intervention, including agrestal (agricultural field), a creekside levee, and a ruderal roadside ditch. Consequently, many of the potential habitats are highly manipulated and disturbed, providing habitat value only to common wildlife species that are adapted to living in association with man. Fahrens Creek, a relatively natural feature, occurs along the northwestern project site boundary. This creek supports some native plant species.

5.2.1 AGRESTAL (AGRICULUTURAL FIELD)

The existing vegetation over most of the project area is classified as agrestal (Holland & Keil 1995) and is the result of long-term ground manipulation and cultivation. Plants introduced by man, generally for agricultural commodity crops, dominate these communities. The cultivation of agricultural fields continually disturbs the soil. As a result, these areas typically do not support native plant species or communities. At the time of M&A's April 2007 site survey, the agricultural field appeared to have been recently harvested and was disced under. The dominant grass and forb species found in the agricultural field include such non-native species such Italian ryegrass (*Lolium multiflorum*), ripgut brome (*Bromus diandrus*), fiddleneck (*Amsinckia menziesii*), mustards (*Brassica nigra, Sinapis arvensis*), field chickweed (*Cerastium arvense*), and shepherd's purse (*Capsella bursa-pastoris*). Native plant species found in this field were sparsely distributed and included red maids (*Calandrinia ciliata*) and gumplant (*Grindelia camporum* ssp. *camporum*).

In general agrestal areas do not provide habitat for many wildlife species. The intense cultivation and manipulation of the soil, including the application of pesticide, herbicide, and fertilizer, and the history of row crop irrigation, tends to limit the number of species that occupy or use such cropland habitats. Nevertheless, fields can provide habitat for a number of resident species, particularly small mammal populations, including California meadow vole (*Microtus californicus*), western harvest mice (*Reithrodontomys megalotis*), and deer mice (*Peromyscus maniculatus*). These rodents in turn serve as prey for various raptors including red-tailed hawk (*Buteo jamaicensis*), Swainson's hawk, white-tailed kite (*Elanus leucurus*), and red-shouldered hawk (*Buteo lineatus*), all of which frequent the project area. Other avian species observed onsite (or foraging over the site) included: red shouldered hawk, red-tailed hawk, American kestrel (*Falco sparverius*), killdeer (*Charadrius vociferus*), long-billed curlew (*Numenius americanus*), barn swallow (*Hirundo rustica*), western kingbird (*Tyrannus verticalis*), American crow (*Corvus brachyrhynchos*), and western meadowlark (*Sturnella neglecta*).

5.2.2 CREEKSIDE LEVEE

A levee along the northwestern edge of the property separates the project site from Fahrens Creek. The levee was installed along Fahrens Creek by the Merced Irrigation District to act as a flood control levee. The levee supports ruderal vegetation which generally indicates highly disturbed conditions, suggesting that this levee is frequently maintained. Ruderal species found along this levee included milk thistle (*Silybum marianum*), yellow star thistle (*Centaurea solstitialis*), mustard, prickly lettuce (*Lactuca serriola*), soft chess (*Bromus hordeaceus*), and geranium (*Geranium dissectum*). A few native Ithuriel's spear (*Triteleia laxa*) also occur along the levee.

The ruderal vegetation along the levee provides habitat for several bird species, including savannah sparrow (*Passerculus sandwichensis*), white-crowned sparrow (*Zonotrichia leucophrys*), house finch (*Carpodacus mexicanus*), ring-necked pheasant (*Phasianus colchicus*) and mourning doves (*Zenaida macroura*). In addition, California ground squirrels (*Spermophilus beechyi*) burrows and Botta's pocket gopher (*Thomomys bottae*) mounds were observed along this levee. It is also likely that the levee along Fahrens Creek serves as a migration or movement corridor for local wildlife species, including coyote (*Canis latrans*) (large canid scat observed) and possibly red fox (*Vulpes vulpes*).

5.2.3 RUDERAL ROADSIDE DITCH

The eastern edge of the property is bounded by G Street. A shallow roadside ditch occurs along the project site boundary and G Street. This shallow ditch, which is dry except immediately after rainfall events, is a typical roadside ditch characterized as shallow, mostly barren, and gravel laden. This ditch is unlikely to provide any habitat value to local wildlife species but does support a sparse occurrence of common ruderal plant species including prickly lettuce, common groundsel (*Senecio vulgaris*), curly dock (*Rumex crispus*), common chickweed (*Stellaria media*), bindweed (*Convolvulus arvensis*) and bedstraw (*Galium aparine*). A few small sapling box elders (*Acer negundo* ssp. *californica*) and silver dollar gum trees (*Eucalyptus polyanthemos*) have also become established along this ditch.

5.2.4 FAHRENS CREEK

Fahrens Creek is a relatively natural feature that occurs along the northwestern project site boundary. This creek habitat supports some native plant species. Sparse riparian vegetation occurs along this creek, including sporadic occurrences of arroyo willow (*Salix lasiolepis*), sandbar willow (*Salix sessilifolia*), and cottonwood (*Populus fremontii*). Wetland-associated species observed along this creek channel include hard-stem tule (*Schoenoplectus acutus occidentalis*), water primrose (*Ludwigia peploides*), hoary nettle (*Urtica dioica* ssp. *holosericea*), Himalayan blackberry (*Rubus discolor*), California rose (*Rosa californica*), tall flatsedge (*Cyperus eragrostis*), sedge (*Carex* sp.), rushes (*Juncus balticus* and *J. effusus*), and curly dock.

In April 2007, M&A identified an active red-tailed hawk nest in one of the willows along Fahrens Creek approximately 300 feet southwest of the project site. Other wildlife species observed along Fahrens Creek included red-winged blackbird (*Agelaius phoeniceus*), song sparrow (*Melospiza melodia*), black phoebe (*Sayornis nigricans*), mallard (*Anas platyrhynchos*), great blue heron (*Ardea herodias*), common snipe (*Gallinago gallinago*) and bullfrog (*Rana*

catesbeiana). Finally, during M&A's site survey in April of 2007, an American beaver (*Castor canadensis*) dam was observed along Fahrens Creek, immediately southwest of the project site. This dam backs creek water up in Fahrens Creek on the project site vicinity.

6. POTENTIALLY OCCURRING SPECIAL-STATUS PLANT AND ANIMAL SPECIES

Based on the search of CDFG's Natural Diversity Database (RareFind 3 application (CNDDB), several special-status plant and wildlife species are known to occur within 10 miles of the project site. Figure 5 provides a graphical representation of the closest known records of special-status species recorded within 10 miles of the project site. Special-status plant species known to occur in the vicinity of the project site are listed in Table 3. Special-status wildlife species known to occur within ten miles of the project site are listed in Table 4. Below we provide the definition of what constitutes a special-status species.

6.1 Definition of Special-Status Species

For purposes of this analysis, special-status species are plants and animals that are legally protected under the California and Federal Endangered Species Acts (CESA and FESA, respectively) or other regulations, and species that are considered rare by the scientific community. Special-status species are defined as:

- plants and animals that are listed or proposed for listing as threatened or endangered under the CESA (Fish and Game Code §2050 *et seq*.; 14 CCR §670.1 *et seq.*) or the FESA (50 CFR 17.12 for plants; 50 CFR 17.11 for animals; various notices in the Federal Register [FR] for proposed species);

- plants and animals that are candidates for possible future listing as threatened or endangered under the FESA (50 CFR 17; FR Vol. 64, No. 205, pages 57533-57547, October 25, 1999); and under the CESA (California Fish and Game Code §2068);

- plants and animals that meet the definition of endangered, rare, or threatened under the CEQA (14 CCR §15380) that may include species not found on either State or Federal Endangered Species lists;

- Plants occurring on Lists 1A, 1B, 2, 3, and 4 of CNPS' *Electronic Inventory* (CNPS 2001). The California Department of Fish and Game (CDFG) recognizes that Lists 1A, 1B, and 2 of the CNPS inventory contain plants that, in the majority of cases, would qualify for State listing, and CDFG requests their inclusion in EIRs. Plants occurring on CNPS Lists 3 and 4 are "plants about which more information is necessary," and "plants of limited distribution," respectively (CNPS 2001). Such plants may be included as special-status species on a case by case basis due to local significance or recent biological information;

- migratory nongame birds of management concern listed by U.S. Fish and Wildlife Service (Migratory Nongame Birds of Management Concern in the United States: The list 1995; Office of Migratory Bird Management; Washington D.C.; Sept. 1995);

- animals that are designated as "species of special concern" by CDFG (2006);

- Animal species that are “fully protected” in California (Fish and Game Codes 3511, 4700, 5050, and 5515).

In the paragraphs below we provide further definitions of legal status as they pertain to the special-status species discussed in this report or in the attached tables.

Federal Endangered or Threatened Species. A species listed as Endangered or Threatened under the FESA is protected from unauthorized “take” (that is, harass, harm, pursue, hunt, shoot, trap) of that species. If it is necessary to take a Federal listed Endangered or Threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from the USFWS prior to initiating the take.

State Threatened Species. A species listed as Threatened under the state Endangered Species Act (§2050 of California Fish and Game Code) is protected from unauthorized “take” (that is, harass, pursue, hunt, shoot, trap) of that species. If it is necessary to “take” a state listed Threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from CDFG prior to initiating the “take.”

California Species of Special Concern. These are species in which their California breeding populations are seriously declining and extirpation from all or a portion of their range is possible. This designation affords no legally mandated protection; however, pursuant to the CEQA Guidelines (14 CCR §15380), some species of special concern could be considered “rare.” Pursuant to its rarity status, any unmitigated impacts to rare species could be considered a “significant effect on the environment” (§15382). Thus, species of special concern must be considered in any project that will, or is currently, undergoing CEQA review, and/or that must obtain an environmental permit(s) from a public agency.

CNPS List Species. The California Native Plant Society (CNPS) maintains an inventory of special status plant species. This inventory has four lists of plants with varying rarity. These lists are: List 1, List 2, List 3, and List 4. Although plants on these lists have no formal legal protection (unless they are also state or federal listed species), the California Department of Fish and Game requests the inclusion of List 1 species in environmental documents. In addition, other state and local agencies may request the inclusion of species on other lists as well. List 1 species have the highest priority: List 1A species are thought to be extinct, and List 1B species are known to still exist but are considered “rare, threatened, and endangered in California and elsewhere.” All of the plants constituting List 1B meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (California Endangered Species Act) of the CDFG Code, and are eligible for state listing (CNPS 2001). List 2 species are rare in California, but more common elsewhere. Lists 3 and 4 contain species about which there is some concern, and are review and watch lists, respectively. Additionally, in 2006 CNPS updated their lists to include “threat code extensions” for each list. For example, List 1B species would now be categorized as List 1B.1, List 1B.2, or List 1B.3. These threat codes are defined as follows: .1 is considered “seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)”; .2 is “fairly endangered in California (20-80% of occurrences

threatened)"; .3 is "not very endangered in California (less than 20% of occurrences threatened or no current threats known)."

Fully Protected Birds. Fully protected birds, such as the white-tailed kite and golden eagle, are protected under California Fish and Game Code (§3511). Fully protected birds may not be "taken" or possessed (i.e., kept in captivity) at any time.

Protected Amphibians. Under Title 14 of the California Code of Regulations (14 CCR 41), protected amphibians, such as the California tiger salamander, may only be taken under special permit from California Department of Fish and Game issued pursuant to Sections 650 and 670.7 of these regulations.

6.2 Potentially Occurring Special Status Plant Species

Table 3 lists 25 special-status plant species that are known to occur in the vicinity of the project site. These plants occur in a variety of habitats, including chaparral, valley and foothill grasslands, and cismontane woodlands. Although some of these habitats could have been present on the project site historically, these habitats have been eliminated by past and present anthropogenic (i.e., man-related) activities that include intensive and continuing agricultural disturbance of the project site over many years. Accordingly, no suitable special-status plant habitat occurs on the project site. Since the proposed project will not impact the Fahrens Creek levee, rather will preserve this levee in a 20-foot open space easement from the base of the levee, potential impacts to rare plants that could occur along this creek and its levee would be avoided. **Consequently, special-status plant surveys are not warranted for this project site. Implementation of the proposed project will not result in impacts to special-status plants.**

6.3 Potentially Occurring Special-Status Animal Species

Table 4 presents a list of special-status animal species known from the region of the project site. Most of the special-status species known from the region can be summarily dismissed owing to the absence of habitats that could support these species on or near the project site (Table 4). However, some of the species that are not expected to occur on the project site are discussed below due to the sensitive status of these species locally.

6.3.1 VERNAL POOL FAIRY SHRIMP

Vernal pool fairy shrimp (*Branchinecta lynchi*) was designated as threatened in its entire range on September 19, 1994 (Federal Register 59:48136-48153). Critical habitat for this species was originally designated on August 6, 2003 (Federal Register 68: 46683-46867), and the designation was revised on August 11, 2005. Species by unit designations were published on February 10, 2006 (Federal Register 71:7117). The project area is located outside critical habitat (Units 22 and 23) designated for this species in Merced County.

The vernal pool fairy shrimp is a small aquatic crustacean that ranges in size from ½ to one inch long. Fairy shrimp feed on algae, bacteria, protozoa, rotifers and bits of detritus. The vernal pool fairy shrimp occupies a variety of different vernal pool habitats, from small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. It tends to occur in smaller pools (less than 0.05-acre) that are most commonly found in grass or mud bottomed swales, or

basalt flow depression pools in unplowed grasslands. It has also been collected in large vernal pools (e.g. 25 acres). Vernal pool fairy shrimp have been collected from early December to early May (USFWS 1994).

The female drops eggs to the pool bottom or the eggs remain in the brood sac until the mother dies and sinks. When the pool dries out, so do the eggs (known as cysts when dry). They remain in the dry pool bed until rains and other environmental stimuli hatch them. Cysts can withstand heat, cold and prolonged desiccation. When the pools refill, some, but not all, of the cysts may hatch. The cyst bank in the soil may contain cysts from several years of breeding. Average time to maturity is only forty-one days. In warmer pools, it can be as little as eighteen (Eriksen and Belk 1999).

The vernal pool fairy shrimp is widespread but not abundant within its known range. Known populations extend from Shasta County through most of the length of the Central Valley to Tulare County. Along the central coast, they range from northern Solano County to Pinnacles National Monument in San Benito County. Four additional, disjunct populations exist in Southern California. The ephemeral wetlands that support this network of populations are remnants of what was formerly a pristine vernal pool ecosystem, which has been converted to primarily agricultural and urban uses.

The closest record for vernal pool fairy shrimp is located 0.6 mile east of the project site (CNDDB Occurrence No. 151). This 1993 record occurred in natural vernal pools.. Regarding the project site, there are no vernal pools or even seasonal wetland habitats that could support this species. The project site has been under cultivation since the 1950's. This long history of land manipulation, disking and irrigation on the project site has eliminated any potential habitat for fairy shrimp species on the project site. It should be noted that M&A biologist Mr. G. Monk carries a 10(A)(1)(a) federal permit with the U.S. Fish and Wildlife Service that allows him to work with federally listed fairy shrimp in California. Mr. Monk has been working with fairy shrimp species in California for many years and was the first biologist to find a complete specimen of Midvalley fairy shrimp (*Branchinecta mesovalliensis*) in California. **Mr. Monk examined the project site and concludes that there is no suitable habitat for vernal pool fairy shrimp on the project site. Accordingly, M&A concludes that no impacts would occur to this species from implementation of the proposed project.**

6.3.2 CONSERVANCY FAIRY SHRIMP

Conservancy fairy shrimp (*Branchinecta conservatio*) was designated as an endangered species on September 19, 1994 (Federal Register 59:48136). Critical habitat for this species was originally designated on August 6, 2003, and the designation was revised August 11, 2005. Species by unit designations were published on February 10, 2006 (Federal Register 71:7117). The project area is located outside critical habitat (Units 6 and 7) designated for this species in Merced County.

This species is a small crustacean in the Branchinectidae family that ranges in size from about ½ to one inch long. Like the vernal pool fairy shrimp, the female drops eggs to the pool bottom or the eggs remain in the brood sac until the mother dies and sinks. When the pool dries out, so do the eggs (known as cysts when dry). They remain in the dry pool bed until rains and other

environmental stimuli hatch them. Cysts can withstand heat, cold and prolonged desiccation. When the pools refill, some, but not all, of the cysts may hatch. The cyst bank in the soil may contain cysts from several years of breeding. Hatching can begin within the same week that a pool starts to fill. Average time to maturity is forty-nine days. In warmer pools, it can be as little as nineteen (Eriksen and Belk 1999).

This species is known from six disjunct populations: Vina Plains in Tehama County; south of Chico in Tehama County; Jepson Prairie in Solano County; Sacramento National Wildlife Refuge in Glenn County; near Haystack Mountain northeast of Merced in Merced County; and the Lockewood Valley of northern Ventura County. This species inhabits large pools (such as the 36 hectare Olcott Lake at Jepson Prairie).

The closest record for Conservancy fairy shrimp is located 6.7 miles east of the project site (CNDDB Occurrence No. 18). There are no vernal pools or seasonal wetland habitats on the project site that could support this species. The project site has been under cultivation since the 1950's, and this long history of land manipulation, disking and irrigation on the project site has eliminated any potential habitat from the project site. It should be noted that M&A biologist Mr. G. Monk carries a 10(A)(1)(a) federal permit with the U.S. Fish and Wildlife Service that allows him to work with federally listed fairy shrimp in California. Mr. Monk has been working with fairy shrimp species in California for many years and was the first biologist to find a complete specimen of Midvalley fairy shrimp (*Branchinecta mesovalliensis*) in California. **Mr. Monk examined the project site and determined that there is no suitable habitat for shrimp species. Accordingly, M&A concludes that implementation of the proposed project would not impact the Conservancy fairy shrimp.**

6.3.3 VERNAL POOL TADPOLE SHRIMP

Vernal pool tadpole shrimp (*Lepidurus packardi*) was designated as threatened in its entire range on September 19, 1994 (Federal Register 59:48136-48153). Critical habitat for this species was originally designated on August 6, 2003 (Federal Register 68: 46683-46867), and the designation was revised August 11, 2005. Species by unit designations were published on February 10, 2006 (Federal Register 71:7117). The project area is located outside critical habitat (Unit 16) designated for this species in Merced County.

The vernal pool tadpole shrimp is a small crustacean whose adults reach approximately 2 inches in length. Vernal pool tadpole shrimp require seasonally aquatic habitats that are wet for at least 7 weeks and dry in summer. They occur in a variety of natural and artificial seasonally inundated habitats including vernal pools, seasonal wetlands, alkaline pools, clay flats, vernal swales, stockponds, railroad right-of-way pools, roadside ditches, and road rut pools resulting from vehicular activity. Occupied pools and wetlands typically have highly turbid waters or aquatic vegetation that may provide shelter from predators. They also have been observed in clear waters. Tadpole shrimp climb or scramble over objects, as well as plowing along or within bottom sediments. Their diet consists of organic debris and living organisms, such as fairy shrimp and other invertebrates.

The life history of the vernal pool tadpole shrimp is linked to the seasonal cycle of the vernal pool. After winter rainwater fills the pool, the population is reestablished from cysts that lie

dormant in the dry pool sediments. Sexually mature adults have been observed in vernal pools three to four weeks after the pools had been filled. Some cysts hatch immediately and the others remain dormant in the soil to hatch during later rainy seasons.

The vernal pool tadpole shrimp is known from 19 populations in the Central Valley, ranging from east of Redding in Shasta County south to the San Luis National Wildlife Refuge in Merced County, from a small population near the Napa County airport, and from a single vernal pool complex on the San Francisco Bay National Wildlife Refuge in the City of Fremont, Alameda County. The ephemeral wetlands that support this network of populations are remnants of what was formerly a pristine vernal pool ecosystem, but which has been converted to mainly agricultural and urban uses. This highly disturbed remnant habitat is imperiled by a variety of human-caused activities, primarily urban development, water supply and flood control projects, and agriculture. Rapid urbanization of the Central Valley of California currently poses the most severe threat to the continued existence of the listed vernal pool crustaceans.

The closest record for vernal pool tadpole shrimp is located 4.7 miles east of the project site (CNDDB Occurrence No. 144). There are no vernal pools or seasonal wetland habitats on the project site that could support this species. The project site has been under cultivation since the 1950's, and this long history of land manipulation, discing and irrigation on the project site has eliminated any potential habitat from the project site. It should be noted that M&A biologist Mr. G. Monk carries a 10(A)(1)(a) federal permit with the U.S. Fish and Wildlife Service that allows him to work with the federally listed tadpole shrimp. Mr. Monk has worked with the vernal pool tadpole shrimp for many years. **Mr. Monk examined the project site and concluded that there is no suitable habitat for vernal pool tadpole shrimp. Accordingly, M&A concludes that implementation of the proposed project would not impact vernal pool tadpole shrimp.**

6.3.4 CALIFORNIA TIGER SALAMANDER

On July 27, 2004 the USFWS determined that they would list the Central California Distinct Population Segment (DPS) of California tiger salamander (CTS) as threatened and would downlist the status of the Sonoma and Santa Barbara DPSs from endangered to threatened. The Santa Barbara DPS was originally listed as endangered by the USFWS on September 21, 2000 while the Sonoma County DPS was originally emergency listed as endangered by the USFWS on July 22, 2002. The listing changes became effective on September 3, 2004. On August 19, 2005 U.S. District Judge William Alsup vacated the Service's downlisting of the Sonoma and Santa Barbara populations from endangered to threatened. Thus, the Sonoma and Santa Barbara populations are once again listed as endangered.

The USFWS Final Rule on designated critical habitat for the California tiger salamander, Central Population, was issued on August 23, 2005 (Federal Register 70:49379-49458). This rule became effective September 22, 2005. The project area is located outside of *Critical Habitat Unit 9* designated in Merced County (Map 12, Federal Register Notice 70:41183-41186 August 2005).

In addition to being federally listed, the CTS is also a California "species of special concern." This title affords the CTS no legally mandated protection; however, pursuant to CEQA (14 CCR §15380), this species must be considered in any project that will undergo, or is currently

undergoing CEQA review, and/or any project that must obtain an environmental permit(s) from a public agency (e.g., the U.S. Army Corps of Engineers). The CTS is also protected under Title 14 of the California Code of Regulations (CCR). Under Title 14, CCR 41 (1996), CTS is a protected amphibian that may only be taken or possessed under a special permit issued by the California Department of Fish and Game (CDFG) pursuant to sections 650 and 670.7 of these regulations, or Section 2081 of the Fish and Game Code.

CTS occur in grasslands and open oak woodlands that provide suitable aestivation and/or breeding habitats. Monk & Associates has worked with populations that are almost at sea level (Catellus Site in the City of Fremont) to almost 2,900 feet above sea level (Kammerer Ranch, East Santa Clara County). CTS spend the majority of their lives underground. They typically only emerge from their subterranean refugia for a few nights each year during the rainy season to migrate to breeding ponds. CTS may migrate up to 0.6-mile or further from their underground refugia to breeding ponds (personal data Monk & Lynch 1997). As such, unobstructed migration corridors are important component of CTS habitat.

CTS emerge during the first heavy, warm rains of the year, typically in late November and early December. In most instances, larger movements of CTS do not occur unless it has been raining hard and continuously for several hours. Typically, for larger movements of CTS to occur nighttime temperatures also are typically above 48° F (G. Monk and S. Lynch pers. observations). Other factors that encourage larger movements of CTS to their breeding ponds include subterranean flooding of refugia (observed by G. Monk in Springtown, east Alameda County in 1997).

During the spring, summer, and fall months, most known populations of the CTS predominately use California ground squirrel (*Spermophilus beechyi*) burrows as aestivation habitat (G. Monk personal observations). Other secondary subterranean refugia, or primary refugia where California ground squirrels are absent, include or likely include Botta's pocket gopher (*Thomomys bottae*) burrows, deep fissures in desiccated clay soils, and debris piles (e.g. downed wood, rock piles).

Stock ponds, seasonal wetlands, and deep vernal pools typically provide most of the breeding habitat used by CTS. In such locations, CTS attach their eggs to rooted, emergent vegetation, and other stable filamentous objects in the water column. Eggs are gelatinous and are laid singly or occasionally in small clusters. Eggs range in size from about ¾ the diameter of a dime to the full diameter of a dime.

Occasionally CTS are found breeding in slow moving, streams or ditches. In 1997, Mr. G. Monk observed CTS breeding in large, still ditches in Fremont, California. Similarly, in 2001/2002, Mr. D. Wooten observed CTS breeding in a roadside ditch in Cotati, California (D. Wooten, pers. comm. w/ Mr. G. Monk). Ditches and/or streams that are subject to rapid flows, even if only on occasion, typically will not support or sustain CTS egg attachment through hatching, and thus, are not usually used successfully by CTS for breeding (G. Monk and S. Lynch, pers. observation). Similarly, streams and/or ditches that support predators of CTS or their eggs and larvae such as fish, bullfrogs (*Rana catesbeiana*), red swamp crayfish (*Procambarus clarkii*), or signal crayfish (*Pacifastacus leniusculus*), almost never constitute suitable breeding habitat.

Seasonal wetlands that are used for CTS breeding typically must hold water into the month of May to allow enough time for CTS larvae to fully metamorphose. In dry years, seasonal wetlands may dry too early to allow enough time for CTS larvae to successfully metamorphose. Under such circumstances, desiccated CTS larvae can be found in dried pools in the late spring. In addition, as pools dry down to very small areas of inundation, CTS larvae become concentrated and are very susceptible to predation. In the past, G. Monk has observed predation of CTS larvae in drying pools by red-sided garter snakes (*Thamnophis sirtalis infernalis*), ducks (various spp.), and raccoons (*Procyon lotor*). However, in years exhibiting wet springs, these same pools can remain hydrated long enough through continual rewetting to allow CTS larvae ample time to successfully metamorphose.

The closest record for CTS is located 1.9 miles east of the project area (CNDDB Occurrence No. 471), and there are numerous additional records for this species within 10 miles of the project area. The majority of the records of CTS were found in stockponds, vernal pools, seasonal wetlands, artificially created ponds, and slough channels all in non-native annual grassland habitats. All records occurred between 1994 and 2001.

The project site is an intensively farmed agricultural field and does not provide suitable CTS breeding or upland estivation/over summering habitat. The project site has been under cultivation since the 1950's, and this long history of land manipulation, disking and row crop irrigation on the project site has eliminated any potential breeding habitat from the project site. The project site does not provide upland estivation habitat for CTS since this animal cannot survive in a flood irrigated or row crop environments. Thus, it is unlikely that the field could maintain a viable population of CTS. The berm (levee) along Fahrens Creek is isolated from CTS movements by the agricultural fields and high flow environment of Fahrens Creek and thus would be unlikely to provide upland estivation/ over summering habitat. Regardless, the proposed project will not impact this levee and will preserve a 20-foot easement along the base of the levee. Fahrens Creek on the north side of the project site had predatory fish and supports crayfish which are CTS predators. In addition, in the winter months high flows in this creek would prevent CTS from attaching eggs to substrates in this creek. CTS typically are not found using high flow environments for reproduction. Consequently, impacts to potentially occupied CTS habitat are not expected to occur from implementation of the proposed project.

It should be noted that several M&A biologists including Mr. G. Monk carry a 10(A)(1)(a) federal permit with the U.S. Fish and Wildlife Service that allows M&A to work with the federally listed CTS. Mr. Monk has worked with CTS for many years and with all three distinct populations in California. M&A has personally located many previously unidentified CTS breeding sites and has an extensive reporting history for its CTS work both with the CDFG and the USFWS. **M&A biologists examined the project site and have determined that CTS would not use the project site. Thus, implementation of the proposed project would not be expected to impact the CTS.** M&A believes that consultation with the United States Fish and Wildlife Service (USFWS) regarding potential impacts to CTS (a federally threatened species) should not be required for the project pursuant to the Federal Endangered Species act (FESA) since this salamander would not be affected by the proposed project.

6.3.5 PACIFIC POND TURTLE

The Pacific pond turtle is a state "species of special concern." The Pacific pond turtle is a habitat generalist, inhabiting a wide range of fresh and brackish, permanent and intermittent water bodies from sea level to about 4,500 feet above sea level (USFWS 1992). Typically, this species is found in ponds, marshes, ditches, streams, and rivers that have rocky or muddy bottoms. This turtle is most often found in aquatic environments with plant communities dominated by watercress, cattail, and other aquatic vegetation. It is a truly aquatic turtle that usually only leaves the aquatic site to reproduce and to overwinter. Recent field work has demonstrated that Pacific pond turtles may overwinter on land or in water, or may remain active in water during the winter season; this pattern may vary considerably with latitude, water temperature, and habitat type and remains poorly understood (Jennings et al. 1994).

The pond turtle also requires upland areas for burrowing habitat where it digs nests and buries its eggs. These nests can extend from 52 feet to 1,219 feet from watercourses (Jennings, Hayes and Holland 1992), however most pond turtles nest in uplands within 250 meters of water (Bury, unpublished). Upland nest sites are usually found in areas with sparse vegetation. Sunny, barren, and undisturbed (not disked) land provides optimal habitat, while shady riparian habitat and planted agricultural fields do not provide suitable habitat (op. cit.). Eggs are typically laid from March to August (Zeiner et. al. 1988), with most eggs being laid in May and June. Hatchlings will stay in the nest until the following April (Bury, unpublished). Predators of juvenile pond turtles include the non-native bullfrog (*Rana catesbeiana*) and Centrarchid fish (sunfish). This pond turtle is most visible between April and July when it can be observed basking in the sun. In areas where the water is very warm during these months, however, it will bask in the warm water and will be more difficult to observe. It eats plants, insects, worms, fish and carrion (Stebbins 1985).

The closest record for Pacific pond turtle is located 4.7 miles west of the project site (CNDDB Occurrence No. 321) in Canal Creek which is surrounded by agricultural habitats. Conceivably, this turtle could occur in Fahrens Creek, and may use the levee along the northwestern corner of the project site as upland basking and possibly nesting habitat; however, the long history of land manipulation, discing and irrigation on the field portion of the project site has eliminated any potential use of the majority of the remainder of the project site by this species. Since the proposed project will not impact the Fahrens Creek levee and will preserve a 20-foot easement along the base of the levee, impacts to potentially occupied Pacific pond turtle habitat will be avoided. **Thus, M&A concludes that no impacts would occur to the Pacific pond turtle from implementation of the proposed project.**

6.3.6 GIANT GARTER SNAKE

The giant garter snake was federally listed as threatened in its entire range on October 20, 1993 (Federal Register 58: 54053-54066)(USFWS 1993). Critical habitat has not been designated for this species. Giant garter snake is also listed as threatened under the California Endangered Species Act in 1971. Because of the threatened status of this species, all proposed projects that could affect giant garter snake must address potential impacts to this species.

The giant garter snake is one of the largest garter snakes, reaching a total length of at least 63 inches. Dorsal background coloration varies from brownish to olive with a checkered pattern of black spots, separated by a yellow dorsal stripe and two light colored lateral stripes. Giant garter snakes feed primarily on small fishes, tadpoles, and frogs. Essential habitat components consist of (1) adequate water during the snake's active season (early-spring through mid-fall) to provide food and cover; (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season; (3) upland grassy banks and openings in waterside vegetation for basking, cover and retreat sites; and (4) higher elevation uplands for cover and refuge from flood waters during the snake's dormant season in the winter. The giant garter snake inhabits small mammal burrows and other soil crevices above prevailing flood elevations throughout its winter dormancy period. Giant garter snakes typically select burrows with sunny exposure along south and west facing slopes. Giant garter snakes are typically absent from larger rivers because of lack of suitable habitat and emergent vegetative cover, and from wetlands with sand, gravel, or rock substrates. Riparian woodlands typically do not provide suitable habitat because of excessive shade, lack of basking sites, and absence of prey populations. However, some riparian woodlands do provide good habitat. Giant garter snakes can inhabit water bodies that contain predatory fish. When appropriate cover is available they appear to be able to survive just fine, even when numerous predators share the same habitats. California’s major rivers have been highly channelized, removing oxbows and backwater areas that probably at one time provided suitable habitat (Brode 1988, USFWS 1993).The breeding season extends through March and April, and females give birth to live young from late July through early September. Sexual maturity averages three years for males and five years for females (Brode 1988, USFWS 1993, USFWS 1999).

Endemic to the Central Valley floor, this snake inhabits sloughs, ponds, small lakes, low gradient streams, and other waterways such as drainage canals and irrigation ditches, and adjacent uplands. Because of the direct loss of natural habitat, the giant garter snake relies heavily on rice fields in the Sacramento Valley, but also uses managed marsh areas in Federal National Wildlife Refuges and State Wildlife Areas. There have been only a few recent sightings of giant garter snakes in the San Joaquin Valley. Agricultural practices such as tilling, grading, harvesting and other equipment operated activities may result in death of giant garter snakes, and flood control and canal maintenance activities may also have a detrimental affect on giant garter snakes and prevent recolonization of these canals. Irrigated pastures provide the summer water that giant garter snakes require; however, overgrazing may degrade the habitat and eliminate cover. Livestock trample aquatic and riparian vegetation and burrows these snake need for cover, thereby altering the habitat. Livestock may even trample snakes. The resulting water pollution from a grazed landscape may reduce or eliminate prey populations. Consequently, there has been a dramatic decline of this species in areas with intense agricultural activities or grazing pressure.

The closest CNDDB record (Occurrence Number 144) for the giant garter snake to the project site was for a female giant garter snake that was collected in 1908. While the exact location of the collection site is unknown, it appears to be along Bear Creek located approximately 3.6 miles south of the project site. Since 1908 the project area has undergone drastic transformations to urban and agricultural conditions that were not present in 1908. Thus, this record has little bearing on whether giant garter snakes could be present today. The remaining CNDDB records (Occurrence Numbers 136, 25, 42 and 23) for giant garter snakes in the region of the project site

were recorded between 1976 and 1986 and are located 15 to 20 miles from the project site. These records are also old and are not in tributaries connected to the project site. Thus, these records are also not an indication that giant garter snakes could be in the project vicinity. The absence of records for this snake anywhere near the project site over the past 100 years indicates that this species is unlikely to still exist in this part of Merced County.

The long history of disking of the field portion of the site essentially precludes the project site from providing potential upland refugia habitat for this species. M&A believes it very unlikely that giant garter snakes would occur in Fahrens Creek owing to the extent of urbanization in this creek near the project site, and the extent of agricultural conversion of habitats into row crops which are not typically used or associated with giant garter snake habitat. The proposed project will preserve the levee and a 20 foot buffer outboard of the levee that will ensure that there are not impacts to Fahrens Creek. As such, the proposed project will not result in impacts to potentially occupied giant garter snake habitat. **Thus, M&A concludes that no impacts would occur to the giant garter snake from implementation of the proposed project.**

6.3.7 WHITE-TAILED KITE

The white-tailed kite (*Elanus caeruleus*) is fully protected under California Fish and Game Code § 3511. This raptor is also protected under the Migratory Bird Treaty Act (50 CFR 10.13), and its nest, eggs, and young are protected pursuant to California Fish and Game Codes §§3503 and 3503.5. The white-tailed kite is typically found hunting in grassland, marsh, or cultivated fields where there are dense-topped trees or shrubs for nesting and perching. They nest in a wide variety of trees of moderate height and sometimes in tall bushes, such as coyote bush (*Baccharis pilularis*). Native trees used for nesting are live and deciduous oaks (*Quercus* spp.), willows (*Salix* spp.), cottonwoods (*Populus* spp.), sycamores (*Platanus* spp.), maples (*Acer* spp.), toyon (*Heteromeles arbutifolia*), and Monterey cypress (*Cupressus macrocarpa*). Kites often reside near water sources, where prey is more abundant. The particular characteristics of the nesting site do not appear to be as important as its proximity to a suitable food source (Shuford 1993). Kites primarily hunt small mammals, with California meadow voles (*Microtus californicus*) accounting from between 50-100 percent of their diet.

M&A biologists have observed white-tailed kites on several occasions in the vicinity of the project site. The sparse riparian vegetation growing along Fahrens Creek provides suitable nesting habitat for this species. A spring nesting survey should be conducted to confirm presence or absence of nesting kites along Fahrens Creek prior to construction on the project site. If nesting kites are found nesting along Fahrens Creek immediately adjacent to the project site, a non-disturbance buffer should be established by a qualified ornithologist and maintained until the young have fledged (see Impacts and Mitigation Measures section below).

6.3.8 NORTHERN HARRIER

The northern harrier (*Circus cyaneus*) is a California species of special concern. This raptor is also protected under California Fish and Game Code §3503.5 that protects nesting raptors and their eggs/young. The northern harrier is also protected from direct take under the Migratory Bird Treaty Act (50 CFR 10.13). Northern harriers build grass-lined nests on the ground within dense, low-lying vegetation in a variety of habitats, though they are typically found nesting in grassland or

marsh habitats. They usually nest on level to near level ground. This species is particularly vulnerable to ground predators such as coyotes, red fox and various snake species. Ground nesting birds in general are also subject to disturbance by agricultural practices. Northern harriers likely forage over the project site and may nest in or around the open grasslands and upland irrigated pasturelands that provides suitable nesting habitat for this species.

M&A biologists have observed northern harriers on several occasions in the vicinity of the project site. The open field of the project site provides foraging habitat for this species, and the levee/berm along Fahrens Creek provides nesting habitat for northern harriers. Provided the project site is continually disked and does not remain fallow and undisturbed for a prolonged period of time, the project site will not support nesting habitat for northern harriers. Regardless, preconstruction nesting surveys should be conducted before earth-moving or construction activities commence as such disturbance could cause nest abandonment if this raptor was nesting on the Fahrens Creek levee. If nesting northern harriers are found within the project area, a non-disturbance buffer should be established by a qualified ornithologist until the young have fledged (see Impacts and Mitigation Measures described below).

6.3.9 SWAINSON'S HAWK

The Swainson's hawk is a state listed threatened species pursuant to the California Endangered Species Act (CESA), Title 14, California Code of Regulations. While it has no special federal status, it is protected from direct take under the Federal Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711). Swainson's hawks, their nests, eggs, and young are also protected under California Fish and Game Code (§3503, §3503.5, §3513, and §3800).

Swainson's hawk inhabits open to semi-open areas at low to middle elevations in valleys, dry meadows, foothills, and level uplands (Kochert 1986). It nests almost exclusively in trees and will nest in almost any tree species that is at least 10 feet tall (Schmutz et. al. 1984). Nests are constructed in isolated trees that are dead or alive along drainages and in wetlands, or in windbreaks in fields and around farmsteads (Palmer 1988). Swainson's hawks occasionally nest in shrubs, on telephone poles, and on the ground. In the Central Valley of California, the majority of Swainson's hawk nests and territories are associated with riparian systems and nests are commonly found in cottonwoods and oaks (Schlorff et. al. 1984). They have also been documented nesting in eucalyptus (*Eucalyptus* spp.), black walnut (*Juglans hindsii*), black locust (*Robinia pseudoacacia*), almond (*Prunus dulcis*), Osage orange (*Maclura pomifera*), Arizona cypress (*Cupressus arizonica*) and pine (*Pinus* spp.)(CNDDB records).

Foraging habitats include alfalfa fields, fallow fields, beet, tomato, and other low-growing row or field crops, dry-land and irrigated pasture, and rice land when not flooded (CDFG 1994). The Swainson's hawk generally forages in open habitats with short vegetation containing small mammals, reptiles, birds, and insects. Its primary prey in the Central Valley is California meadow vole (*Microtus californicus*). Agricultural areas are often preferred over more natural grassland habitats due to larger prey populations. In addition agricultural practices (planting, maintenance, harvesting, disking) allow for access to prey, and very likely increase foraging success of Swainson's hawks by flushing prey (personal communication between J. Estep and G. Monk 2002). During the nesting season Swainson's hawks usually forage within two miles of the nest. Swainson's hawk does not require habitats that contain many perches because it most often

searches for prey aerially, therefore it can occupy habitats with few or no perches except the nest tree (James 1992).

In California, the nesting population of Swainson's hawks has declined greatly in recent years due primarily to habitat loss. Swainson's hawks are regular summer visitors and breeders throughout the western states. In the fall months, most Swainson's hawks migrate to Argentina before returning to the United States to breed in the late-spring (typically April). There are also two relatively small populations of Swainson's hawks that remain resident in California year-round in the Davis area and a small population in the Sacramento River Delta.

The closest known CNDDB record (Occurrence No. 1106) for nesting Swainson's hawk is 8.2 miles north of the project site in a cottonwood tree in a riparian corridor along the Merced River. While it is unlikely that this species would nest in the sparsely distributed riparian trees along Fahrens Creek, the proposed project will not result in the removal of any riparian trees along this creek. While M&A observed Swainson's hawks foraging over open fields east of the project site, no nests occupied by this species were found in the vicinity of the project site. In addition, during the raptor surveys conducted by Mr. Silva in April and May of 2007, no Swainson's hawk nests were discovered on the site or offsite in the vicinity of the project site. While Swainson's hawks apparently forage over non-native annual grasslands east of the project site, the loss of approximately 58 acres of potential agricultural foraging habitat that comprises the project site would be insignificant in a regional context, particularly in light of the fact that Swainson's hawks are not known to nest within 5 miles of the project site.

The applicant will conduct preconstruction nesting season surveys along Fahrens Creek and within the "area of influence" (generally considered to be approximately 1,000 feet) of the proposed development project to ensure that construction-related activities do not result in impacts to nesting Swainson's hawks (note that there are no records for nesting Swainson's hawks any closer than 8.2 miles from the project site). Surveys should be conducted following the CDFG 2000 guidelines: *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (see Impacts and Mitigation Measures section below). Because Swainson's hawks are a mobile species, and nest in new locations from year to year, impacts to Swainson's hawks from the proposed project must be considered potentially significant pursuant to CEQA. If Swainson's hawks are identified nesting within the project area or immediately adjacent to the site, mitigation as prescribed in "Impacts and Mitigation Measures" section below should be implemented.

6.3.10 RED-TAILED HAWK

The red-tailed hawk (*Buteo jamaicensis*) is protected under the Migratory Bird Treaty Act (50 CFR 10.13) and under California Fish and Game Code §3503.5, 3800, and 3513 which protect nesting raptors and their eggs/young. This raptor species has an extremely wide tolerance for habitat variation, which can be attributed to its very broad spectrum of prey (Johnsgard 1990). Some clear habitat preferences do exist, however, and have been analyzed by a variety of studies. Habitat preferences in the winter for both sexes are oriented toward upland pasture, grassland, and hardwood habitats, with females also using lowland hardwoods and males using marsh–shrub communities. In the spring, females continue to use mainly upland and lowland hardwoods, probably as a reflection of their orientation toward a nest site. Monk & Associates

has observed red-tailed hawks nesting in a variety of tree species including eucalyptus, coast live oak, and valley oak trees.

Red-tailed hawks were observed nesting in a willow along Fahrens Creek in April of 2007 approximately 300 feet southwest of the project site. Preconstruction surveys should be conducted prior to any proposed earth-moving activity on the project site to ensure that construction-related activities do not result in nest abandonment. The optimal time to survey for nesting red-tailed hawks is between April 15 and May 15. If red-tailed hawks are identified nesting on or immediately adjacent to the project site, a construction non-disturbance buffer should be temporarily established until the hawks are finished nesting. It is imperative to have a qualified biologist determine the size of the buffer. In this fashion the minimal area necessary to protect the nest site can be identified. This will allow the project to proceed with the minimum avoidance requirements while ensuring that the project otherwise remains in compliance with the Federal Migratory Bird Treaty Act and California Fish and Game Codes that protect nesting birds and raptors. After the young fledge the nest and reach independence of the nest, typically in by mid-July, there would be no further requirements for avoidance of the nesting tree (see Impacts and Mitigation Measures section below).

6.3.11 WESTERN BURROWING OWL

Western burrowing owl is a federal species of concern and a California species of special concern. Its nest, eggs, and young are also protected under California Fish and Game Code (§3503, §3503.5, and §3800). The burrowing owl is also protected from direct take under the Migratory Bird Treaty Act (50 CFR 10.13).

Burrowing owl habitat can be found in annual and perennial grasslands, characterized by low-growing vegetation. Typically, the burrowing owl utilizes rodent burrows, usually ground squirrel burrows, for nesting and cover. They may also on occasion dig their own burrows, or use man-made objects such as concrete culverts or riprap piles for cover. They exhibit high site fidelity, reusing burrows year after year. Occupancy of suitable burrowing owl habitat can be verified at a site by observation of a pair of burrowing owls during the spring and summer months or, alternatively, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement (white wash) at or near a burrow. Burrowing owls typically are not observed in grasslands with tall vegetation or wooded areas because the vegetation obscures their ability to detect avian and terrestrial predators. Since burrowing owls spend the majority of their time sitting at the mouths of their burrows, grazed grasslands seem to be their preferred habitat because it allows them an unobstructed 360 degree view of their environment.

The closest known CNDDB record (Occurrence No. 347) for western burrowing owl is 1.7 miles east of the project site. During raptor surveys conducted by Mr. Silva and M&A in the spring of 2007, no burrowing owls were observed on or near the site. Regardless, M&A biologists have observed this owl in several locations along Bellevue, east of State Route 59 approximately 2 miles west of the project site. Since this owl and ground squirrels are known from the area, this species could conceivably move onto the project site in the future. Therefore, out of an abundance of caution, the applicant should conduct nesting/occupancy surveys in the spring of the year prior to construction. Because of the mobile nature of western burrowing owls, impacts to this owl from construction of the proposed project are considered potentially significant pursuant to CEQA. If burrowing owls are identified nesting within the project area, mitigation as

prescribed in "Impacts and Mitigation Measures" section below should be implemented. If the burrowing owl is not identified during the spring nesting surveys, preconstruction surveys would still be necessary 30 days prior to earth-moving activities to avoid impacting any owls that may have moved onto the project site. Surveys for burrowing owls should be conducted in accordance with the survey requirements detailed in the CDFG's October 17, 1995 *Staff Report on Burrowing Owl Mitigation* (see Impacts and Mitigation Measures section below).

6.3.12 SAN JOAQUIN KIT FOX

The San Joaquin kit fox is a federally listed endangered species and a California listed threatened species. This species' distribution is primarily limited to the San Joaquin Valley and adjacent regions. Because of the endangered/threatened status of this fox species, all proposed projects within the current and/or historic range of the kit fox must address potential impacts to this species.

The San Joaquin kit fox is the smallest fox species in North America, typically weighing between four and six pounds. It has large ears, long legs, and is generally a buffy tan color with a black-tipped tail. Kit fox live primarily in the lowlands of the San Joaquin Valley of California, but are also known to occur in several counties in the coast mountain ranges including Santa Barbara, San Luis Obispo, Monterey, San Benito, Santa Clara, Contra Costa and Alameda Counties.
This fox species is usually found in open grassland and shrubland communities, but has also been observed in orchards that border grassland or shrub plant communities. Kit fox are carnivorous, usually feeding on small rodents such as San Joaquin pocket mice (*Perognathus inornatus*), deer mice, western harvest mice, kangaroo rats (*Dipodomys* spp.) and larger rodents such as California ground squirrel (*Spermophilus beechyi*). Kit fox also prey upon lagomorphs such as black-tailed hare and desert cottontail (*Sylvilagus audubonii*). It relies on dens for breeding, and to provide escape cover from potential predators. Kit fox are reputedly poor diggers, so dens are excavated in loose-textured soils, generally in areas with low to moderate relief, or they will utilize holes left by other species. They will utilize burrows dug by rabbits, ground squirrels, and on occasion, badgers (*Taxidea taxus*). Man-made structures, such as well casings, culverts, and abandoned pipelines, are also occasionally used for dens. Typically, dens are small enough to discourage easy predation by coyotes. Populations of kit fox are thought to be related to the availability of denning sites, particularly natal denning sites, which are often moved several times throughout the season.

The closest known CNDDB record (Occurrence No. 26) for San Joaquin kit fox is located 5.2 miles east of the project site in grazed grassland habitat. The long history of continual disking of the agricultural field, and the planting of row crops has significantly reduced the habitat value of the project site for San Joaquin kit fox; however, the levee along Fahrens Creek provides a potential migration corridor between habitats in the area. Since the project proposes to preserve a natural corridor along Fahrens Creek, impacts to potential San Joaquin kit fox migration habitat would be avoided. Finally, in 2006 M&A conducted a USFWS-approved protocol survey for San Joaquin kit fox in the project area for a separate project (Atwater/Merced Bypass Highway Project), and no evidence of San Joaquin kit fox was found in that project area which encompasses the project site. **Consequently, M&A does not believe the proposed project will result in significant impacts to the SJKF or its habitat.**

7. REGULATORY FRAMEWORK FOR NATIVE WILDLIFE, FISH, AND PLANTS

This section provides a discussion of those laws and regulations that are in place to protect native wildlife, fish, and plants. These laws would have a certain affect on any proposal to construct a road alignment within the study area. Under each law we discuss its pertinence to the proposed development.

7.1 Federal Endangered Species Act

The primary focus of the FESA of 1973 is that all federal agencies must seek to conserve threatened and endangered species through their actions. FESA has been amended several times in the past to correct perceived and real shortcomings. FESA contains three key sections. Section 4 (16 USCA §1533) outlines the procedure for listing endangered plants and wildlife. Section 7 (§1536) imposes limits on the actions of federal agencies that might impact listed species. Section 9 (§1538) prohibits the "taking" of a listed species by anyone, including private individuals, and State and local agencies. In the case of salt water fish and other marine organisms, the requirements of FESA are enforced by the National Marine Fisheries Service (NMFS). The USFWS enforces all other cases. Below, Sections 7 and 9 of FESA are discussed since they are the two sections most relevant to the proposed project.

Section 9 of FESA as amended, prohibits the "take" of any fish or wildlife species listed under FESA as endangered. Under Federal regulation, "take" of fish or wildlife species listed as threatened is also prohibited unless otherwise specifically authorized by regulation. "Take," as defined by FESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Recent court cases have found "harm" includes not only the direct taking of a species itself, but the destruction or modification of the species' habitat resulting in the potential injury of the species. As such, "harm" is further defined to mean "an act which actually kills or injures wildlife; such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 CFR 17.3). Harm must be tempered against a court decision from the United States District Court for the District of Arizona [United States Court of Appeals for the Ninth Circuit. 2001. *Arizona Cattle Growers' Association, Jeff Menges, v. United States Fish and Wildlife, Bureau of Land Management, and Southwest Center for Biological Diversity*. Filed December 17, 2001.]. This Court held, based on the legislative history, case law, prior agency representations, and the plain language of the Endangered Species Act, that an Incidental Take Statement must be predicated on a finding of an incidental take. Further, the Fish and Wildlife Service acted in an arbitrary and capricious manner by issuing Incidental Take Statements imposing terms and conditions on land use permits, where there either was no evidence that the endangered species existed on the land or no evidence that a take would occur if the permit were issued.

Section 9 applies not only to federal agencies but also to any local or State agency, and to any individual. If "take" of a listed species is necessary to complete an otherwise lawful activity, this triggers the need for consultation under Section 7 of FESA (for Federal agencies), or requires preparation of a Habitat Conservation Plan (HCP) pursuant to Section 10 of FESA (for state and local agencies, or individuals).

Section 7(a)(2) of the Act requires that each Federal agency shall, in consultation with and with the assistance of the USFWS, insure that any action authorized, funded or carried out by such agency is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of critical habitat. Critical habitat identifies specific areas, both occupied and unoccupied, that are essential to the conservation of a listed species and that may require special management considerations or protection. Section 4 of the Act requires USFWS to consider economic and other relevant impacts of specifying any particular area as critical habitat.

Federal actions include permitting, funding, and entitlements for both federal projects, as well as private projects facilitated by federal actions (for example, a private landowner applying to the Corps for a permit). As an example, if a federally listed endangered species is present in "waters of the United States" on a project site, prior to authorizing impacts to “waters of the United States,” the U.S. Army Corps of Engineers (who administers the Clean Water Act) would be required to initiate “formal consultation” with USFWS pursuant to Section 7 of FESA. As part of the formal consultation, the USFWS would then be required to prepare a Biological Opinion based on a review and analysis of the project applicant’s avoidance and mitigation plan. The Biological Opinion will either state that the project will or will not result in “take” or threaten the continued existence of the species (not just that population). If an endangered species could be harmed by a proposed project, USFWS has to be in complete concurrence with the proposed avoidance and mitigation plan. If USFWS is not in complete concurrence with the mitigation plan, they will submit a Biological Opinion to the Corps containing a “jeopardy decision” and stating that a Corps’ permit should not be issued for the pending project. The applicant would then have an opportunity to submit a revised mitigation plan that provides greater protection for the species.

In the 1982 amendments to FESA, Congress established a provision in Section 10 that allows for the "incidental take" of endangered and threatened species of wildlife by non-federal entities (for example, project applicants, state and local agencies). "Incidental take" is defined by FESA as take that is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity." Under Section 10 of FESA, the applicant for an "incidental take permit" is required to submit a "conservation plan" to USFWS or NMFS that specifies, among other things, the impacts that are likely to result from the taking, and the measures the permit applicant will undertake to minimize and mitigate such impacts, and the funding that will be available to implement those steps.

Conservation plans under FESA have come to be known as "habitat conservation plans" or "HCPs" for short. The terms incidental take permit, Section 10 permit, and Section 10(a)(1)(B) permit are used interchangeably by USFWS. Section 10(a)(2)(B) of FESA provides statutory criteria that must be satisfied before an incidental take permit can be issued.

A recent (December 2001) decision by the 9th Circuit Court of Appeals (*Arizona Cattle Growers’ Association, Jeff Menges, vs. the U.S. Fish and Wildlife Service and Bureau of Land Management, and the Southwest Center for Biological Diversity*) ruled that the USFWS must show that a threatened or endangered species is present on a project site and that it would be taken by the project activities. According to this ruling, the USFWS can no longer require

mitigation based on the probability that the species could use the site. Rather they must show that it is actually present.

7.1.1 RESPONSIBLE AGENCY

FESA gives regulatory authority over terrestrial species and non-anadromous fish to the USFWS. The NMFS has authority over marine mammals and anadromous fish.

7.1.2 APPLICABILITY TO THE PROPOSED PROJECT

The project will not impact Fahrens Creek and thus while anadromous fish are not known from this creek, there would be no potential impacts to anadromous fish species regulated by NMFS pursuant to the FESA. It is unlikely that any of the federally listed plant species that occur in the region are present on the project site due to the long history of land manipulation, disking and irrigation on the project site that has eliminated any potential habitat for rare plants on the project site. Several federally listed wildlife species occur in the region, such as vernal pool fairy shrimp, Conservancy fairy shrimp, vernal pool tadpole shrimp, California tiger salamander, giant garter snake, and San Joaquin kit fox. The project site does not provide habitat for vernal pool-associated species due to the long history of land manipulation, disking and irrigation on the project site that has eliminated any habitat for these species on the project site. The berm (levee) along Fahrens Creek may provide potential migration habitat for the San Joaquin kit fox; however, the proposed project will not impact this levee and will preserve a 20-foot easement along the base of the levee. While California tiger salamanders are known from the region of the project site, the project site does not provide habitat that would be used by this salamander. Similarly, while giant garter snakes were recorded within 3.6 miles of the project site 99 years ago, other records for the species are significant further from the project site and are not in the watershed of the project site. Accordingly, impacts to federally listed species and their habitats will be avoided by the proposed project. **Thus, M&A concludes that no impacts to federally listed species would occur from implementation of the proposed project.** Pursuant to the Federal Endangered Species Act (FESA) as interpreted by the 9th Circuit Court of Appeals (*Arizona Cattle Growers' Association, Jeff Menges, vs. the U.S. Fish and Wildlife Service and Bureau of Land Management, and the Southwest Center for Biological Diversity*), a federal incidental take permit would not be required for the proposed project as federally listed species would not be impacted by the proposed project.

7.2 Federal Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (16 U.S.C. §§ 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989) makes it unlawful to "take" (kill, harm, harass, shoot, etc.) any migratory bird listed in Title 50 of the Code of Federal Regulations, Section 10.13, including their nests, eggs, or young. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, swallows, etc.).

Executive Order 13186 for conservation of migratory birds (January 11, 2001) requires that any project with federal involvement address impacts of federal actions on migratory birds. The order is designed to assist federal agencies in their efforts to comply with the MBTA and does not constitute any legal authorization to take migratory birds. The order also requires federal

agencies to work with the USFWS to develop a memorandum of understanding (MOU). Protocols developed under the MOU must promote the conservation of migratory bird populations through the following means:

- Avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions.
- Restore and enhance habitat of migratory birds, as practicable; and prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

7.2.1 APPLICABILITY TO PROPOSED PROJECT

White-tailed kite, red-tailed hawk, Swainson's hawk, western burrowing owl and northern harrier could nest on or immediately adjacent to the project site. These raptors (birds of prey) are protected by the Migratory Bird Treaty Act. Also, common songbirds and wading birds that could occur along the levee or immediately adjacent to the project site in Fahrens Creek would be protected pursuant to this Act. As long as there is no direct mortality of species protected pursuant to this Act caused by development of the site, there should be no constraints to development of the site. To comply with the Migratory Bird Treaty Act, all active nest sites would have to be avoided while such birds were nesting. Upon completion of nesting, the project could commence as otherwise planned. Upon completion of nesting, the proposed project could commence as otherwise planned, except for Swainson's hawk and western burrowing owl (see Impacts and Mitigation Measures section below).

7.3 State Endangered Species Act

7.3.1 SECTION 2081 OF THE STATE ENDANGERED SPECIES ACT

In 1984, the state legislated the California Endangered Species Act (CESA) (Fish and Game Code §2050). The basic policy of CESA is to conserve and enhance endangered species and their habitats. State agencies will not approve private or public projects under their jurisdiction that would jeopardize threatened or endangered species if reasonable and prudent alternatives are available.

CESA requires that all state lead agencies (as defined under CEQA) conduct an endangered species consultation with CDFG if their actions could affect a state listed species. The state lead agency and/or project applicants must provide information to CDFG on the project and its likely impacts. CDFG must then prepare written findings on whether the proposed action would jeopardize a listed species would result in the direct take of a listed species. Because CESA does not have a provision for "harm" (see discussion of FESA, above), CDFG considerations pursuant to CESA are limited to those actions that would result in the direct take of a listed species.

If CDFG determines that a proposed project could impact a State listed threatened or endangered species, CDFG will provide recommendations for "reasonable and prudent" project alternatives. The CEQA lead agency can only approve a project if these alternatives are implemented, unless it finds that the project's benefits clearly outweigh the costs, reasonable mitigation measures are adopted, there has been no "irreversible or irretrievable" commitment of resources made in the interim, and the resulting project would not result in the extinction of the species. In addition, if

there would be threatened or endangered species impacts, the lead agency typically requires project applicants to demonstrate that they have acquired "incidental take" permits from CDFG and/or USFWS (if it is a Federal listed species) prior to allowing/permitting impacts to such species.

If proposed projects would result in impacts to a State listed species, an "incidental take" permit pursuant to §2081 of the Fish and Game Code would be necessary (versus a Federal incidental take permit for Federal listed species). CDFG will issue an incidental take permit only if:

1) The authorized take is incidental to an otherwise lawful activity;
2) the impacts of the authorized take are minimized and fully mitigated;
3) the measures required to minimize and fully mitigate the impacts of the authorized take:
    a) are roughly proportional in extent to the impact of the taking on the species;
    b) maintain the project applicant's objectives to the greatest extent possible; and,
    c) capable of successful implementation; and,

4) adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with, and the effectiveness of, the measures.

If an applicant is preparing a habitat conservation plan (HCP) as part of the federal 10(a) permit process, the HCP might be incorporated into the §2081 permit if it meets the substantive criteria of §2081(b). To ensure that an HCP meets the mitigation and monitoring standards in Section 2081(b), an applicant should involve CDFG staff in development of the HCP. If a final Biological Opinion (federal action) has been issued for the project pursuant to Section 7 of the federal Endangered Species Act, it might also be incorporated into the §2081 permit if it meets the standards of §2081(b).

No §2081 permit may authorize the take of a species for which the Legislature has imposed strict prohibitions on all forms of "take." These species are listed in several statutes that identify "fully protected" species and "specified birds." *See* Fish and Game Code §§ 3505, 3511, 4700, 5050, 5515, and 5517. If a project is planned in an area where a "fully protected" species or a "specified bird" occurs, an applicant must design the project to avoid all take.

In September 1997, Assembly Bill 21 (Fish and Game Code §2080.1) was passed. This bill allows an applicant who has obtained a "non-jeopardy*" federal Biological Opinion* pursuant to Section 7, or who has received a Federal 10(a) permit (Federal incidental take permit), to submit the federal opinion or permit to CDFG for a determination as to whether the federal document is "consistent" with CESA. If after 30 days CDFG determines that the federal incidental take permit is consistent with state law, and that there are that all state listed species under consideration have been considered in the federal Biological Opinion, then no further permit or consultation is required under CESA for the project. However, if CDFG determines that the federal opinion or permit is not consistent with CESA, or that there are state listed species that were not considered in the federal Biological Opinion, then the applicant must apply for a state permit under section 2081(b).

The process provided in Fish and Game Code §2080.1 (Assembly Bill 21) may be of use when the incidental take would occur to species that are listed under both the federal and state endangered species acts. Assembly Bill 21 is of no use if an affected species is state-listed, but not federally listed.

State and federal incidental take permits are issued on a discretionary basis, and are typically only authorized if applicants are able to demonstrate that impacts to the listed species in question are unavoidable, and can be mitigated to an extent that the reviewing agency can conclude that the proposed impacts would not jeopardize the continued existence of the listed species under review. Typically, if there would be impacts to a listed species, mitigation that includes habitat avoidance, preservation, and creation of endangered species habitat is necessary to demonstrate that projects would not threaten the continued existence of a species. In addition, management endowment fees are usually collected as part of the agreement for the incidental take permit(s). The endowment is used to manage any lands set-aside to protect listed species, and for biological mitigation monitoring of these lands over (typically) a five-year period.

7.3.2 Applicability to Proposed Project

Swainson's hawk, a state threatened species, is known to nest 8.2 miles north of the project site (CNDDB Occurrence No. 1106) in a cottonwood tree in a riparian corridor along the Merced River. No Swainson's hawk nests have been discovered on the site or offsite in the vicinity of the project site during the raptor surveys conducted by Mr. Silva in April and May of 2007. While M&A did observe Swainson's hawks foraging over non-native annual grasslands east of the project site during our site assessment, the loss of 58 acres of agricultural foraging habitat constituting the project site would be insignificant in a regional context, particularly in light of the fact that Swainson's hawks are not known to nest within 5 miles of the project site. The applicant will conduct nesting season surveys along Fahrens Creek and within the area of influence of the proposed development project to ensure that construction-related activities do not result in impacts to this hawk should it move into the project vicinity to nest in the future. Surveys should be conducted following the CDFG 2000 guidelines: *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (see Impacts and Mitigation Measures section below). Since this species is not known to nest on the project site (no nest sites have been identified onsite to date), an Incidental Take Permit (2081 Agreement) would not be required by CDFG for this species (unless future preconstruction nesting surveys identify a nesting pair on or immediately adjacent to the project site).

Giant garter snake and San Joaquin kit fox are both federal and state listed species. Giant garter snakes have not been recorded anywhere in the vicinity of the project site for 99 years. Urbanization and agricultural conversion to row crops has essentially modified habitats in the immediate vicinity of the project site to a condition where this snake would no longer be expected to occur. While the berm (levee) along Fahrens Creek may provide potential migration habitat for the San Joaquin kit fox, once again the urbanization of the immediately surrounding areas and agricultural conversion to row crops lands has greatly minimized the importance of the project area to San Joaquin kit fox. In addition, protocol level surveys conducted by M&A in the area including the project site which included use of infrared surveillance cameras, conducting night spotlight surveys, and the use of tracking stations indicates that at this time the San Joaquin kit fox does not occur in the vicinity of the project site. Regardless, the proposed project will

protect Fahrens Creek, its levee, and a 20 foot buffer off the levee in a permanent non-disturbance easement. Consequently, impacts to state listed species will not occur from implementation of the proposed project. **Thus, M&A concludes that no impacts to state listed species would occur to this species from implementation of the proposed project.**

7.4 California Fish and Game Codes [§§ 3503, 3503.5, 3511, and 3513]

California Fish and Game Code §3503, 3503.5, 3511, and 3513 prohibit the "take, possession, or destruction of birds, their nests or eggs." Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered a "take." Such a take would also violate federal law protecting migratory birds (Migratory Bird Treaty Act).

All raptors (that is, hawks, eagles, owls) their nests, eggs, and young are protected under California Fish and Game Code (§3503.5). Additionally, "fully protected" birds, such as the white-tailed kite (*Elanus leucurus*) and golden eagle (*Aquila chrysaetos*), are protected under California Fish and Game Code (§3511). "Fully protected" birds may not be taken or possessed (that is, kept in captivity) at any time.

7.4.1 Applicability to the Project

White-tailed kite, Swainson's hawk, western burrowing owl and northern harrier are known from the region of the project site, are mobile species and thus could nest on or immediately adjacent to the project site in the future. The red-tailed hawk is was observed nesting approximately 300 feet southwest of the project site along side Fahrens Creek in 2007. Accordingly, nesting surveys must be conducted for these species to ensure that there is no direct take of these birds including their eggs, or young. Any active nests that were found during preconstruction surveys must be avoided by the project to an extent that the nesting efforts are protected from harm. Suitable non-disturbance buffers must be established around nest sites by a qualified ornithologist until the nesting cycle is complete (see Impacts and Mitigation Measures section below).

7.5 Protected Amphibians

Under Title 14 of the California Code of Regulations (CCR 14, Division 1, Subdivision 1, Chapter 5, §41. Protected Amphibians), protected amphibians such as the California tiger salamander may only be taken under special permit from California Department of Fish and Game issued pursuant to Sections 650 and 670.7 of these regulations.

Applicability to the Project

The proposed project will not result in impacts to protected amphibians, such as the California tiger salamander since the long history of land manipulation, disking and irrigation on the project site has eliminated any potential breeding habitat from the project site. The berm (levee) along Fahrens Creek is isolated from use by migratory California tiger salamanders by intensive agricultural row crops lands, urban development, and high flow volumes in Fahrens Creek. Regardless, the proposed project will not impact this creek or its levee and will permanently preserve a 20-foot buffer along the base of the levee. Consequently, impacts to potentially occupied California tiger salamander habitat will not occur from the proposed project. **Thus, M&A concludes that no impacts would occur to protected amphibians from implementation of the proposed project.**

REGULATORY REQUIREMENTS PERTAINING TO WATERS OF THE UNITED STATES AND STATE

This section presents an overview of the criteria used by the U.S. Army Corps of Engineers, the California Regional Water Quality Control Board, the State Water Resources Control Board, and CDFG to determine those areas within a project area that would be subject to their regulation.

7.6 U.S. Army Corps of Engineers Jurisdiction and General Permitting

7.6.1 SECTION 404 OF THE CLEAN WATER ACT

Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the U.S. Army Corps of Engineers (Corps) regulates the discharge of dredged or fill material into "waters of the United States" (33 CFR Parts 328 through 330). This requires project applicants to obtain authorization from the Corps prior to discharging dredged or fill materials into any water of the United States. In the Federal Register "waters of the United States" are defined as, "...all interstate waters including interstate wetlands...intrastate lakes, rivers, streams (including intermittent streams), wetlands, [and] natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce..." (33 CFR Section 328.3).

Limits of Corps' jurisdiction.

(a) Territorial Seas. The limit of jurisdiction in the territorial seas is measured from the baseline in a seaward direction a distance of three nautical miles. (See 33 CFR 329.12)

(b) Tidal Waters of the United States. The landward limits of jurisdiction in tidal waters:

(1) Extends to the high tide line, or
(2) When adjacent non-tidal waters of the United States are present, the jurisdiction extends to the limits identified in paragraph (c) of this section.

(c) Non-Tidal Waters of the United States. The limits of jurisdiction in non-tidal waters:

(1) In the absence of adjacent wetlands, the jurisdiction extends to the ordinary high water mark, or
(2) When adjacent wetlands are present, the jurisdiction extends beyond the ordinary high water mark to the limit of the adjacent wetlands.
(3) When the water of the United States consists only of wetlands the jurisdiction extends to the limit of the wetland.

Section 404 jurisdiction in "other waters" such as lakes, ponds, and streams, extends to the upward limit of the ordinary high water mark (OHWM) or the upward extent of any adjacent wetland. The OHWM on a non-tidal water is the "line on shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR Section 328.3[e]). Wetlands are defined as "...those areas that are inundated or saturated by surface or ground water at a frequency and duration to support a prevalence of

vegetation adapted for life in saturated soil conditions" (33 CFR Section 328.8 [b]). Wetlands usually must possess hydrophytic vegetation (i.e., plants adapted to inundated or saturated conditions), wetland hydrology (e.g., topographic low areas, exposed water tables, stream channels), and hydric soils (i.e., soils that are periodically or permanently saturated, inundated or flooded) to be regulated by the Corps pursuant to Section 404 of the Clean Water Act.

It should be noted that the extent of the Corps jurisdiction pursuant to Section 404 of the Clean Water Act was recently modified. In Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, the U.S. Supreme Court [148 L. Ed. 2d 576 (2001) (SWANCC)] ruled that the Corps exceeded its authority under the Clean Water Act when it regulated discharges of fill material into "isolated" waters used as habitat by migratory birds. Accordingly, waters (including wetlands) that are not connected hydrologically to navigable waters may now not be subject to regulation by the Corps.

A recent Supreme Court decision may also significantly change how the Corps defines waters of the United States. [Following text excerpted from a news letter prepared by Briscoe, Ivester, and Bazel LLP]: On June 19, 2006 the United States Supreme Court, in a "four-one-four" decision, addressed the extent of Clean Water Act jurisdiction over wetlands adjacent to tributaries of navigable waters. The extent to which the decision will further restrict federal regulation of wetlands remains unclear. In two consolidated cases, *Rapanos v. United States* and *Carabell v. U.S. Army Corps of Engineers* (hereinafter Rapanos Decision), a five-Justice majority of the Court remanded the case to the Sixth circuit for further consideration. The Court was unable to produce a majority vote in favor of any one jurisdictional standard for the Sixth Circuit to apply (or for the regulated community to follow). Instead, Justice Scalia authored a plurality opinion that would significantly narrow the reach of federal wetlands jurisdiction, while Justice Kennedy, concurring in the judgment only, concluded that the appropriate test for jurisdiction over wetlands was the presence of a "significant nexus" between wetlands and "navigable waters" in the traditional sense. The remaining four Justices, in a dissenting opinion by Justice Stevens, would have upheld the Corps of Engineers' assertion of jurisdiction and would have affirmed the Sixth Circuit's decision. When no opinion garners at least five votes, lower courts follow the concurrence that reached the result on the narrowest grounds. Here, that is Justice Kennedy's opinion. Unfortunately, Justice Kennedy did not provide specific guidance about the extent of federal jurisdiction over wetlands that are adjacent to tributaries of navigable waters.

Justice Kennedy concluded that the Clean Water Act applies only to those wetlands with a "significant nexus" to "navigable waters in the traditional sense." A significant nexus exists when a wetland, "either alone or in combination with similarly situated lands in the region, significantly affect[s] the chemical, physical, and biological integrity" of factually navigable waters. Under Supreme Court precedent, wetlands adjacent to navigable waters meet this test. For wetlands located near *tributaries* of navigable waters, however, each wetland demands a case-by-case jurisdictional inquiry. We know only that a "mere hydrological connection" is not enough in all cases, and that "speculative or insubstantial" effects on water quality will not suffice to satisfy the test.

On June 5, 2007 the U.S. Environmental Protection Agency and the Corps released "Regulatory Guidance" to the Corps Regulatory Districts nationwide interpreting how the Rapanos Decision should be implemented by the Corps. A summary of the key points follows.

The Regulatory Districts will assert jurisdiction over the following waters:

- Traditional navigable waters;
- Wetlands adjacent to traditional navigable waters;
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months);
- Wetlands that directly abut such tributaries.

The Regulatory Districts will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water:

- Non-navigable tributaries that are not relatively permanent;
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent;
- Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary.

The Regulatory Districts generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow);
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

The Regulatory Districts will apply the significant nexus standard as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters;
- Significant nexus includes consideration of hydrologic and ecologic factors.

To remain in compliance with Section 404 of the Clean Water Act, project proponents and property owners (applicants) are required to be permitted by the Corps prior to discharging or otherwise impacting "waters of the United States". In many cases, the Corps must visit a proposed project area (to conduct a "jurisdictional determination") to confirm the extent of area falling under their jurisdiction prior to authorizing any permit for that project area. Typically, at the time the jurisdictional determination is conducted, applicants (or their representative) will discuss the appropriate permit application that would be filed with the Corps for permitting the proposed impact(s) to "waters of the United States."

Pursuant to Section 404 of the Clean Water Act, the Corps normally provides two alternatives for permitting impacts to the type of "waters of the United States" found in the project area. The first

alternative would be to use Nationwide Permit(s) (NWP). The second alternative is to apply to the Corps for an Individual Permit (33 CFR Section 235.5(2)(b)).

The Corps maintains a policy of "no net loss" of wetlands (waters of the United States) from project area development. Therefore, it is incumbent upon applicants that propose to impact Corps regulated areas to submit a mitigation plan that demonstrates that impacted regulated areas would be recreated (*i.e.*, impacts would be mitigated). Typically, the Corps requires mitigation to be "in-kind" (i.e., if a stream channel would be filled, mitigation would include replacing it with a new stream channel), and at a minimum of a 1:1 replacement ratio (i.e., one acre or fraction there of recreated for each acre or fraction thereof lost). Often a 2:1 replacement ratio is required. Usually the 2:1 ratio is met by recreation or enhancement of an equivalent amount of wetland as is impacted, in addition to a requirement to preserve an equivalent amount of wetland as is impacted by the project. In some cases, the Corps allows "out-of-kind" mitigation if the compensation site has greater value than the impacted site. For example, if project designs call for filling an intermittent drainage, mitigation should include recreating the same approximate jurisdictional area (same drainage widths) at an offsite location or on a set-aside portion of the project area. Finally, there are many Corps approved wetland mitigation banks where wetland mitigation credits can be purchased by applicants to meet permitting requirements. Mitigation banks have limited distribution and the Corps typically only allows their use when projects have minimal affects on wetlands. If a project meets conditions of Nationwide Permits, and an Individual Permit is not required by the Corps, then typically the Corps allows use of wetland mitigation banks (if available) to meet its no net loss requirement and to otherwise mitigate the impacts of the project.

7.6.2 Applicability to the Proposed Project

There are no potential waters of the U.S. (or State) on the proposed development site. The long history of land manipulation, leveling and disking of the agricultural field on the project site has eliminated any potential "waters of the United States" on the field portion of the project site. However, the Corps would likely determine that Fahrens Creek has a "significant nexus" to a "traditional navigable water" since Fahrens Creek is a tributary of Bear Creek, which is a tributary of the San Joaquin River (a navigable water). Thus, it is M&A's expectation that Fahrens Creek would qualify as a "water of the United States." However, the proposed project will not impact Fahrens Creek or its levee. The proposed project includes preservation of Fahrens Creek, it levee, and a 20-foot buffer off the toe of this levee in a permanently protected easement. Consequently, impacts to "waters of the United States" will be avoided. Finally, per an agreement with the Merced Irrigation District (pers. comm. with Mr. Belluomini on April 13, 2007) the project will discharge stormwater into the existing Tower Lateral pipeline located at the southern boundary of the site. Thus, stormwater will not be discharged directly into Fahrens Creek via an outfall and thus there would be no impacts to this creek from the construction of the proposed project. **Thus, M&A concludes that implementation of the proposed project will not result in impacts to "waters of the United States."**

7.7 State Water Resources Control Board (SWRCB) / California Regional Water Quality Control Board (RWQCB)

7.7.1 Section 401 of the Clean Water Act

The SWRCB and RWQCB regulate activities in "waters of the State" (which includes wetlands) through Section 401 of the Clean Water Act. While the Corps administers permitting programs that authorize impacts to waters of the United States, including wetlands, and other waters, any Corps permit authorized for a proposed project would be invalid unless it is a NWP that has been certified for use in California by the SWRCB, or if the RWQCB has issued a project specific certification or waiver of water quality. Certification of NWPs requires a finding by the SWRCB that the activities permitted by the NWP will not violate water quality standards individually or cumulatively over the term of the issued NWP (the term is typically for five years). Certification must be consistent with the requirements of the federal Clean Water Act, the California Environmental Quality Act, the California Endangered Species Act, and the SWRCB's mandate to protect beneficial uses of waters of the State. Any denied (i.e., not certified) NWPs, and all Individual Corps permits, would require a project specific RWQCB certification or waiver of water quality.

Additionally, if a proposed project would impact waters of the State, including wetlands, and the project applicant cannot demonstrate that the project is unable to avoid these adverse impacts, water quality certification will most likely be denied. Section 401 Certification may also be denied based on significant adverse impacts to waters of the United States, including wetlands. The RWQCB has also adopted the Corps' policy that there shall be "no net loss" of wetlands. Thus, prior to certifying water quality, the RWQCB will impose avoidance mitigation requirements on project proponents that impact waters of the State.

7.7.2 Applicability to the Proposed Project

Fahrens Creek is a "water of the State" subject to regulation pursuant to Section 401 of the Clean Water Act. The proposed project will not impact Fahrens Creek or the levee along the creek. The project includes protecting the creek, the levee, and 20 feet outboard of the levee in a permanent non-disturbance buffer (an exception would be made in the easement area allowing for normal maintenance of the levee). Consequently, impacts to "waters of the State" will be avoided. In addition, the long history of land manipulation, leveling and discing of the agricultural field on the project site has eliminated any potential "water of the State" on this portion of the project site. Finally, per an agreement with the Merced Irrigation District (pers. comm. with Mr. Belluomini on April 13, 2007) the project will discharge stormwater into the existing Tower Lateral pipeline located at the southern boundary of the site. Thus, no stormwater outfall(s) would be constructed in Fahrens Creek as part of the project. As such, the proposed project will not impact waters of the State. **Thus, M&A concludes that implementation of the proposed project will not result in impacts to "waters of the State."**

7.7.3 Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act, Water Code § 13260, requires that "any person discharging waste, or proposing to discharge waste, within any region that could affect the waters of the State to file a report of discharge" with the RWQCB through an application for

waste discharge (Water Code Section 13260(a)(1). The term "waters of the State" is defined as any surface water or groundwater, including saline waters, within the boundaries of the State (Water Code § 13050(e)). It should be noted that pursuant to the Porter-Cologne Water Quality Control Act, the RWQCB also regulates "isolated wetlands," or those wetlands considered to be outside of the Corps' jurisdiction pursuant to the SWANCC decision (see Corps Section above).

The RWQCB generally considers filling in waters of the State to constitute "pollution." Pollution is defined as an alteration of the quality of the waters of the state by waste that unreasonably affects its beneficial uses (Water Code §13050(1)). The RWQCB litmus test for determining if a project should be regulated pursuant to the Porter-Cologne Water Quality Control Act is if the action could result in any "threat" to water quality.

7.7.4 APPLICABILITY TO PROPOSED PROJECT

Since any "threat" to water quality could conceivably be regulated pursuant to the Porter-Cologne Water Quality Control Act, care will required when constructing the proposed project to be sure that adequate pre and post construction Best Management Practices Plan (BMPs) are incorporated into a Storm Water Management Plan (SWMP) that will be implemented as part of the project. The SWMP will ensure that there are no impacts to receiving waters in the vicinity of the project site including but not limited to Fahrens Creek.

While SWMPs are complex, some of the basics are that 85 percent or greater of the average annual stormwater falling on impervious surfaces must be treated prior to being discharged into features that will carry the stormwater off site. Also, beginning in 2005, the RWQCB changed its policies to include a requirement that the first 2/10ths of an inch of rainfall from any storm event be treated prior to the time it is discharged from a project site. Flows above the first 2/10ths of an inch of rainfall may be discharged from the project site without further water quality treatment, although the project must still demonstrate that peak storm event discharges from the project site (point discharges with erosive flows) are ameliorated. Above ground pretreatment water quality basins can be designed into the site development plan to accommodate this requirement. Peak flow amelioration can also be achieved any number of other ways such as oversized piping with metered release points. Again though, water should be treated prior to entering any peak flow amelioration feature.

Treatment will occur by having storm water (the first 2/10ths of an inch) flow into and through linear infiltration basins (aka "bioswales") that have an added percolation function (French drains installed beneath the swales) or similar treatment facilities. Please note that the current standard the RWQCB is looking for is not necessarily flow through swales as much as vertical percolation. The RWQCB has expressed a desire to see two feet of vertical percolation capacity in any created treatment method. If soils are not suitable for infiltration the RWQCB suggests the swale feature be over-excavated and that replacement base soils be installed in the first two feet of the soil profile below the swale. On level or near level ground, swale-like features can be constructed similar to linear detention basins with standpipes that come into use when the capacity of the infiltration systems is exceeded. Water treatment basins should be landscaped or otherwise vegetated. Irrigation systems, necessary to sustain vegetation in the dry periods of the year are often a component of linear bioswale basins. Finally, typically roof leaders would have

to be diverted into treatments to account for impervious roof areas. These measures are now standard policies of the RWQCB prior to issuance of any discretionary permit(s) for a development project.

It should also be noted that prior to issuance of any permit from the RWQCB this agency will require submittal of a Notice of Determination from the CEQA lead agency (i.e., the School District) indicating that the proposed project has completed a review conducted pursuant to CEQA. The pertinent sections of the CEQA document (typically the biology section) are often submitted to the RWQCB for review prior to the time this agency will issue a permit for a proposed project.

7.7.5 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

In 1972 the Clean Water Act was amended to provide that the discharge of pollutants to waters of the United States from any point source is unlawful unless the discharge is in compliance with an NPDES permit. The 1987 amendments to the CWA added Section 402(p) which establishes a framework for regulating municipal and industrial storm water discharges under the NPDES Program. On November 16, 1990, the U.S. Environmental Protection Agency (USEPA) published final regulations that establish storm water permit application requirements for specified categories of industries. The regulations provide that discharges of storm water to waters of the United States from construction projects that encompass five (5) or more acres of soil disturbance are effectively prohibited unless the discharge is in compliance with an NPDES Permit. Regulations (Phase II Rule) that became final on December 8, 1999 expand the existing NPDES program to address storm water discharges from construction sites that disturb land equal to or greater than one (1) acre.

While federal regulations allow two permitting options for storm water discharges (individual permits and General Permits), the SWRCB has elected to adopt only one statewide General Permit at this time that will apply to all storm water discharges associated with construction activity, except from those on Tribal Lands, in the Lake Tahoe Hydrologic Unit, and those performed by the California Department of Transportation (CalTrans). Construction on Tribal Lands is regulated by an USEPA permit, the Lahonton Regional Water Control Board adopted a separate NPDES permit for the Lake Tahoe Hydrologic Unit, and the SWRCB adopted a separate NPDES permit for CalTrans projects. This General Permit requires all dischargers where construction activity disturbs one acre or more to:

1. Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting storm water and with the intent of keeping all products of erosion from moving off site into receiving waters.

2. Eliminate or reduce non-storm water discharges to storm sewer systems and other waters of the nation.

3. Perform inspections of all BMPs.

This General Permit is implemented and enforced by the nine California Regional Water Quality Control Boards (RWQCBs).

The General Permit regulates storm water runoff from construction sites. Regulating many storm water discharges under one permit will greatly reduce the otherwise overwhelming administrative burden associated with permitting individual storm water discharges. Dischargers shall submit a Notice of Intent (NOI) to obtain coverage under this General Permit. It is expected that as the storm water program develops, the RWQCBs may issue General Permits or individual permits containing more specific permit provisions. When this occurs, those dischargers will no longer be regulated by this General Permit.

Types of Construction Activity Covered by the General Permit

Construction activity subject to this General Permit includes clearing, grading, and disturbances to the ground such as stockpiling, or excavation that results in soil disturbances of at least one acre of total land area. Construction activity that results in soil disturbances of less than one acre is subject to this General Permit if the construction activity is part of a larger common plan of development that encompasses one or more acres of soil disturbance or if there is significant water quality impairment resulting from the activity. Construction activity does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility, nor does it include emergency construction activities required to protect public health and safety. Dischargers should confirm with the local RWQCB whether or not a particular routine maintenance activity is subject to this General Permit.

7.7.6 Applicability to Proposed Project

Surface grading and excavation of the project site will exceed one acre and thus would be regulated pursuant to the NPDES program. It is the responsibility of the applicant to obtain coverage under the General Permit prior to commencement of construction activities that disturb greater than one acre of area. To obtain coverage, the project proponent (landowner) must file an NOI with a vicinity map and the appropriate fee with the SWRCB. In addition, coverage under this permit shall not occur until the applicant develops an adequate SWPPP for the project. Section A of the General Permit outlines the required contents of a SWPPP. For proposed construction activity on easements or on nearby property by agreement or permission, the entity responsible for the construction activity shall file an NOI and filing fee and shall be responsible for development of the SWPPP, all of which must occur prior to commencement of construction activities.

The NOI must be sent to the following address:

State Water Resources Control Board
Division of Water Quality
Storm Water Permit Unit
1001 I Street, 15th floor
Sacramento, CA 95814
(916) 341-5455

7.8 California Department of Fish and Game Protections

7.8.1 Section 1602 of California Fish and Game Code

Pursuant to Section 1602 of the California Fish and Game Code, California Department of Fish and Game (CDFG) regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream which CDFG typically considers to include its riparian vegetation. Any proposed activity in a natural stream channel that would substantially adversely affect an existing fish and/or wildlife resource, would require entering into a Streambed Alteration Agreement (SBAA) with CDFG prior to commencing with work in the stream. However, prior to authorizing such permits, CDFG typically reviews an analysis of the expected biological impacts, any proposed mitigation plans that would be implemented to offset biological impacts and engineering and erosion control plans.

7.8.2 Applicability to Proposed Project

Impacts to the bed, bank, and channel of Fahrens Creek would be subject to regulation of CDFG pursuant to Section 1602 of the California Fish and Game Code. In practice this agency extends the limit of its jurisdiction under Section 1602 to the outside edge of riparian vegetation. **As the proposed project includes protection of Fahrens Creek, its levee, and a 20 foot strip outward from the levee, and this creek and associated (sparse) riparian vegetation would not be impacted by the proposed project, a Streambed Alteration Agreement with CDFG is not required for the proposed project.**

8. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) REGULATIONS

A CEQA lead agency must determine if a proposed activity constitutes a project requiring further review pursuant to the CEQA. Pursuant to CEQA, a lead agency would have to determine if there could be significant adverse impacts to the environment from a proposed project. Typically, if within the city limits, the city would be the CEQA lead agency. If a discretionary permit (i.e., conditional use permit) would be required for a project (e.g. an occupancy permit must be issued), the lead agency typically must determine if there could be significant environmental impacts. This is usually accomplished by an “initial study.” If there could be significant environmental impacts, the lead agency must determine an appropriate level of environmental review prior to approving and/or otherwise permitting the impacts. In some cases, there are “Categorical Exemptions” that apply to the proposed activity; thus the activity is exempt from CEQA. The Categorical Exemptions are provided in CEQA. There are also Statutory Exemptions in CEQA that must be investigated for any proposed project. If the project is not exempt from CEQA, the lowest level of review typically reserved for projects with no significant affects on the environment would be for the lead agency to prepare a “Negative Declaration.” If a proposed project would have only minimal impacts that can be mitigated to a level of no significance pursuant to the CEQA, then a “Mitigated Negative Declaration” is typically prepared by the lead agency. Finally those projects that may have significant affects on the environment, or that have impacts that can’t be mitigated to a level considered less than significant pursuant to the CEQA, typically must be reviewed via an Environmental Impact Report (EIR). All CEQA review documents are subject to public circulation, and comment periods.

Section 15380 of CEQA defines "endangered" species as those whose survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors. "Rare" species are defined by CEQA as those who are in such low numbers that they could become endangered if their environment worsens; or the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in FESA. The CEQA Guidelines also state that a project will normally have a significant effect on the environment if it will "substantially affect a rare or endangered species of animal or plant or the habitat of the species." The significance of impacts to a species under CEQA, therefore, must be based on analyzing actual rarity and threat of extinction to that species despite its legal status or lack thereof.

8.1.1 APPLICABILITY TO THE PROPOSED PROJECT

This document addresses impacts to species that would be defined as endangered or rare pursuant to Section 15380 of the CEQA. This document is suitable for use by the CEQA lead agency (in this case the Merced Union High School District) for preparation of any CEQA review document prepared for the proposed project. This report has been prepared as a Biology Section that is suitable for incorporation into an Environmental Impact Report.

9. IMPACTS ANALYSIS

In this section we discuss potential impacts to sensitive biological resources including special-status animal species and waters of the United States and/or State. We follow each impact with a mitigation prescription that when implemented would reduce impacts to the greatest extent possible.

9.1 Significance Criteria

A significant impact is determined using CEQA and CEQA Guidelines. Pursuant to CEQA §21068, a significant effect on the environment means a substantial, or potentially substantial, adverse change in the environment. Pursuant to CEQA Guideline §15382, a significant effect on the environment is further defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. Other Federal, State, and local agencies' considerations and regulations are also used in the evaluation of significance of proposed actions.

Direct and indirect adverse impacts to biological resources are classified as "significant," "potentially significant," or "less than significant." Biological resources are broken down into four categories: vegetation, wildlife, threatened and endangered species, and regulated "waters of the United States" and/or stream channels. "Significant" impacts as they pertain to these four categories are discussed under the appropriate heading below.

A "potentially significant" designation is used under circumstances where the presence of a special-status species or resource is uncertain and project construction could result in its loss. This designation is also used if it is unclear if the proposed project would result in a significant adverse impact, but the likelihood is great. "Less than significant" impacts are those impacts not put into either significant or potentially significant categories. Impacts would be generally

considered less than significant if the habitats and species affected were common and widespread in the region and in the State.

9.1.1 THRESHOLDS OF SIGNIFICANCE - PLANTS, WILDLIFE, WATERS

In accordance with Appendix G (Environmental Checklist Form) of the CEQA Guidelines, implementing the project would have a significant biological impact 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 US 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.

- 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.

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

9.1.2 IMPACTS TO WATERS OF THE UNITED STATES AND STATE.

Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the U.S. Army Corps of Engineers (Corps) regulates the discharge of dredged or fill material into waters of the United States, which includes wetlands, as discussed in the bulleted item above, and also includes "other waters" (stream channels, rivers) (33 CFR Parts 328 through 330). Substantial impacts to Corps regulated areas on a project site would be considered a significant adverse impact. Similarly, pursuant to Section 401 of the Clean Water Act, and to the Porter-Cologne Water Quality Control Act, the RWQCB regulates impacts to waters of the state. Thus, substantial impacts to RWQCB regulated areas on a project site would also be considered a significant adverse impact.

9.1.3 IMPACTS TO STREAM CHANNELS

Pursuant to Section 1602 of the California Fish and Game Code, CDFG regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream which CDFG typically considers to include riparian vegetation. Any proposed activity that would

result in substantial modifications to a natural stream channel would be considered a significant adverse impact.

10. IMPACT ASSESSMENT AND PROPOSED MITIGATION

10.1 Impact BIO-1. Development Of The Project Would Have A Potentially Significant Adverse Impact On Nesting Raptors

Suitable nesting habitat for the white-tailed kite, red-tailed hawk, Swainson's hawk, western burrowing owl, and northern harrier occurs on or adjacent to the project site. Only the red-tailed hawk is known to nest in the vicinity of the project site. Since the Swainson's hawk is a state listed species which typically requires greater mitigation then non-listed raptors, the Swainson's hawk is discussed in a separate mitigation measure below. Similarly, since the western burrowing owl is a California species of special concern and CDFG has prepared formal mitigation guidelines for impacts to this owl species, mitigation for the western burrowing owl is also discussed in a separate mitigation measure below.

The white-tailed kite is fully protected under the California Fish and Game Code (3511). The northern harrier is a state species of special concern. The white-tailed kite, the red-tailed hawk, and the northern harrier are also protected under the Migratory Bird Treaty Act (50 CFR 10.13) and their nest, eggs, and young are protected under California Fish and Game Code Sections 3503, 3503.5. Any project-related impacts to these species or their habitat would be considered a significant adverse impact. Potential impacts to these species from the proposed project could include loss of nesting habitat, disturbance to nesting birds, and possibly death of adults and/or young.

Red-tailed hawks have been identified nesting in a willow along Fahrens Creek approximately 300 feet southwest of the project site. No other nesting raptors were identified on or adjacent to the proposed project site during M&A's survey or during the nesting raptor surveys conducted by Mr. Silva in April and May of 2007. However, all of these species are known to occur locally and could move onto the project site or within an "area of influence" adjacent to the project site. The area of influence varies from species to species known from the region, but in all cases would not be greater than 1,000 feet of the project site.. If these raptors were nesting near the proposed project site, construction-related disturbance could result in nest abandonment and/or other impacts to nesting raptors which would be a violation of the Migratory Bird Treaty Act (§50 CFR 10.13) and the California Fish and Game Codes §§ 3503, 3503.5. As such, impacts to these raptors are regarded as potentially significant. These impacts could be mitigated to a level considered less than significant. Impacts to unoccupied nesting habitats for these species would not be considered significant as there are other local and regional nesting habitats available for use by these species that could be used in subsequent nesting seasons. Consequently no mitigation is warranted for impacts to unoccupied nesting habitats. Finally, if these raptor species nest near the project site once the site has been developed, these raptors would be considered habituated to any existing disturbance from the school site, and consequently, no mitigation would be warranted for these nesting raptors near or on the project site.

10.2 Mitigation Measure BIO-1. Mitigation for Nesting Raptors

If construction would commence between March 1 and September 1, surveys should be conducted 30 days prior to construction of the project. The raptor nesting surveys shall include examination of all trees and shrubs within the area of influence of the proposed project. For the purposes of this document, the "area of influence" is within 1,000 feet of the project site.

If nesting raptors are identified during the surveys on the project site, the dripline of the nest tree or shrub must be fenced with orange construction fencing and a 300-foot radius buffer around the nest tree or shrub must be fenced with bright orange construction fencing. This 300-foot buffer may be reduced in size if a qualified raptor biologist determines through monitoring that the nesting raptors are acclimated to people and disturbance, and otherwise would not be adversely affected by construction activities. At a minimum, however, the non-disturbance buffer shall be a radius of 100 feet around the nest tree or shrub. If the nest site is on an adjacent property, the portion of the buffer that occurs on the project site shall be fenced with orange construction fencing. When construction buffers are reduced in size, the raptor biologist shall monitor distress levels of the nesting birds while the birds nest and construction persists. If at any time the nesting raptors show levels of distress that could cause nest failure or abandonment, the raptor biologist shall have the right to re-implement the full 300-foot buffer. Instances when the buffer could be reduced in size would be if the raptors were well acclimated to disturbance and/or if there were physical barriers between the nest site and the construction project that would reduce disturbance to the nesting raptors.

No construction or earth-moving activity should occur within the non-disturbance buffer until it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by July 1st. Regardless, the resource agencies consider September 1st the end of the nesting period unless otherwise determined by a qualified raptor biologist. Once the raptors have completed the nesting cycle, that is the young have reached independence of the nest, no further regard for the nest site shall be required. No other compensatory mitigation is required.

When implemented these mitigation measures would reduce impacts to nesting raptors to a level considered *less than significant*.

10.3 Impact BIO-2. Development Of The Project Would Have A Potentially Significant Adverse Effect On The Swainson's Hawk

The Swainson's hawk is a state listed threatened species. While the Swainson's hawk has no special federal status it is protected from direct take under the Federal Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711). Swainson's hawks, their nests, eggs, and young are also protected under California Fish and Game Code (§3503, §3503.5, §3513, and §3800).

The closest known record for nesting Swainson's hawk is 8.2 miles north of the project site (CNDDB Occurrence No. 1106). No Swainson's hawk nests were discovered on the site or offsite in the vicinity of the project site during M&A's project site survey or the raptor surveys conducted by Mr. Silva in April and May of 2007. However, this species is known to occur locally and could nest in a tree on or near the project site in the future. If Swainson's hawks are found to be nesting on or near the proposed project site, implementation of the proposed project

site would be viewed by CDFG as an impact to Swainson's hawk foraging habitat. Loss or alteration of foraging habitat or nest site disturbance which results in: (1) nest abandonment; (2) loss of young; (3) reduced health and vigor of eggs and/or nestlings (resulting in reduced survival rates), may ultimately result in the take (killing) of nestling or fledgling Swainson's hawks incidental to otherwise lawful activities. The taking of Swainson's hawks in this manner can be viewed by the CDFG as a violation of the Section 2080 of the Fish and Game Code. This interpretation of take has been judicially affirmed by the landmark appellate court decision pertaining to CESA (CDFG v. ACID, 8 CA App.4, 41554) (CDFG 1994).

Any disturbance around a Swainson's hawk nest that is not characteristic of the normal activities around the nest site that caused disruption of the nesting attempt would likely be regarded by CDFG as a violation of CESA. Typically, CDFG requires that any impact to a Swainson's hawk nest be permitted through a Fish and Game Section 2081 management authorization. If an active nest is found on or adjacent to the project site within the area of influence of the project site (which is generally considered to be within 1,000 feet of the project site) "to avoid potential violation of Fish and Game Code 2080 (i.e., killing of listed species), project-related disturbance at active Swainson's hawk nesting sites should be reduced or eliminated during critical phases of the nesting cycle (March 1- September 15 annually)" (CDFG 1994). If disturbance would occur, a Fish and Game Section 2081 management authorization would be required. Impacts to nesting Swainson's hawks would be considered a significant impact. However, if Swainson's hawks nest on or near the project site once the site has been developed, these Swainson's hawks would be considered habituated to any existing disturbance from the school site, and consequently, no mitigation would be warranted for nesting Swainson's hawks near or on the project site.

While M&A did observe Swainson's hawks foraging over non-native annual grasslands east of the project site during our site assessment, the loss of 58 acres of agricultural habitat constituting the project site would be insignificant in a regional context, particularly in light of the fact that Swainson's hawks are not known to nest within 5 miles of the project site. Therefore, impacts to potential Swainson's hawk foraging habitat are considered less than significant.

10.4 Mitigation Measure BIO-2. Mitigation for Swainson's Hawk

CDFG has prepared guidelines for conducting surveys for Swainson's hawk entitled: *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (CDFG 2000). These survey recommendations were developed by the Swainson's Hawk Technical Advisory Committee (TAC) to maximize the potential for locating nesting Swainson's hawks, and thus reduce the potential for nest failures as a result of project activities and/or disturbances. To meet the CDFG's recommendations for mitigation and protection of Swainson's hawks, surveys should be conducted for a half-mile radius around all project activities and should be completed for at least the two survey periods immediately prior to a project's initiation. The guidelines provide specific recommendations regarding the number of surveys based on the project is scheduled to begin and the time of year the surveys are conducted.

If Swainson's hawks are found to be nesting on or in the immediate vicinity of the project site, consultation with CDFG and mitigation compensation would be required. At that time, the necessity of acquiring a Fish and Game Section 2081 management authorization should be

determined. CDFG has prepared a *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California* (CDFG 1994) (hereinafter the Mitigation Guidelines) that prescribes avoidance and mitigation guidelines for impacts to Swainson's hawk nesting and foraging habitats. The Mitigation Guidelines require applicants to replace any impacted Swainson's hawk nesting and/or foraging habitat with other suitable Swainson's hawk nesting/foraging habitat. Because there is extensive foraging habitats for Swainson's hawks north and northeast of the project site in a local perspective, Merced Unified School District has determined that impacting potential agricultural foraging habitat from implementation of the project would not constitute a significant adverse impact pursuant to the CEQA. However, if Swainson's hawks nest on or within the area of influence of the project site (within 1,000 feet of the project site), impacts to nesting Swainson's hawks would be regarded as significant and adverse, and mitigation compensation would be required. Mitigation required would include a 1:1 impact to replacement ratio (58 acres of mitigation land) for all project disturbed habitat.

The CDFG Mitigation Guidelines states that acceptable mitigation to offset impacts to Swainson's hawk foraging habitat can be met by Fee Title acquisition of Swainson's hawk habitat, or by acquisition of the right to record a conservation easement over lands that can be managed for this hawk species (hereinafter Habitat Management Lands). Any land acquired through Fee Title would have to be donated to a suitable conservation organization for management. In addition to providing Habitat Management Lands, the applicant would be assessed a management fee for the long-term management of the Habitat Management Lands by a suitable conservation organization.

Implementation of the above mitigation measures would reduce impacts to Swainson's hawk to a level considered *less than significant.*

10.5 Impact BIO-3. Development Of The Project Would Have A Potentially Significant Adverse Effect On The Western Burrowing Owl

The western burrowing owl is a state species of special concern. This owl is also protected under California Fish and Game Code §3503, §3503.5, §3513, and §3800, and the Federal Migratory Bird Treaty Act. The closest known record for western burrowing owl is 1.7 miles east of the project site (CNDDB Occurrence No. 347). During the raptor surveys conducted by Mr. Silva in April and May of 2007, no burrowing owls were observed on the site; however, Monk & Associates biologists have observed western burrowing owl in several locations along Bellevue, east of State Route 59. Since this owl and ground squirrels are known from the area, this species could move onto the project area in the future.

If western burrowing owl were found nesting near the proposed project site, construction-related disturbance could result in nest abandonment and/or other impacts to nesting western burrowing owl which would be a violation of the Migratory Bird Treaty Act (§50 CFR 10.13) and the California Fish and Game Codes §§ 3503, 3503.5. These impacts would be considered a significant impact. However, if western burrowing owls nest on the levee along Fahrens Creek once the site has been developed, these western burrowing owls would be considered habituated to any existing disturbance from the school site, and consequently, no mitigation or other actions would be warranted for nesting western burrowing owls near or on the project site.

10.6 Mitigation Measure BIO-3. Mitigation for Western Burrowing Owl

Mitigation Measure BIO-3-A. A nesting survey shall be conducted for ground nesting raptors, such as western burrowing owl and northern harrier. The survey should be conducted in accordance with the survey requirements detailed in the CDFG's October 17, 1995 *Staff Report on Burrowing Owl Mitigation.* Surveys shall be conducted in both the breeding season (April 15-July 15) and non-breeding season (December-January) to assess use of the project site by this species. If burrowing owls are present on the project site during the breeding season (peak of the breeding season is April 15 through July 15), and appear to be engaged in nesting behavior, a fenced 75 meter (276-foot) buffer would be required between the nest site(s) (i.e., the active burrow(s)) and any earth-moving activity or other disturbance on the project site. This 276-foot buffer could be removed once it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest). Typically, the young fledge by August 31. This date may be earlier than August 31, or later, and would have to be determined by a qualified raptor biologist. If northern harriers are identified on the project site, mitigation measures detailed above for nesting raptors (Mitigation Measure BIO-1) should be implemented.

Additionally, if burrowing owls are identified nesting onsite or within the area of influence of the project site (within 1,000 feet of the project site), an upland mitigation area for burrowing owls shall be established either on or offsite. The mitigation site must be determined to be suitable by a qualified biologist. The size of the required mitigation site will be based on the number of burrowing owls observed on the project site with a minimum of 6.5 acres preserved per pair of owls or single owl observed using the site. The number of owls for which mitigation is required shall be based on the combined results of the protocol-level survey and the preconstruction surveys (i.e., if two pairs of owls are observed on the project site during the protocol-level survey, the mitigation requirement shall be 2 x 6.5 = 13 acres provided that no more than two pairs of owls are observed during the preconstruction survey; if three pairs of owls are observed during the preconstruction survey, then the mitigation requirement shall be 3 x 6.5 = 19.5 acres). A detailed mitigation and monitoring plan shall be developed for the burrowing owl mitigation area. This plan must be prepared in coordination with CDFG, and approved by this agency.

Mitigation Measure BIO-3-B. Preconstruction surveys of the project site shall be conducted no more than 30 days prior to ground disturbing activities. If more than 30 days lapse between the time of the preconstruction survey and the start of ground-disturbing activities, another preconstruction survey must be completed. This process should be repeated until the habitat is converted to non-habitat (e.g., graded and developed).

Mitigation Measure BIO-3-C. If burrowing owls must be passively relocated from the project site, as approved by CDFG, passive relocation shall not commence until October 1st and must be completed by February 1st. After passive relocation, the project site and vicinity will be monitored by a qualified biologist daily for one week and once per week for an additional two weeks to document where the relocated owls move and to ensure that the owls are not reoccupying the project site. A report detailing the results of the relocation and subsequent monitoring will be submitted to CDFG within two months of the relocation.

Mitigation Measure BIO-3-D. If an upland mitigation site is designated for burrowing owls, it shall be approved as a suitable burrowing owl mitigation property by CDFG. The preserved area

shall be preserved in perpetuity as wildlife habitat via recordation of a conservation easement that designates the California Department of Fish and Game (CDFG), or any other qualified conservation organization as the Grantee of the easement.

Mitigation Measure BIO-3-E: If a conservation easement is established over burrowing owl habitat, an endowment to cover the management of the mitigation area and implementation of the mitigation and monitoring plan shall be provided by the project applicant to the Grantee of the Conservation Easement within six months of breaking ground on the project site.

Implementation of the mitigation measures above would reduce impacts to western burrowing owl to a level considered *less than significant*.

10.7 Impact BIO-4. Development Of The Project Would Have A Potentially Significant Adverse Effect On Common And Special-Status Nesting Birds

The trees and shrubs along Fahrens Creek provide potential nesting habitat for common bird species and possibly special-status species. Birds protected pursuant to the Migratory Bird Treat Act and California Department of Fish and Game Code §3503 and §3800 could nest on the project site and may be disturbed to an extent that eggs and/or young would be lost. Impacts to protected bird species during the nesting season would be regarded as a significant adverse impact. Such an impact could be mitigated to a level considered less than significant.

10.8 Mitigation BIO-4. Mitigation for Common and Special-Status Nesting Birds

In order to avoid impacts to common and special-status nesting birds protected pursuant to the Migratory Bird Treat Act and California Department of Fish and Game Codes §3503, §3503.5, and §3800, a nesting survey should be conducted prior to commencing with construction work if construction work would commence between March 15th and August 31st. If special-status birds are identified nesting within the area of influence, a 100-foot non-disturbance radius around the nest must be fenced (this fencing requirement shall not replace or be constructed in lieu of fencing discussed above for impacts to nesting raptors). No construction or earth-moving activity shall occur within this 100-foot staked buffer until it is determined by a qualified ornithologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by July 1st. This date may be earlier or later, and would have to be determined by a qualified ornithologist. Similarly, the qualified ornithologist could modify the size of the buffer based upon site conditions and the bird's apparent acclimation to human activities.

If common (that is, not special-status) passerine birds (that is, perching birds such as northern mockingbirds) are identified nesting in any tree or shrub proposed for removal, tree removal would have to be postponed until it is determined by a qualified ornithologist that the young have fledged and have attained sufficient flight skills to leave the project site. Typically, most passerine birds can be expected to complete nesting by July 1st, with young attaining sufficient flight skills by this date that are sufficient for young to avoid project construction zones. Unless otherwise prescribed for special-status bird species, upon completion of nesting no further protection or mitigation measures would be warranted for nesting birds.

Implementation of the above mitigation measures would reduce impacts to common nesting and special-status bird species to a level considered *less than significant*.

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Appendix D

Cultural Resources Records Search

CENTRAL CALIFORNIA INFORMATION CENTER

California Historical Resources Information System

Department of Anthropology - California State University, Stanislaus
801 W. Monte Vista Avenue, Turlock, California 95382
(209) 667-3307 - FAX (209) 667-3324

Alpine, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus & Tuolumne Counties

Date: June 20, 2006

Carl Smith, Senior Associate Planner
Quad Knopf, Inc.
P.O. Box 3699
Visalia, CA 93277

CCIC File #: 6340I
Project: Bellevue High School,
APN #052-230-074

Dear Mr. Smith,

We have conducted a RUSH records search as per your request for the above-referenced project area located on the Merced USGS 7.5-minute quadrangle map in Merced County.

Search of our files includes review of our maps for the specific project area and a one-mile radius of the project area (as specified by the client), and review of the National Register of Historic Places, the California Register of Historical Resources, *the California Inventory of Historic Resources* (1976), the *California Historical Landmarks* (1990), and the *California Points of Historical Interest* listing (May 1992 and updates), the Historic Property Data File (Office of Historic Preservation current computer list dated 3/17/2006), the CALTRANS State and Local Bridge Survey (1989 and updates), the *Survey of Surveys* (1989), GLO Plats, and other pertinent historic data available at the CCIC for each specific county.

The following details the results of the records search:

Prehistoric or historic resources within the project area:

No prehistoric or historic archaeological resources or historic properties have been reported to the CCIC.

However, the canals in and immediately adjacent to the project area are over 50 years old and have not been formally documented and evaluated at that location. A portion of the Tower Lateral Canal (construction date 1925) has been recorded and evaluated nearer to Merced and determined to be ineligible for inclusion in the NRHP, but was not evaluated for the California Register or local listing (status code 6Y)—according to page 8 of the current Historic Property Data File.

Prehistoric or historic resources within a one-mile radius of the project area:

No prehistoric resources have been reported to the CCIC.

Recorded historic features (none of them are immediately adjacent):

Primary # P-24-	**(no Trinomials assigned)**
001773	Bellevue Ranch and appurtenant buildings, building remains, and other structures.
001771	Bellevue Ranch water conveyance system of canals, ditches and wells.
001770	Bellevue Ranch utilities system.

Other historic data:

The GLO Plat map for T6S/R14E (sheet #44-407, dated 1853) does not show or reference any cultural features at or immediately adjacent to the project, but a creek and pond are shown in the N ½ of the N ½ of section 31, the creek moving northeast and southwest. A "Road" is referenced in the N ½ of the NE ¼ of section 31, and another "Road" is referenced to the northeast, passing within one mile in section 29.

The Historic Property Data File (page 30) shows a listing for an evaluated portion of Six Mile Drain along G Street (construction date 1950). Also given status code 6Y. An unevaluated portion of the canal is immediately adjacent but it appears to lie across the road from the project.

The same page shows a listing for Oust Farmstead (ca. 1903) on Bellevue Road, status code 6Y. We do not have an address or any forms for this property and do not know its exact location and whether it lies within 1-mile.

The historic Rotterdam Colony area lies north of Old Lake Road and East of Golf Road, according to *Lost Dutch Colony*, by Leonora Hering as told to Warren Lewis (1979).

Resources that are known to have value to local cultural groups:

None have been formally reported to the CCIC.

Previous investigations within the project:

One has been reported to the CCIC as follows:

CCIC Report #		
ME-2100	Garaventa et al. (1993)	*Cultural Resources Assessment, Bellevue Ranch EIR*

Previous investigations within a one-mile radius of the project area:

Five have been reported to the CCIC as follows:

ME-		
629	Napton (1979)	*Cultural Resources Survey of the Proposed Expansion of G Street, Merced*
2097	Harville (1993)	*A Phase I Archaeological Survey of the Commonwealth Subdivision, Merced*
4387	URS Corporation (2001)	*Technical Report, U.C. Merced, Cultural Resources (Archaeological and Historic Built Environment Resources)*
5204	Self (2003)	*Letter Report Regarding Archaeological Survey and Assessment of Bellevue Ranch East Survey Area*
5262	Estes et al. (2001)	*Cultural Resources Survey and Assessment Report, Woodside Group—Bellevue Ranch Project*

Recommendations/Comments:

Please be advised that a historical resource is defined as a building, structure, object, prehistoric or historic archaeological site, or district possessing physical evidence of human activities over 45 years old. There may be unidentified features involved in your project that are 45 years or older and considered as historical resources requiring further study and evaluation by a qualified professional of the appropriate disciplline.

Based on existing data in our files the project area has been subject to comprehensive and intensive cultural resources field survey by professional archaeologists.

We recommend:

(1) Documentation and evaluation of the canals in the project area if they will be impacted or altered.

(2) Professional archaeological monitoring of excavation that takes place immediately adjacent to Fahrens Creek, as this area is more sensitive for the possible discovery, under the surface, of evidence of prehistoric occupation. This may include burials, house pits, milling implements, other tools or tool fragments, and other habitation debris.

We have attached a copy of the current *Referral List for Historical Resources Consultants* for your use.

We advise you that in accordance with State law, if any historical resources are discovered during project-related construction activities, all work is to stop and the lead agency and a qualified professional are to be consulted to determine the importance and appropriate treatment of the find. If Native American remains are found the County Coroner and the Native American Heritage Commission, Sacramento (916-653-4082) are to be notified immediately for recommended procedures.

We thank you for contacting this office regarding historical resource preservation. Please let us know when we can be of further service. Billing is attached, payable within 60 days of receipt of the invoice.

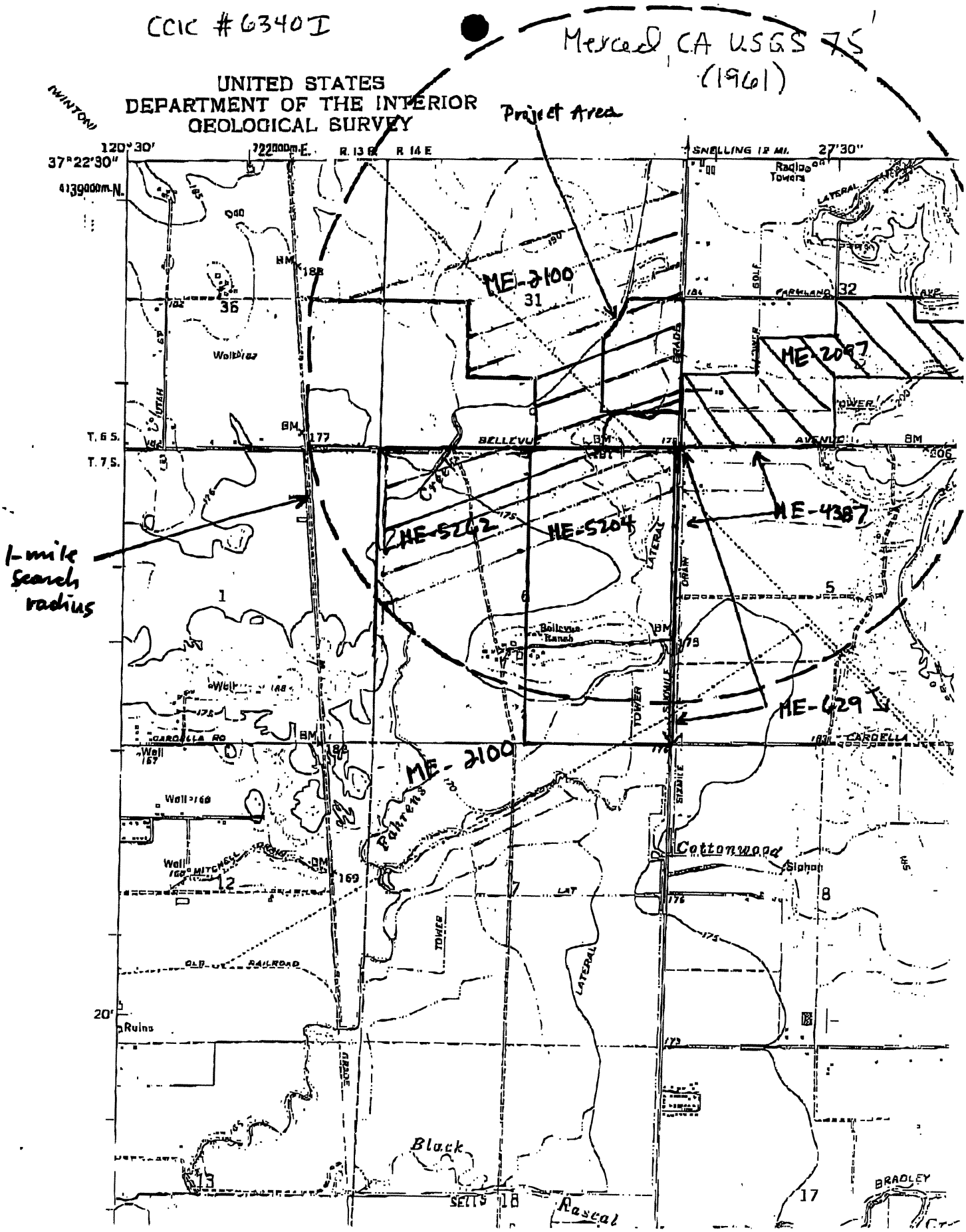
Sincerely,

R Hards

Robin Hards, Assistant Research Technician
Central California Information Center
California Historical Resources Information System

CCIC #6340I

Merced, CA USGS 7.5 (1961)



Appendix E

Traffic Impact Study

TRAFFIC IMPACT ANALYSIS

FOR

MERCED UNION HIGH SCHOOL DISTRICT'S
BELLEVUE ROAD CAMPUS

Merced, California

Prepared For:

QUAD KNOPF
5110 West Cypress
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(916) 660-1555

Revised August 8, 2007
April 18, 2006

5600-44

Merced HS Farmland.rpt

TRAFFIC IMPACT ANALYSIS FOR
MERCED UNION HIGH SCHOOL DISTRICT'S
BELLEVUE ROAD CAMPUS
Merced, California

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Revised August 8, 2007
April 18, 2006

TRAFFIC IMPACT ANALYSIS FOR
MERCED UNION HIGH SCHOOL DISTRICT'S
BELLEVUE ROAD CAMPUS
Merced, California

INTRODUCTION

This report summarizes **KDAnderson & Associates**' analysis of the traffic impacts associated with developing the Merced Union High School District's Bellevue Road Campus. The proposed project is a 2,400-student high school to be developed on a site north of Bellevue Road and west of G Street in northern Merced. This analysis deals with traffic conditions occurring at the time that the High School opens in the year 2009, as well as cumulative conditions occurring in the future 2030 with other development in northern Merced. This analysis is intended to 1) identify those circulation system improvements that will need to be in place when the school opens, and 2) confirm the adequacy of site access under long term cumulative traffic conditions.

Study Methodology

The methodology used to prepare this Traffic Impact Study follows an approach that is recognized by members of the traffic engineering profession, is consistent with CEQA guidelines and conforms to City of Merced and Caltrans guidelines for traffic impact studies.

The first phase of the study included the collection of traffic data and the analysis of that data to determine existing operating conditions. Manual traffic counts were taken during the weekday morning peak hour (7:00 to 9:00 a.m.) to identify turning movement volumes at five existing study intersections. Techniques contained in the *2000 Highway Capacity Manual* were used to analyze the operational characteristics of the intersections and to identify the current Level of Service at each location during each time period.

The second phase of the analysis involved estimating trip generation for the planned project. The Institute of Transportation Engineers' publication *Trip Generation-Sixth Edition* was used as an initial basis for determining the number of trips to be generated by the new High School, but published average rates were adjusted to account of the location of housing within the school's service area, traffic volumes observed at similar central valley high schools and district bussing experience. Because p.m. peak hour generation rates for this use are significantly lower than a.m. rates, the amount of traffic associated with the high school is much greater during the a.m. peak hour (i.e. 1,800 trips with 2,400 students) than during the weekday p.m. peak hour (i.e., 360 trips with 2,400 students). Thus, it was determined that the analysis would focus on the a.m. peak hour scenario to address the impacts of regular high school operation. While high schools generate considerable traffic during the early afternoon when the school day ends, background traffic volumes during that time period are considerably lower than during the a.m. peak hour. Thus, analysis of a.m. peak hour conditions represents a "worst case" condition.

The third phase of the study determined the distribution of trips into and out of the project and

adjacent streets based on the anticipated school service area, school district bussing policy, location of regional employment centers, etc. Information provide by the Merced Union High School District regarding the school's probable service area boundary was used for this purpose, along with information from the City of Merced Planning Department regarding the short term and long term distribution of residences in this area of Merced.

The fourth phase was identification of background traffic conditions occurring in the short term and long term future. The proposed project may open in 2009, and this analysis conservatively assumes 2,400 students on campus at that time. For this analysis the opening day background condition assumes both continuing regional background growth and the development of other projects now being considered by the City of Merced. Roadway improvements that can be assumed to be installed by others by opening day were determined in consultation with City of Merced Planning Department staff.

The fifth study phase was to assign the project trips to the street network and to add these new trips to the opening day traffic volumes. This was accomplished based on consideration of the overall circulation system that will accompany planned residential development as well as consideration of the layout of the campus. Resulting operating Levels of Service were calculated and reviewed to determine the extent of roadway improvements needed to provide adequate Levels of Service.

A similar procedure was then followed for future year 2030 traffic, with and without the project assuming implementation of long term improvements included in adopted fee programs. Year 2030 background conditions were derived from new traffic model forecast prepared by the Merced County Association of Governments (MCAG) assuming residential development on the subject site. This represents the cumulative "no project" condition. Cumulative "Plus Project" conditions assume the high school replaces the planned residences.

The sixth phase of the analysis addressed mitigation measures that would be required to adequately accommodate project traffic. The extent to which improvements beyond those required for background development are required to meet adopted standards has been determined, and the project's "fair share" responsibility for the cost of regional circulation system improvements has been determined.

Project Description

For the purpose of this Traffic Impact Study, the project is defined as the acquisition of an approximately 51 acre site and the development and operation of a high school on the site. The school site is generally located north of Bellevue Road, and west of G Street in the area bounded by the extension of Farmland Avenue and a planned collector street (Barclay Avenue), as indicated in Figure 1.

The High School will have a planned capacity of 2,000 students and an ultimate capacity of approximately 2,400 students. It will serve grades 9 through 12 on a traditional schedule. This analysis addresses the impacts associated with a 2,400 student attendance level.

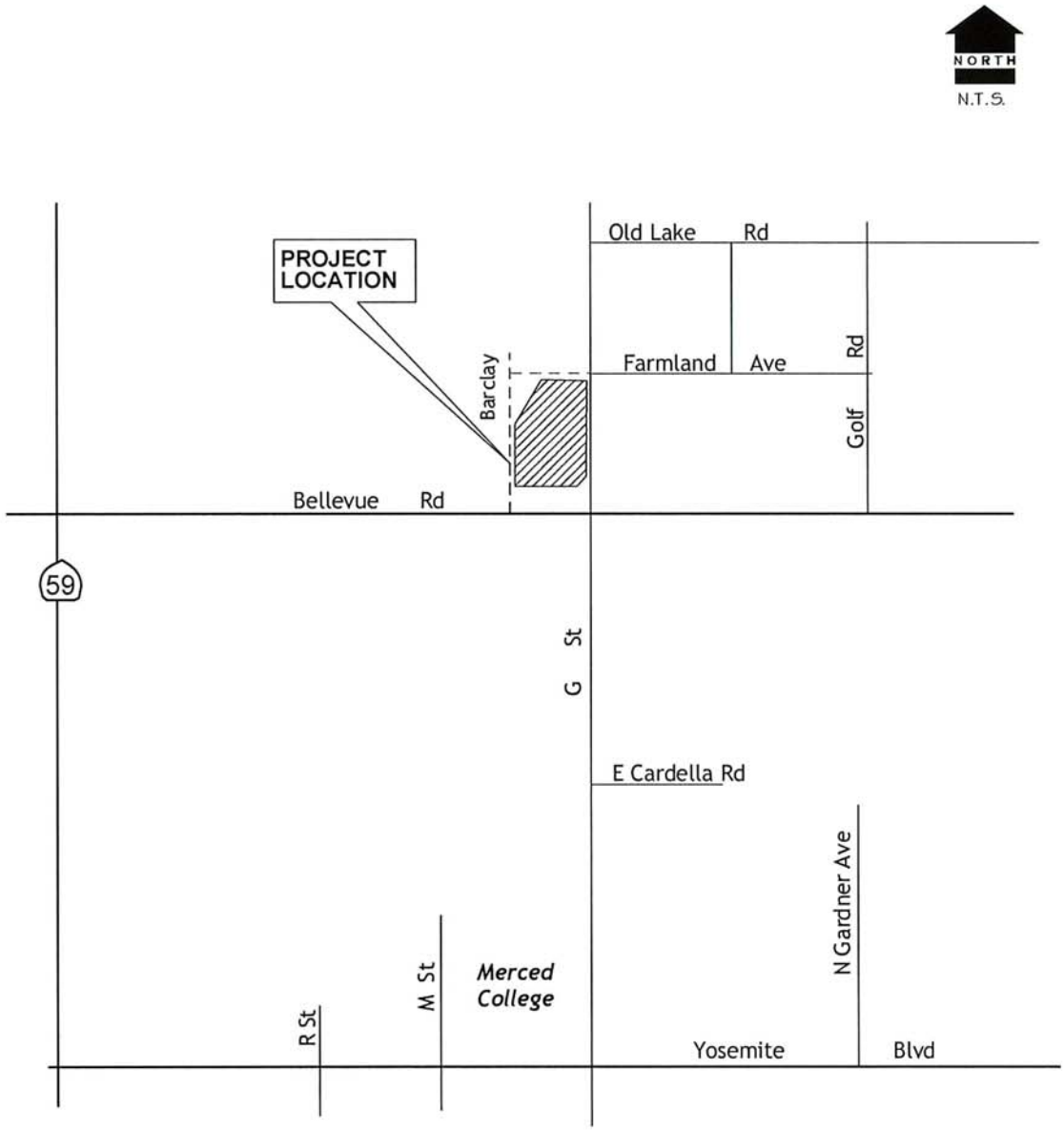
Facilities planned for the school include administrative offices, classrooms, a library/career center, a

cafeteria/multi-purpose room, a performing arts complex and gymnasium. Outdoor athletic/ recreational facilities will include baseball/softball diamonds, soccer fields, basketball and tennis courts and a 2,400-seat football stadium. The traffic associated with use of the stadium represents the site's primary "extracurricular" trip generation. On site parking will be provided, with approximately 580 spaces available to students, staff, and visitors.

A site plan exists indicating the location of access to the site and a possible configuration of uses on the site. This plan suggests project access at one location on the extension of Farmland Avenue along the north side of the site between G Street and Fahrens Creek and at a location on Barclay Avenue south of the creek crossing. As shown in Figure 2, access to the school's parking lots will be available from either street.

Access to the site is affected by the circulation system improvements required to cross the creek. Because of difference in elevation, the Farmland Avenue extension will have to rise above the natural grade in order to cross the canal. The resulting difference in elevation between the road and the campus will have an effect on the location of site access. While the site has nearly 800 feet of frontage on Farmland Avenue due to the vertical alignment of the approach to the bridge, the site access will be approximately 400 feet from G Street. This location will also have to provide access to the residential property north of Farmland Avenue.

As with Farmland Avenue, decisions regarding the location of Barclay Avenue's Fahrens Creek crossing have had an effect on access opportunities for the new high school. With the proposed realignment of Barclay Avenue away from the school property, only one access onto that road will be possible.



KD Anderson & Associates, Inc.
Transportation Engineers

VICINITY MAP

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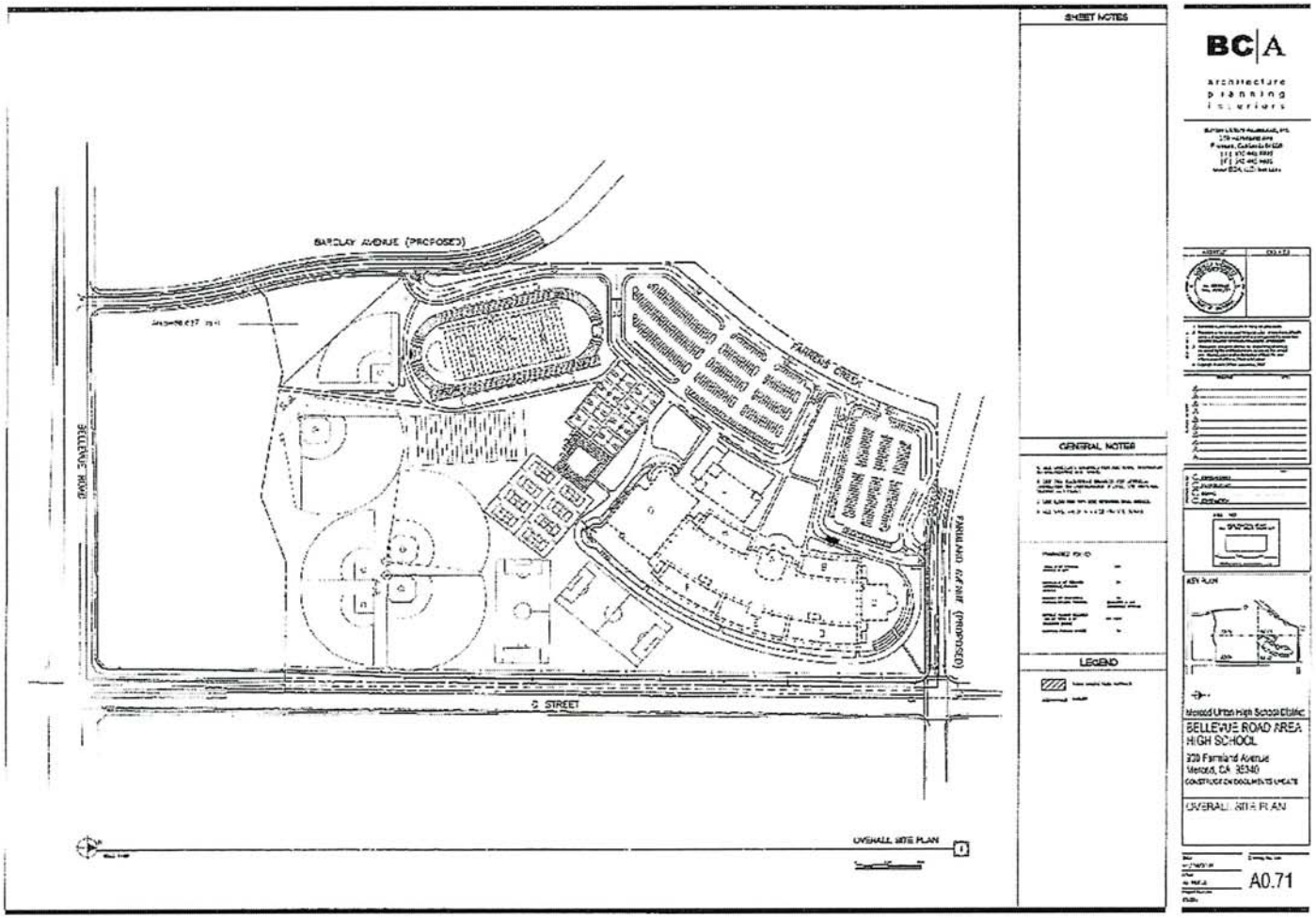
figure 1



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SITE PLAN

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figure 2

EXISTING SETTING

Study Area

The limits of this analysis are focused on the major intersections along key routes to and from the proposed school site. After a preliminary investigation of the existing traffic circulation patterns and school boundary and discussion with City of Merced Planning staff, it was determined that the traffic analysis should investigate the operational characteristics of the following existing intersections on the streets serving the proposed project:

1. G Street / Farmland Avenue
2. Farmland Avenue / Golf Road
3. Bellevue Road / SR 59
4. Bellevue Avenue / Barclay Avenue
5. Bellevue Avenue / G Street
6. G Street / Cardella Road
7. G Street / Yosemite Avenue

The locations of these intersections along with the existing road network are shown on Figure 3, while the text that follows describes the characteristics of each facility.

State Route 59 is a major north-south arterial serving northwestern Merced. SR 59 extends northerly from an interchange on SR 99 along the western limits of the urbanized Merced area. In the vicinity of the proposed project, SR 59 is a two lane rural highway with graveled shoulders, although portion of the highway are being improved to the south as development proceeds. Traffic count information (2006) provided by Caltrans indicates a daily volume of 4,900 ADT in the area south of the Bellevue Road intersection and 4,350 ADT north of the intersection.

Bellevue Road is an east-west arterial road that extends from the area of the Castle Industrial area north of Atwater across SR 59 to the Yosemite Lake Recreation Area. Today Bellevue Road is a two lane rural road.

The **SR 59 / Bellevue Road intersection** is controlled by stop signs on the Bellevue Road approaches. Each approach is a single lane, and there are no auxiliary turn lanes at this intersection.

G Street is a key north-south arterial street that connects northern Merced with the downtown area of the community. G Street also provides access to Merced Community College, which is located about two miles south of the project site. In the immediate area of the project G Street is a two lane rural road, but the facility is being widened as development occurs. South of Cardella Road G Street is a four lane facility in the area of Merced Community College.

The **Bellevue Road / G Street intersection** is controlled by an all-way stop. Each approach provides a single lane. Improvements to the intersection, including signalization, included in the Bellevue Ranch Master Development Plan.

Farmland Avenue is a local rural road that links G Street and Golf Road in the area east of the

project site. Farmland Avenue provides access the rural residential area developed in Merced County west of Yosemite Lake. Farmland Avenue is a two lane rural road with limited shoulders.

The **G Street / Farmland Avenue intersection** is a "tee" intersection controlled by a stop sign on the westbound Farmland Avenue approach. Single lane approaches are provided on each leg of the intersection.

Barclay Avenue is a planned collector street that is part of the Bellevue Ranch Master Development Plan. This two lane road will originate within the Crosswinds (Bellevue Ranch East) area and extend northerly across Bellevue Road to Farmland Avenue in the area between M Street and G Street. Ultimately Barclay Avenue will continue to Old Lake Road, but this analysis assumes that only the portion to Farmland Avenue will be available when the school opens.

The future **Bellevue Avenue / Barclay Avenue intersection** will provide all turning movements and will be signalized as part of the improvements included in the Bellevue Ranch Master Development Plan.

Golf Road is a local county road that links the Merced Golf Club with Bellevue Road. This two lane rural road extends northerly from Bellevue Road across Farmland Avenue to Old Lake Road. As the northern Merced area develops Gardner Avenue will be extend northerly to the Bellevue Road / Golf Road intersection.

The **Farmland Avenue / Golf Road intersection** is a "tee" intersection controlled by a stop sign on the eastbound Farmland Avenue approach. There is a single travel lane on each approach.

Cardella Road is a planned east-west arterial street located halfway between Bellevue Road and Yosemite Blvd. This four lane street will provide access to the developing urban areas south of the high school site.

The **Cardella Road / G Street intersection** is currently an unimproved rural intersection. The intersection will be improved as part of the Bellevue Ranch Master Plan, including signalization.

Yosemite Blvd is a major east-west arterial across northern Merced. Today Yosemite Blvd terminates as it approaches SR 59, but pending improvements will like the two roads and install a traffic signal on the state highway. Today Yosemite Blvd is a four lane facility in the study area.

The **G Street / Yosemite Blvd intersection** is controlled by an actuated traffic signal. Each intersection approach includes two through travel lanes and separate left turn lanes. Auxiliary right turn lanes are available on the G Street approaches.

R Street is a major north-south arterial street that lies midway between SR 59 and G Street. R Street is being extended northerly from Yosemite Blvd as development proceeds, but the road does not yet reach to Bellevue Road. R Street will eventually provide an alternative north-south route to G Street for traffic oriented to central Merced.

Alternative Transportation Modes

Transit Facilities. Two public transit providers are available in northern Merced County.

Merced County Transit provides both fixed route service and "roundabout" service that combines features of fixed route and dial a ride services. The fixed route service (The Bus) extends on G Street as far north as Merced Community College, and several routes travel along Yosemite Blvd and G Street in this area. However, no routes extend north to the project site.

The Bus – Merced County Transit provides door-to-door transit service in every city, town and community in Merced County. Dial-A-Ride service is primarily for use by our senior citizens age 60 and older and the handicapped, or those without a regularly scheduled fixed route bus operating within one (1) mile of their residence.

Pedestrian / Bicycle Facilities. Existing pedestrian and bicycle facilities are limited in the immediate area of the high school site. G Street south from Bellevue Road south and Yosemite Blvd are designated Class II facilities in the Merced Bicycle Master Plan. A Class I path extends north from Yosemite Blvd along Lake Road to Yosemite Lake. However, pedestrian and bicycle facilities are part of the improvements being installed under the Bellevue Ranch Master Plan.

Measure of Significance / Level of Service

Level of Service. The quality of traffic flow through intersections and on individual roadway segments is described in terms of operating Level of Service.

"Level of Service (LOS)" is a qualitative measure of traffic operating conditions whereby a letter grade "A" through "F", corresponding to progressively worsening operating conditions, is assigned to an intersection or roadway segment. Table 1 presents the characteristics associated with each LOS grade.

TABLE 1
LEVEL OF SERVICE DEFINITION

Level of Service	Signalized Intersection	Unsignalized Intersection	Roadway (Daily)
"A"	Uncongested operations, all queues clear in a single-signal cycle. Delay ≤ 10.0 sec	Little or no delay. Delay ≤ 10 sec/veh	Completely free flow.
"B"	Uncongested operations, all queues clear in a single cycle. Delay > 10.0 sec and ≤ 20.0 sec	Short traffic delays. Delay > 10 sec/veh and ≤ 15 sec/veh	Free flow, presence of other vehicles noticeable.
"C"	Light congestion, occasional backups on critical approaches. Delay > 20.0 sec and ≤ 35.0 sec	Average traffic delays. Delay > 15 sec/veh and ≤ 25 sec/veh	Ability to maneuver and select operating speed affected.
"D"	Significant congestions of critical approaches but intersection functional. Cars are required to wait through more than one cycle during short peaks. No long queues formed. Delay > 35.0 sec and ≤ 55.0 sec	Long traffic delays. Delay > 25 sec/veh and ≤ 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
"E"	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay > 55.0 sec and ≤ 80.0 sec	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and ≤ 50 sec/veh	At or near capacity, flow quite unstable.
"F"	Total breakdown, stop-and-go operation. Delay > 80.0 sec	Intersection blocked by external causes. Delay > 50 sec/veh	Forced flow, breakdown.

Sources: 2000 Highway Capacity Manual.

The *2000 Highway Capacity Manual* presents methodologies for calculating practical capacity and Level of Service on at intersections. At signalized intersections and intersections controlled by all-way stop signs, traffic conditions are described in terms of the average length of the delays experienced by all motorists. Intersection configuration, traffic volumes and traffic signal timing are all factors that enter into determination of the length of average delay and the resulting Level of Service.

The delays experienced at intersection controlled by side street stop signs are different. Motorists waiting to turn must yield the right of way to through traffic, and the length of delays can vary on each approach to the intersection. For this analysis the length of delays experienced by motorists on each approach has been calculated.

A traffic impact is considered significant if it renders an unacceptable Level of Service on a street segment or at a signalized intersection, or if it worsens already unacceptable conditions on a street segment or at a signalized intersection. Local jurisdictions and Caltrans adopt minimum Level of

Service standards for use in traffic studies and environmental impact reports. The City of Merced employs LOS D as the minimum standard. Caltrans strives to maintain LOS C on state highways.

Typically, LOS standards are applied to the overall flow of traffic occurring during the peak hour. Thus, it is recognized that some variation in traffic flow may occur during the peak hour. Thus, this analysis assumes that Caltrans and City minimum Level of Service standards are applicable measures of significance for traffic flow measured over the duration of the peak hour, but that maintaining minimum LOS during the peak minutes before the beginning of the school day is not an applicable goal.

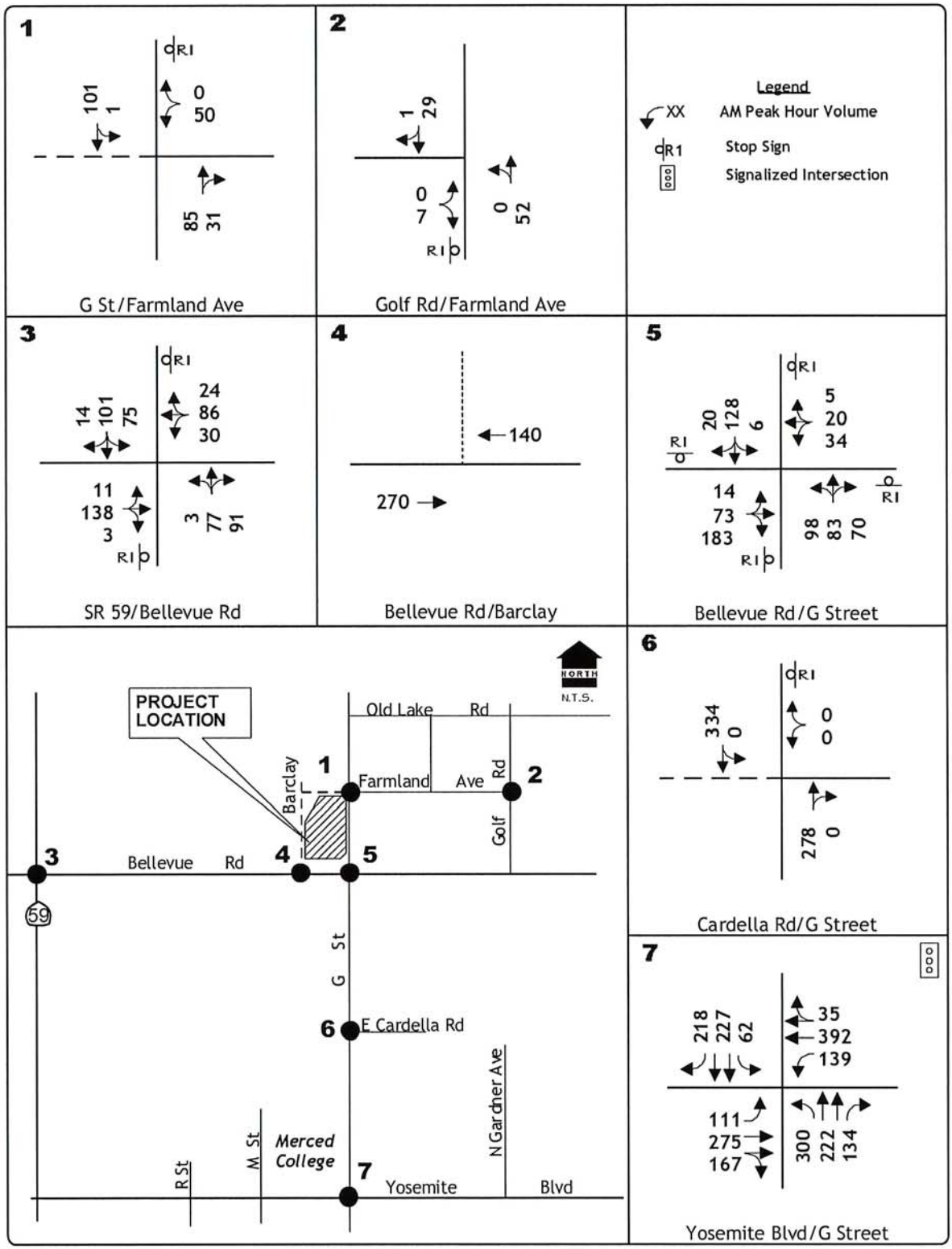
Existing Levels of Service. To determine existing traffic volumes and obtain more information about traffic conditions in the study area, a.m. peak hour traffic counts were taken at the existing study intersections during February 2006. These counts were made on a weekday when area schools were in session. These peak hour volumes are shown on Figure 3. Existing intersection Levels of Service are shown on Table 2.

As shown, current Levels of Service vary at study intersection. The low volume intersections near the site operate at LOS C or better. The signalized G Street / Yosemite Blvd intersection also operates at LOS C however, short periods of congestion typically accompany the peak periods immediately before and after classes at Merced Community College.

TABLE 2
EXISTING INTERSECTION LEVELS OF SERVICE

Intersection	Control	AM Peak Hour	
		Average Delay (Seconds)	LOS
G Street / Farmland Avenue			
Southbound left turn	WB Stop	7.5 sec	A
Westbound left+right turn		11.4 sec	B
Golf Road / Farmland Avenue			
Northbound left turn	EB Stop	-	-
Eastbound left+right turn		8.5 sec	A
SR 59 / Bellevue Road	EB / SB Stop		
NB left turn		7.5 sec	A
SB left turn		7.8 sec	A
EB left+thru+right turn		17.6 sec	C
WB left+thru+right turn		16.3 sec	C
Bellevue Road / G Street	All-Way Stop		
(overall)		(10.5 sec)	(B)
NB approach		11.0 sec	B
SB approach		9.8 sec	A
EB approach		10.8 sec	B
WB approach		9.1 sec	A
G Street / Yosemite Blvd	Signal	29.3 sec	C

Regional Circulation Issues. Beyond the immediate vicinity of the proposed project there are known capacity deficiencies that are being addressed as development proceeds. The current two lane section of SR 59 near the Olive Avenue intersection is a constraint, and as the north Merced area develops the highway will need to be widened to four lanes north through the Bellevue Road intersection. The mechanism anticipated for funding these improvements combines fronting developer responsibilities, STP funds, but City of Merced development impact fee do not directly go to improvements on the state highway. The SR 59 Widening Project – 16th Street North to Olive Avenue, will widen the highway to 4 lanes and improve the major intersections on either end of the project area. According to the MCAG website, this $30 million project is now scheduled for completion in the year 2013 but is currently on hold due to lack of funding. North of that project, improvements to SR 59 are being installed as local development proceeds. Traffic signals have recently been installed at the SR 59 / Yosemite Avenue intersection.



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Transportation Engineers
5600-44 REV 8 07.VSD 8/8/2007

EXISTING TRAFFIC VOLUMES
AND LANE CONFIGURATIONS

figure 3

YEAR 2009 BACKGROUND CONDITIONS

Because current traffic conditions in the study area are likely to change during the period until the project is developed, it is appropriate to evaluate project impacts within the context of background conditions occurring when the school opens. Currently the north Merced area is seeing significant growth, and the City of Merced Planning Department has provided input to this study with regard to the nature and location of background development that can be expected over the next three years.

Development Assumptions

Pending Development. The most noteworthy ongoing development in the area of the School site is Bellevue Ranch. The approved Master Plan addresses the area west of G Street between Cardella Road and Bellevue Road and from Bellevue Road north to Old Lake Road. Other development is also occurring east of G Street.

As part of their program to monitor ongoing development, City staff has forecast the number of residences that could reasonably be assumed to be occupied in the area of the school for the years 2010, 2020 and 2030. Assumptions relating to the year 2010 are presented in Table 3. As shown, City staff envisions occupancy of nearly 5,400 residences in this area by the year 2010.

TABLE 3
YEAR 2010 DEVELOPMENT ASSUMPTIONS

Area	North – South boundaries	East-West Boundaries	New Residences by 2010	
			Single Family	Multiple Family
1	Bellevue to Old Lake Rd	SR 59 to D Street	0	0
2	Bellevue to Old Lake Rd	R Street to G Street	177	32
3	Bellevue Road to Old Lake Road	G Street to Gardner Avenue	0	0
4	Cardella Ave to Bellevue Road	SR 59 to R Street	165	77
5	Cardella Ave to Bellevue Road	R Street to G Street	820	240
6	Cardella Avenue to Bellevue Road	G Street to Gardner Ave	145	96
7	Yosemite Blvd to Cardella Ave	SR 59 to R Street	945	772
8	Yosemite Blvd to Cardella Ave	SR Street to M Street	160	0
9	Yosemite Blvd to Cardella Ave	M Street to G Street	296	0
10	Yosemite Blvd to Cardella Ave	G Street to Gardner Ave	1,036	432
Total	Yosemite Blvd to Old Lake Road	SR 59 to Gardner Ave	3,744	1,649

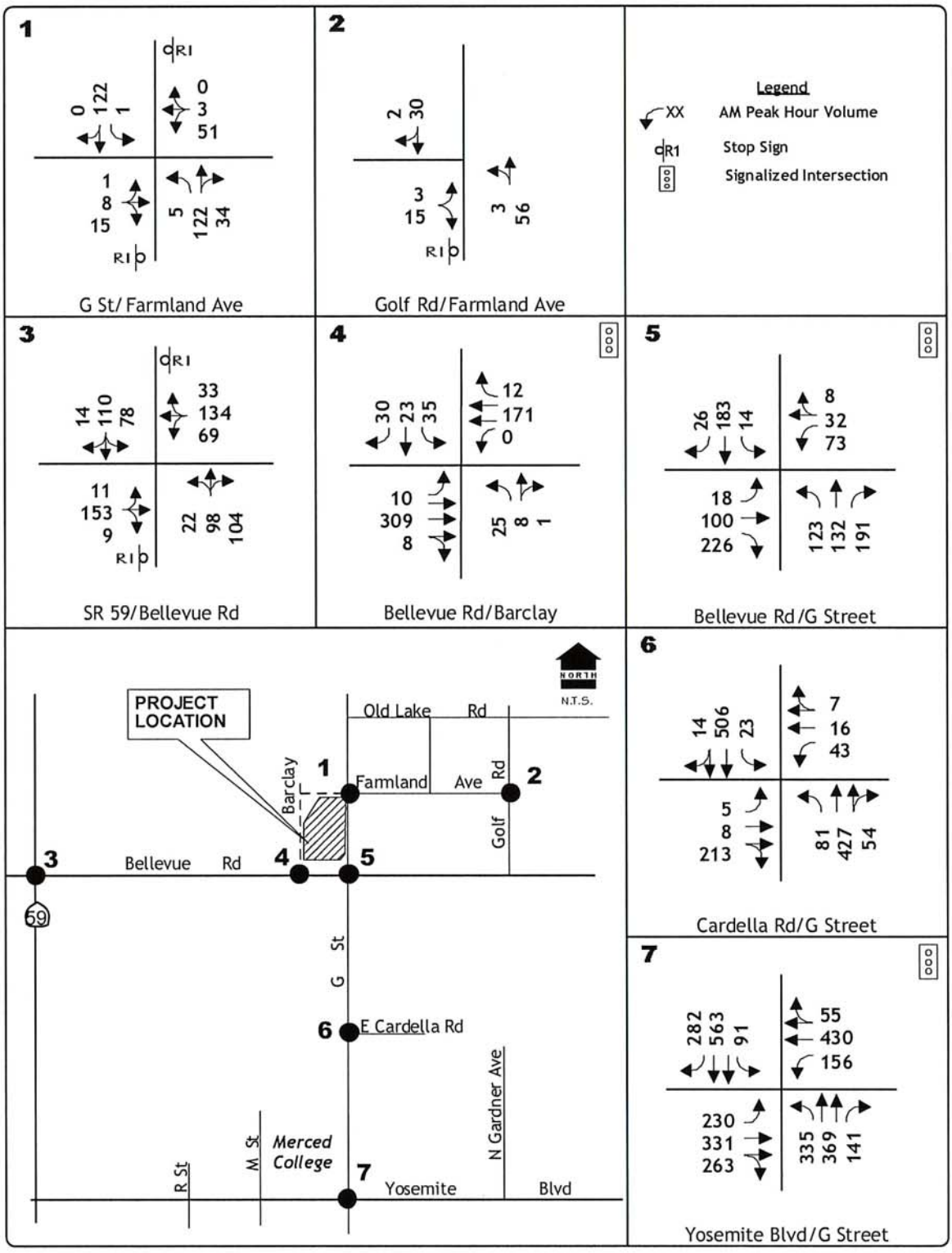
Circulation System Improvements. Because each phase on the Bellevue Ranch project is conditioned to install specific roadway improvements, it is possible to project the extent of roadway improvements that are likely to be installed by the time the school opens.

TABLE 4
ASSUMED ROADWAY IMPROVMENTS

Road	From	To	Improvement
Yosemite Blvd	SR 59	G Street	Opened
G Street	Bellevue Road	Yosemite Blvd	4 lanes
Bellevue Road	Barclay Ave	G Street	2-4 lanes
G Street	Bellevue Road	Residential frontage	West ½ section
G Street	Bellevue Road		Traffic signal
	Cardella Road		Traffic signal
Bellevue Road	Barclay Drive		Traffic signal
R Street	Yosemite Blvd	Cardella Ave	New street
Cardella Avenue	R Street	G Street	New street
Barclay Drive	Bellevue	Farmland Avenue	New street – No Fahrens Creek Bridge
Farmland Avenue	Barclay Drive	G Street	New street – No Fahrens Creek bridge

Background Year 2009 Traffic Conditions

Figure 4 presents year 2009 background traffic volume projections assuming that the planned high school is not developed, but identified development proceeds and planned roadway improvements are in place. These forecasts were developed by superimposing the trips generated by assumed development on to background volumes. Resulting operating Levels of Service were calculated based on the assumed intersection improvements that are presented. As shown, all study locations will operate at the City's minimum LOS D or better.



YEAR 2009 NO PROJECT
TRAFFIC VOLUMES
AND LANE CONFIGURATIONS

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figure 4

TABLE 5
OPENING DAY NO PROJECT INTERSECTION LEVELS OF SERVICE

Intersection	Control	Existing		Opening Day No Project	
		Average Delay (Seconds)	LOS	Average Delay (seconds)	LOS
G Street / Farmland Avenue					
Northbound left turn	EB/WB Stop	-	-	7.5 sec	A
Southbound left turn		7.5 sec	A	7.6 sec	A
Eastbound left+through+right turn		-	-	9.9 sec	A
Westbound left+through+right turn		11.4 sec	B	11.5 sec	B
Golf Road / Farmland Avenue					
Northbound left turn	EB Stop	-	-	7.3 sec	A
Eastbound left+right turn		8.5 sec	A	8.6 sec	A
SR 59 / Bellevue Road	EB / WB Stop				
NB left turn		7.5 sec	A	7.5 sec	A
SB left turn		7.8 sec	A	7.9 sec	A
EB left+thru+right turn		17.6 sec	C	22.8 sec	C
WB left+thru+right turn		16.3 sec	C	34.7 sec	D
Bellevue Road / Barclay Road	Signal	-	-	12.9 sec	B
Bellevue Road / G Street	All-Way Stop				
(overall)		(10.5 sec)	(B)		
NB approach		11.0 sec	B		
SB approach		9.8 sec	A		
EB approach		10.8 sec	B		
WB approach		9.1 sec	A		
	Signal			23.3 sec	C
G Street / Cardella Road	Signal			21.0 sec	C
G Street / Yosemite Blvd	Signal	29.3 sec	C	49.9 sec	D

PROJECT IMPACTS

To evaluate the impacts of the proposed high school on traffic conditions in the project area at the time the school opens it is necessary to identify the volume of traffic accompanying the project and to superimpose this traffic onto the projected background condition.

Project Characteristics

Trip Generation. The *Institute of Transportation Engineers (ITE)* published trip generation rates for a variety of land uses based on observations made nationally. The trip generation rates presented in Table 6 were reviewed and compared to data collected from observation of other similar suburban California high schools. The consultant reviewed data available for Johansen High School in Modesto, where a single access route is available and a clear indication of the volume of high school traffic could be made. This high school would have demographic characteristics that are similar to the new Bellevue High School and is also located at the edge of the community. These observations were judged to provide the best estimate of project traffic, and the estimates presented in Table 7 were determined to be applicable for this use.

As shown in Table 7, at the 2,400 student enrollment level the new Bellevue Road High School is expected to generate 5,040 daily automobile trips per day with 1,800 trips occurring during the highest volume hour of school traffic (i.e., a.m. peak hour).

As noted in Table 7, the school will generate traffic during the afternoon period when the school day ends and in the p.m. peak hour of background traffic. However, as the background traffic volume occurring during the afternoon is less than in the a.m. peak hour, and the project's p.m. peak hour volume is significantly lower that the a.m. volume, the a.m. peak hour condition has been assumed to be the "worst case" condition for this project.

TABLE 6
TRIP GENERATION RATES

Land Use (ITE Code)	Daily Rate (per student)	Hourly Rates (per student)		
		A.M.	Afternoon	P.M.
High School (530)	1.79	0.46	0.30	0.15
Observed at Johansen High School in Modesto	2.10	0.75	0.50	0.05

TABLE 7
TRIP GENERATION ESTIMATES

Condition	Students	Daily	AM Peak Hour			Afternoon	PM Peak Hour
			In	Out	Total		
Probable occupancy	2,000	4,200	900	600	1,500	1,000	300
Ultimate Capacity	2,400	5,040	1,080	720	1,800	1,200	360

Trip Distribution Assumptions. The next task in the evaluation is to determine the distribution of project trips. The regional distribution of trips generated by the High School will be dependent on such factors as school attendance boundaries, district bussing policies and opportunities for walking and bicycle use.

School district personnel have identified the general geographical limits of the attendance boundaries for the new High School, as noted in Figure 5. The northern portion of the preliminary service area is roughly bounded by Old Lake Road on the north, SR 59 on the west, and Gardner Avenue on the east. However, south of Cardella Avenue the plan excludes the area east of R Street.

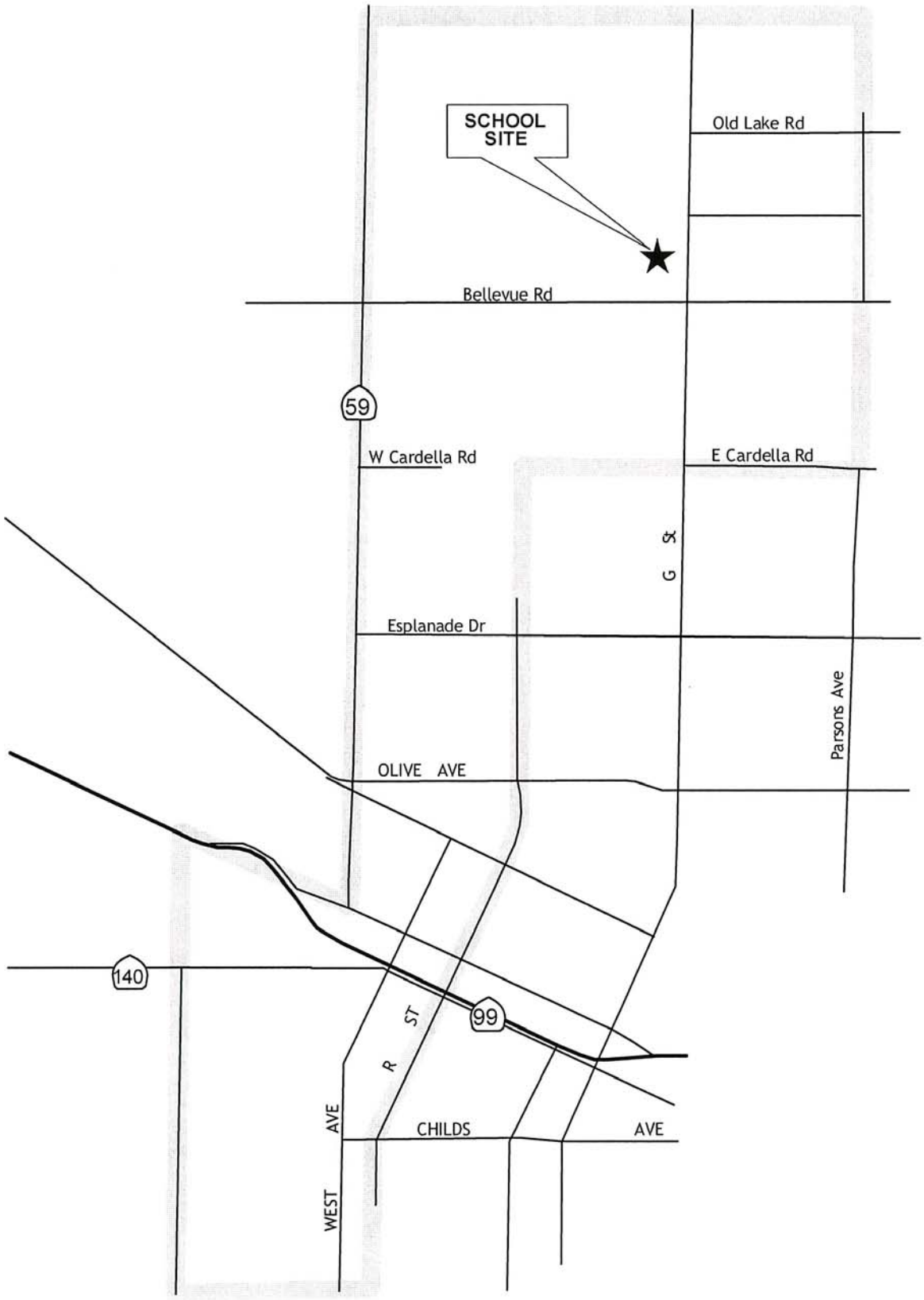
To determine the distribution of inbound school traffic, data available from the City of Merced was used to determine the number of residences that are expected within each area (existing and occupied by 2010) was summarized and used to estimate the number of high school students residing in each area. General student yield rates (i.e., students per residence) were employed, and this data yielded the percentile distribution of students indicated in Table 8. As noted, at this "per house yield" under opening day conditions a theoretical enrollment of 2,400 students would require importing a limited number of students from outside of the immediate area of the school. However, by the time the area is built out in 2030, the distribution of school trips would be spread to residences in all four directions from the school.

Based on these limits and the probable population densities in each area, the trip distribution presented in Table 8 is expected.

TABLE 8
REGIONAL STUDENT DISTRIBUTION

Direction	Percentage of Students	
	2009	2030
North of Bellevue Road and West of G Street	5%	26%
North of Bellevue Road and east of G Street	2%	11%
Between Bellevue Road and Cardella Avenue and west of R street	5%	15%
Between Bellevue Road and Cardella Avenue and between R Street and G Street	22%	15%
Between Bellevue Road and Cardella Avenue and between G Street and Gardner Avenue	11%	17%
Between Cardella Avenue and Yosemite Blvd between SR 59 and R Street	35%	16%
South of Yosemite Blvd	18%	0%

Because many parents drop students off at school as part of commute trip, the arrival and distribution patterns for school traffic will differ. This analysis assumes that in the morning ½ of the exiting traffic will return home following the distribution assumptions made for inbound traffic. However, the other ½ will continue to regional employment centers located in downtown Merced or along the SR 99 corridor.



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SCHOOL ATTENDANCE AREA BOUNDARY

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figure 5

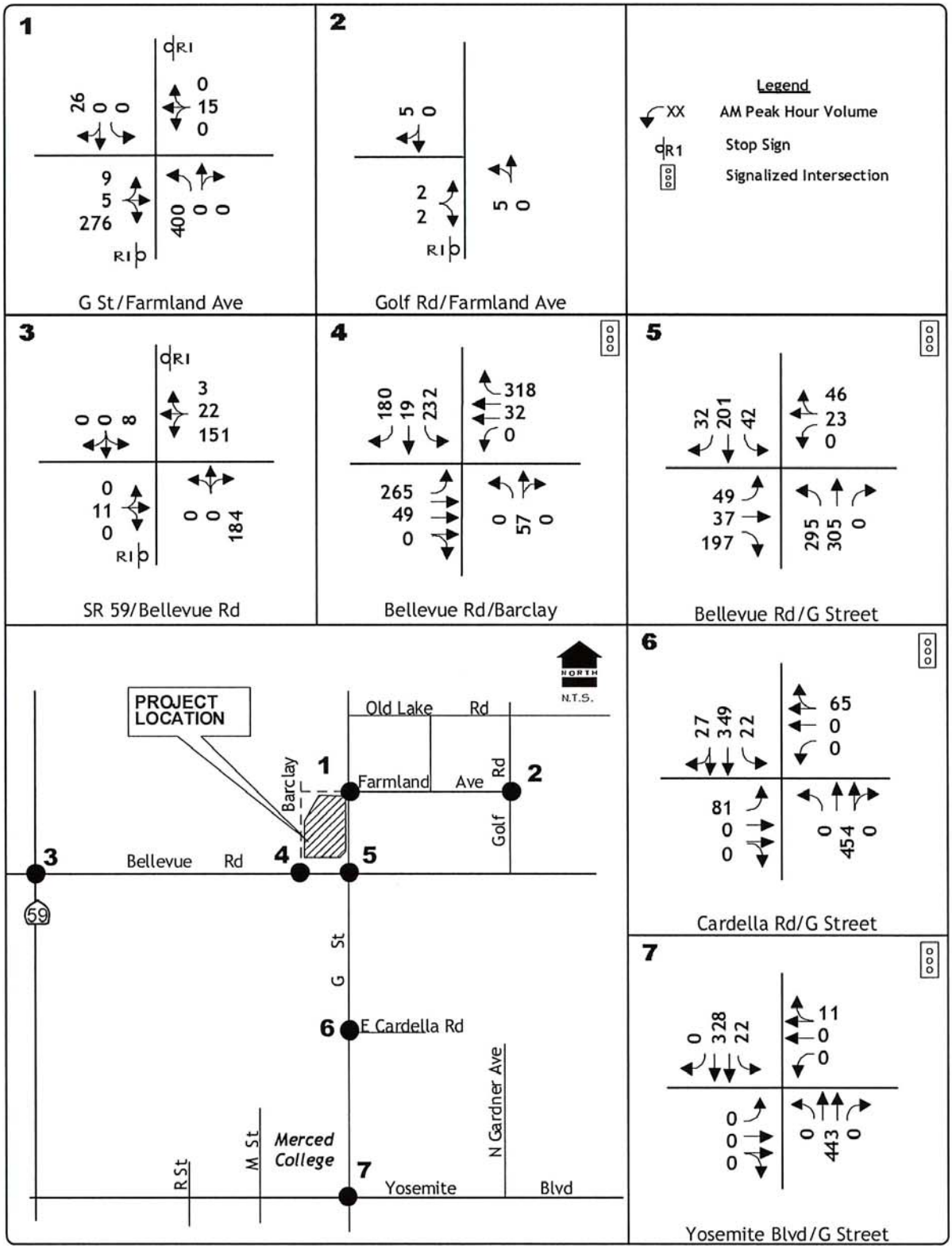
Trip Assignment. Trips generated by the project were assigned to the study area street system based on the location of assumed access and the relative least time path along probable routes from the school to area residences and employment.

The "project only" trip assignment for opening day conditions (year 2009) is presented in Figure 6.

It is important to note that this study assumes all of the school traffic is new to the study area. This is true for streets in those areas where development has not yet occurred. In reality, most of the school traffic originating in the existing residential areas south of the site travel to Golden Valley High School in southern Merced. Thus, the impacts of the new school on locations such as the G Street / Yosemite Avenue intersection could be overstated.

Opening Day Year 2009 Levels of Service

Levels of Service under year 2009 conditions with and without the proposed High School project are presented in Table 9 and are further described in the following text. Figure 7 presents "Year 2009 Plus Project" traffic volumes.



YEAR 2009 OPENING DAY PROJECT ONLY
TRAFFIC VOLUMES
AND LANE CONFIGURATIONS

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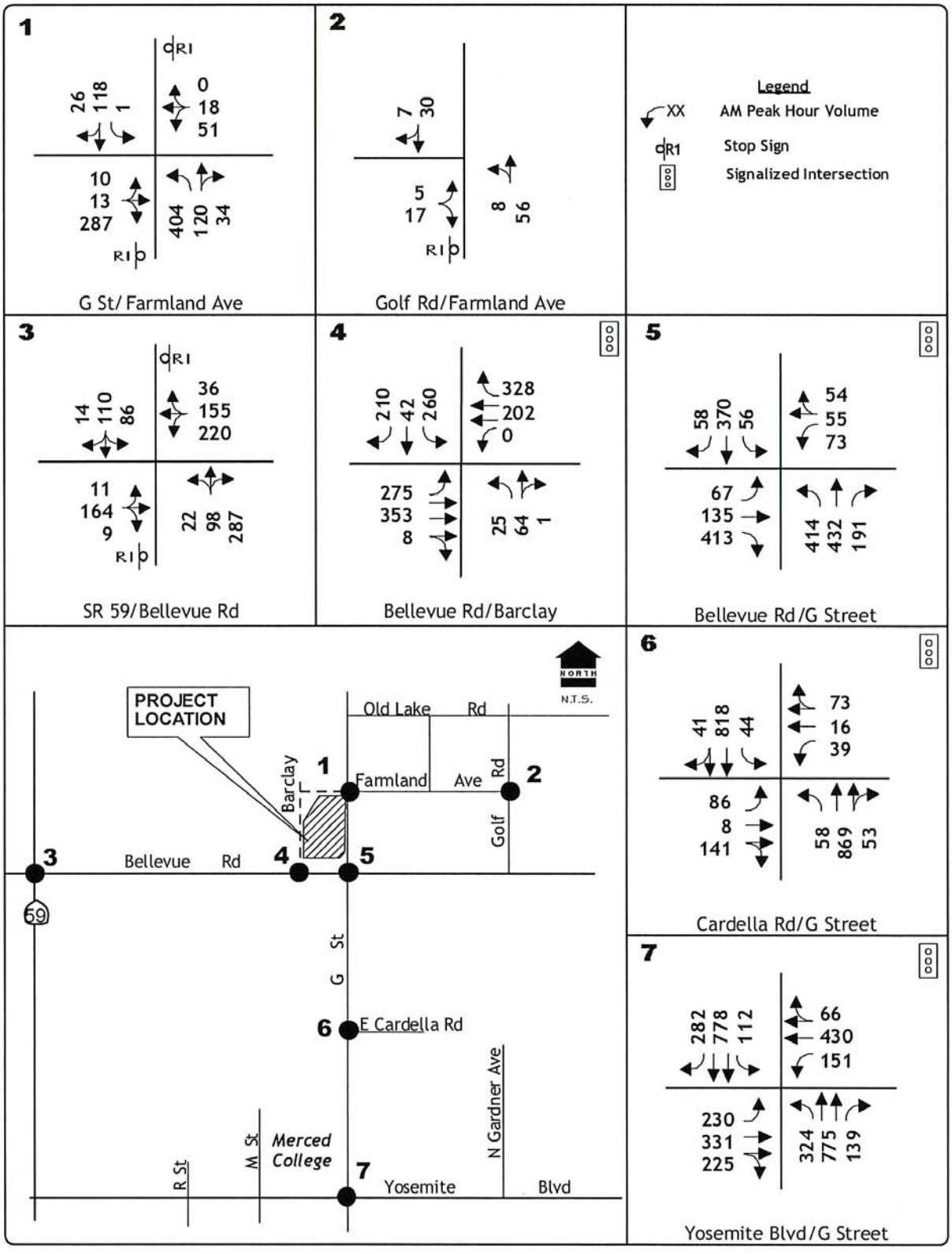
figure 6



YEAR 2009 PLUS PROJECT
TRAFFIC VOLUMES
AND LANE CONFIGURATIONS

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figure 7

TABLE 9
YEAR 2009 PEAK HOUR INTERSECTION
LEVELS OF SERVICE WITH 2,400 STUDENT HIGH SCHOOL

Intersection	Control	Opening Day No Project		Opening Day Plus Project	
		Average Delay (Seconds)	LOS	Average Delay (seconds)	LOS
G Street / Farmland Avenue					
Northbound left turn	EB/WB Stop	7.5 sec	A	8.7 sec	A
Southbound left turn		7.6 sec	A	7.6 sec	A
Eastbound left+through+right turn		9.9 sec	A	18.1 sec	C
Westbound left+through+right turn		11.5 sec	B	260.7 sec	F
Golf Road / Farmland Avenue					
Northbound left turn	EB Stop	7.3 sec	A	7.3 sec	A
Eastbound left+right turn		8.6 sec	A	8.7 sec	A
SR 59 / Bellevue Road	EB / WB Stop				
NB left turn		7.5 sec	A	7.5 sec	A
SB left turn		7.9 sec	A	8.5 sec	A
EB left+thru+right turn		22.8 sec	C	44.2 sec	E
WB left+thru+right turn		34.7 sec	D	577.1 sec	F
Bellevue Road / Barclay Road	Signal	12.6 sec	B	19.8 sec	B
Bellevue Road / G Street	Signal	23.2 sec	C	44.9 sec	D
G Street / Cardella Road	Signal	21.0 sec	C	16.6 sec	B
G Street / Yosemite Blvd	Signal	49.9 sec	D	60.2 sec	E

As indicated in Table 9, satisfactory traffic conditions are projected at most of the study intersections if the assumed improvements are made, but there are three locations where Levels of Service in excess of the City of Merced's LOS D minimum are projected.

1. At the School's access opposite the **G Street / Farmland Avenue intersection**, motorists waiting to turn left onto G Street will experience very long delays that are indicative of LOS F conditions. This Level of Service exceeds the City's minimum standard and is a significant impact. However, because most of the traffic exiting the school will be turning right, the overall Level of Service on the eastbound approach is within the LOS D standard.

The intersection will need to be signalized. At a minimum the signal should provide the following geometry:

NB Separate left turn lane and a combined through+right turn lane
SB Separate left, through and right turn lanes
EB Combined left+through lane and separate right turn lane
EB Combined left+through+right turn lane

This level of improvement would provide LOS B over the breadth of the peak hour.

Improvements to intersection would be funded through several sources. The District shall widen the west side of G Street as part of the proposed project and will be constructing the eastbound Farmland Avenue approach. Creation of left turn lanes on G Street would accompany this work. While the District should install the traffic signal as part of the proposed project, the City of Merced typically shares the cost of signalization to the property owners on each corner (50% of total). Thus, the District would be responsible for 12.5% of the cost of the traffic signal itself.

Development of the new High School will add traffic to SR 59. Motorists waiting to turn onto SR 59 at the **SR 59 / Bellevue Road intersection** will experience very long delays that are indicative of LOS F. This exceeds the City's minimum LOS D standard. While widening the intersection to provide a separate northbound right turn lane would reduce the length of delays somewhat, installation of a traffic signal would be required to meet the City's LOS D minimum.

However, at other times during the day this intersection is unlikely to carry the traffic volumes needed to satisfy Caltrans 8-hr warrant requirements. Thus, the District shall contribute its fair share to the cost of this traffic signal. On opening day High School traffic represents 31% of the traffic through this intersection, with the percentage dropping to 6% under a.m. peak hour year 2025 conditions.

Development of the High School will add traffic to the two lane portions of SR 59 that are planned for widening but currently lack funds to do so. Caltrans comments on the DEIR NOP suggest that the High School may have incremental impacts on SR 59 and the intersections north of he SR 59 widening project(i.e., at the SR 59 / Buena Vista Avenue, SR 59 / Yosemite Blvd, and SR 59 / Bellevue Road intersections). While it is not possible to identify an exact "fair share" percentage at locations outside of the study area, the high school should contribute to the cost of improvements at these locations.

Finally, the **G Street / Yosemite Avenue intersection** is projected to operate at LOS E with development of the proposed high school. This exceeds the City's LOS D minimum. Development of additional lanes on G Street, as is eventually expected under the City's long range plan would be needed to deliver LOS D conditions.

Peak Period Conditions Before School Day Begins

Because much of the traffic associated with high schools is concentrated into a few minutes at the beginning and ending of the school day, short periods of congestion and delays are typical at most schools. While not necessarily an impact under the City's minimum hourly Level of Service standards, these periods of delay are often noticeable to the public and can represent a safety problem if the duration of "at capacity" operation is excessive.

While it is not necessary to evaluate peak period conditions at study intersections that are not proximate to the site, it is appropriate to ensure that the site's access intersections have the capacity to accommodate peak flows. Traffic conditions that fall within a range between LOS E and LOS F are an applicable goal for peak period operations.

Bellevue Road / Barclay Avenue intersection. To provide "near capacity" conditions during the peak minutes before school, the following improvements are recommended at the Bellevue Road / Barclay Avenue intersection:

1. Create a "overlap" westbound right turn lane phase onto northbound Barclay Avenue from westbound Bellevue Road, and

2. Provide a three lane southbound approach on Barclay Avenue, and configure this approach with a separate left turn, a combination left + through lane and a separate right turn lane;

Because these improvements are relatively minor, they could be incorporated into the traffic signal plans being prepared for the adjacent property owner or, the City of Merced could monitor traffic conditions and make these minor changes as the need arises.

G Street / Farmland Avenue. To provide "below capacity" conditions at the G Street / Farmland Avenue intersection the following improvements would be needed:

1. Add an eastbound to southbound "overlap phase" on the EB Farmland Avenue approach. This feature should be incorporated into the design of the traffic signal

G Street / Bellevue Road. Because of the proximity of the G Street / Bellevue Road intersection, it is also important to consider the peak period operations at this location. With the assumed improvements the intersection would operate "over capacity" during the peak minutes before the school day begins. To provide better operations it would be necessary to implement many of the ultimate intersection improvements that are planned by the City under the Bellevue ranch Master Plan but are not expected to be implemented by the time the school opens. These include:

1. Complete the second northbound and second southbound lanes on G Street;
2. Complete the second northbound left turn lane on G Street

These regional improvements are being installed as Bellevue Ranch area development proceeds. The District should make a fair share contribution to regional improvements by paying a fee to the City of Merced equivalent to the funds provided by site development under prior residential uses.

Impacts to Alternative Transportation Modes

Development of a school at this site will result in the need to bus students in a manner that is consistent with District policies. The district anticipates that 25% to 35% of the students will be bussed when the school opens. An on-site bus loading area has been incorporated into the site design.

Pedestrians / Bicycles

Development of a school in the project location will result in some students who may wish to walk or ride bicycles to the campus. The school site is north of planned residential development that is currently being developed as part of the Bellevue Ranch Master Plan. Sidewalks that are part of standard frontage improvements associated with that project will provide pedestrian access to the south, and pedestrian access will be available via the signalized intersections on Bellevue Road. To the east of the project there may be a few students living along Farmland Avenue who might choose to walk or ride bicycles to school. Dedicated facilities for pedestrians are lacking in this area, a potential safety impact may result. Development of a pedestrian path or provisions for ensuring that these students can be bussed would be needed to mitigate this impact.

Parking

The number of parking spaces needed to accommodate the regular use of the campus can be estimated based on the demands of students, staff and visitors. The current site plan designates 578 on-site parking spaces. Observation of other campuses where the number of student vehicles can be determined reveals that student parking is typically in the range of 1 student vehicle per 5 to 6 overall students. Lower ratios occur at new schools in well to do neighborhoods with limited bussing, while higher ratios occur at older schools with a high degree of bussing. These ratios suggest that 400 to 480 student vehicles could be parked on site if the student population reaches 2,400. This demand would imply that 100 to 180 parking spaces would remain for staff and visitors. Thus, the proposed plan has adequate parking for the regular operation of the school.

Impacts of Extracurricular Activities

Operation of the proposed football stadium represents the most significant extracurricular activity at the because of the amount of traffic associated with this use and the amount of automobile parking occurring during football games.

Large traffic volumes also occur after football games, although because of the lesser background traffic volumes in the late evening, Level of Service standards are typically not exceed on an hourly basis. While not all spectators can be expected to leave immediately, upwards of 800 vehicles would be leaving an “at capacity” event, such as a play-off game of an event between inter-city rivals.

A single traffic lane has the capacity to carry about 1,375 vehicles per hour of uninterrupted flow, assuming traffic controls by uniformed officers during large events. If the school is developed with access to both G Street and Bellevue Road as proposed, then both streets will be available to provide access to the south from the stadium. Assuming equal use of each route, about 20 to 30 minutes of “at-capacity” conditions would be required to clear the stadium site. Under these conditions, uniformed traffic control officers may be needed to efficiently and safely move automobiles to and from the site.

Parking demands associated with the stadium could also be appreciable. Assuming an average automobile occupancy of 3.0 persons per automobile for a 4,000 person crowd with some bussing and drop-off activity, about 1,330 vehicles would be expected to be parked at or near the site for an

event that filled the stadium.

The preliminary site plan suggests that approximately 578 parking spaces will exist on site. This is approximately 44% of the parking demand for the stadium at capacity, with a deficiency of approximately 750 spaces. Alternatively, the 580 regular parking spaces would be adequate for normal events with attendance in the range of 1,600 to 1,800 persons. Additional on-site parking could be developed for "at capacity" events using the school's hard court areas that are located near the stadium. However, even using these areas it is likely that motorists will elect to use on-street parking in the neighborhoods that will be developed near the campus.

Because use of on-street parking could result in automobile – pedestrian safety problems, a program may be needed to identify acceptable "overflow" parking locations and enforce "no parking" regulations in areas where parking should be prohibited. During large events it may also be necessary to use uniformed officers to handle pedestrian activity between the stadium and off-site parking. Bussing to satellite parking areas may be needed. However, the extent to which these measures are needed cannot be determined and a formal plan for addressing "at-capacity" events created until the surrounding area is developed and the school is in operation.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Analysis of Cumulative Scenarios

While the preceding analysis assumed implementation of several known development proposals, long term traffic conditions in this area may be influenced by the completion of many projects that are approved as well as development that is currently being considered but are not yet adopted.

Methodology. When this traffic analysis was being prepared in 2006, City and MCAG staff reviewed the land use assumptions inherent to the MCAG regional travel demand forecasting model and updated the land use base to reflect known development. New year 2030 travel demand forecasts were provided to the consultant. These forecasts assume that the subject site is developed with residential units (300 dwellings).

To create forecasts with and without development of the proposed high school the traffic model's daily traffic volume results were reviewed on an intersection turning movement basis. Adjustments were made to account for the actual layout of approved projects in the area of the campus and the resulting daily traffic volumes were factored to represent typical a.m. peak hour conditions (i.e., 8% of daily traffic and a 55%/45% inbound outbound split. The resulting volumes, shown in Figure 8, are the "2030 No Project" condition.

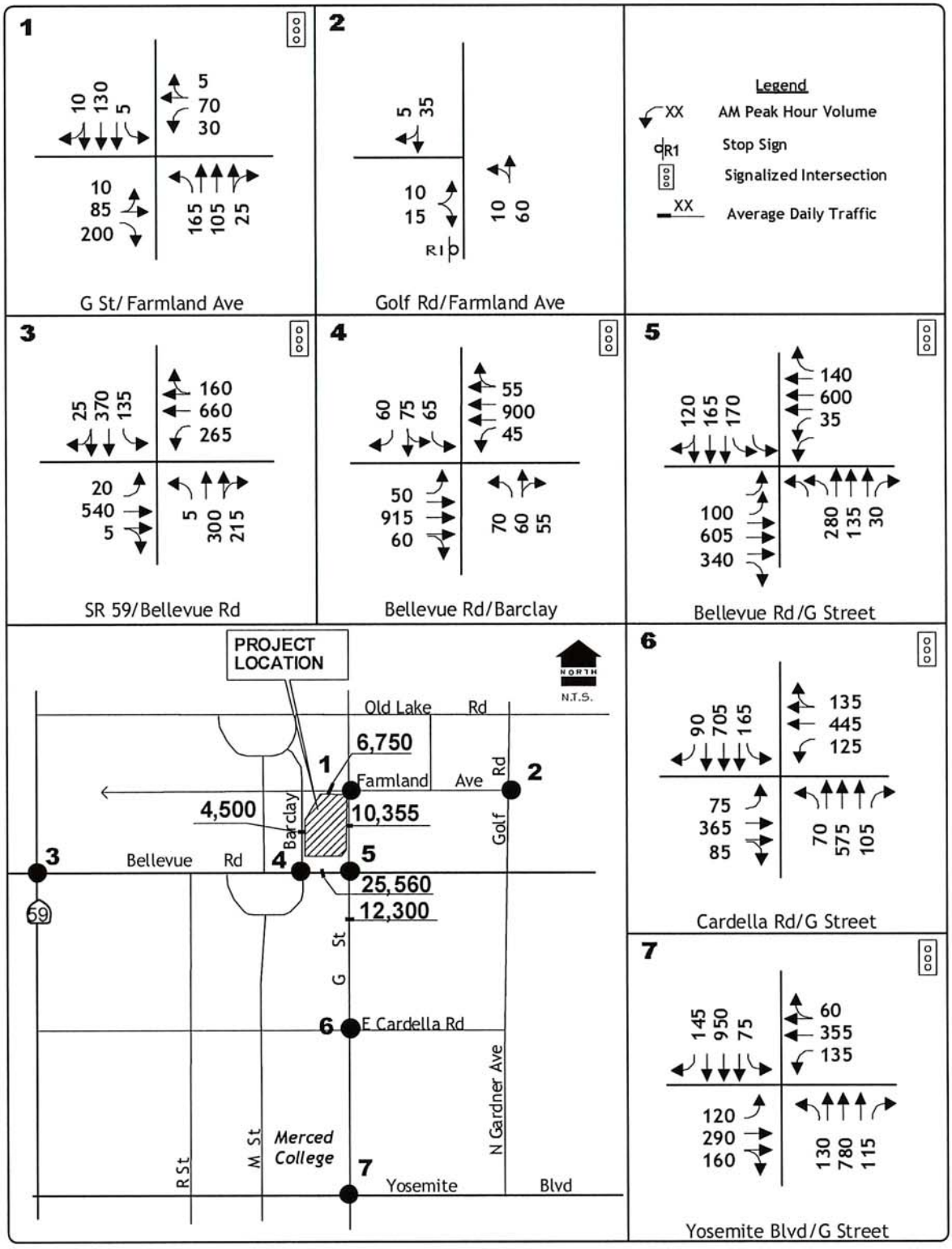
A two step process was employed to create the "plus project" volumes. First, the traffic generated by residential uses on the school site was manually deleted form the forecast. Second, the trips generated by the high school ere added based on the long term distribution pattern contained in Figure 9. Resulting "Year 2030 Plus Project" volumes are shown in Figure 10.

Planned Improvements. Additional improvements to the study area circulation system are anticipated by the year 2030. Theses include:

1. Completion of the Campus Parkway and the Atwater – Merced Parkway linking the Bellevue Road corridor with SR 99.
2. Reconstruction of G Street as a 6 lane facility from Yosemite Avenue to Bellevue Road and as a 6 lane facility north of Bellevue Road;
3. Completion of Bellevue Road a 6 lane arterial with dual left turn lanes at major intersections
4. Construction of the local street system inherent to the northern Bellevue Ranch area, including signalization of the G Street / Farmland Avenue intersection and signalization of the SR 59 / Bellevue Road intersection.

Year 2025 Levels of Service

Peak hour Levels of Service were calculated for with and without project conditions, as shown in Table 10.



YEAR 2030 NO PROJECT
TRAFFIC VOLUMES
AND LANE CONFIGURATIONS

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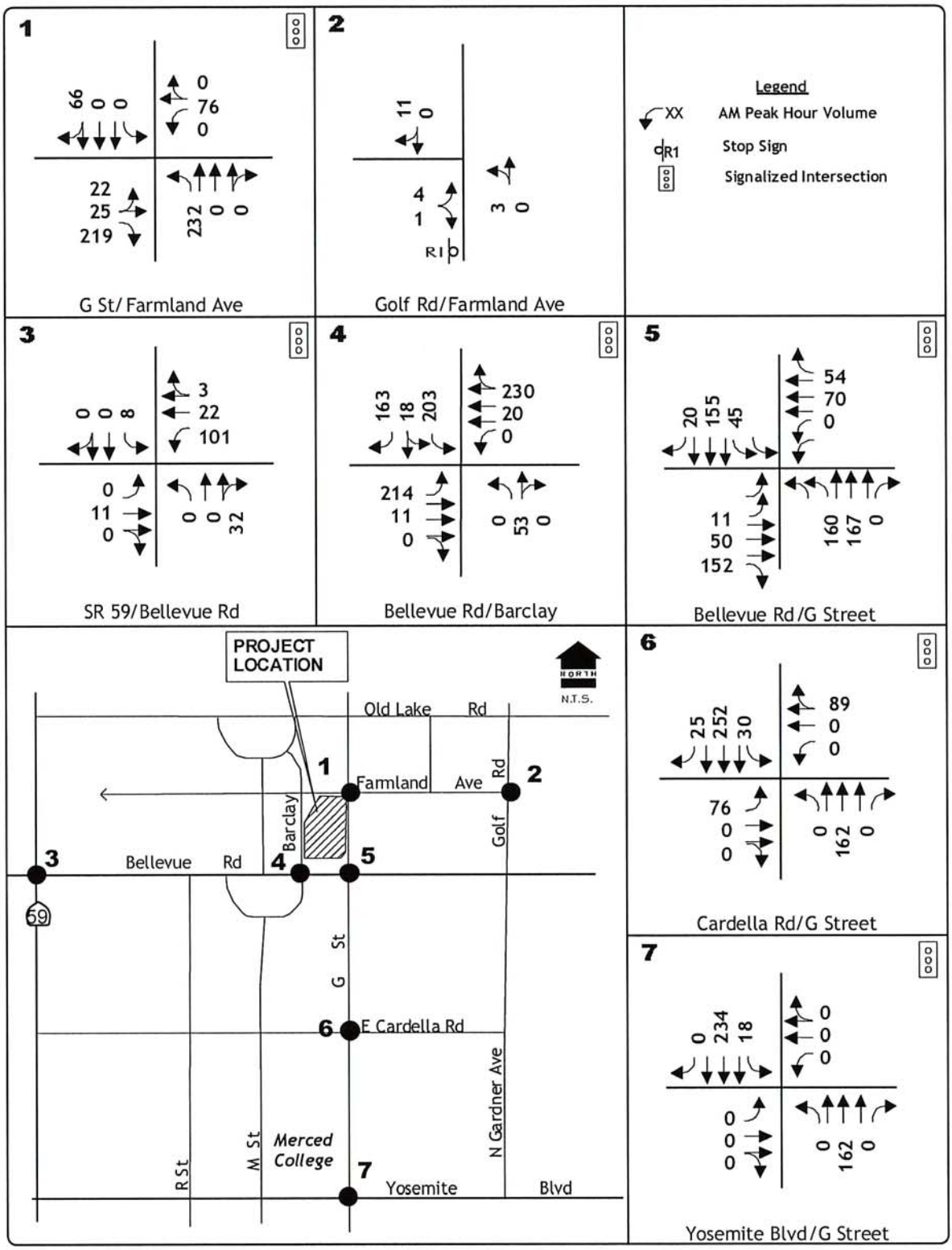
figure 8



YEAR 2030 PROJECT ONLY
TRAFFIC VOLUMES
AND LANE CONFIGURATIONS

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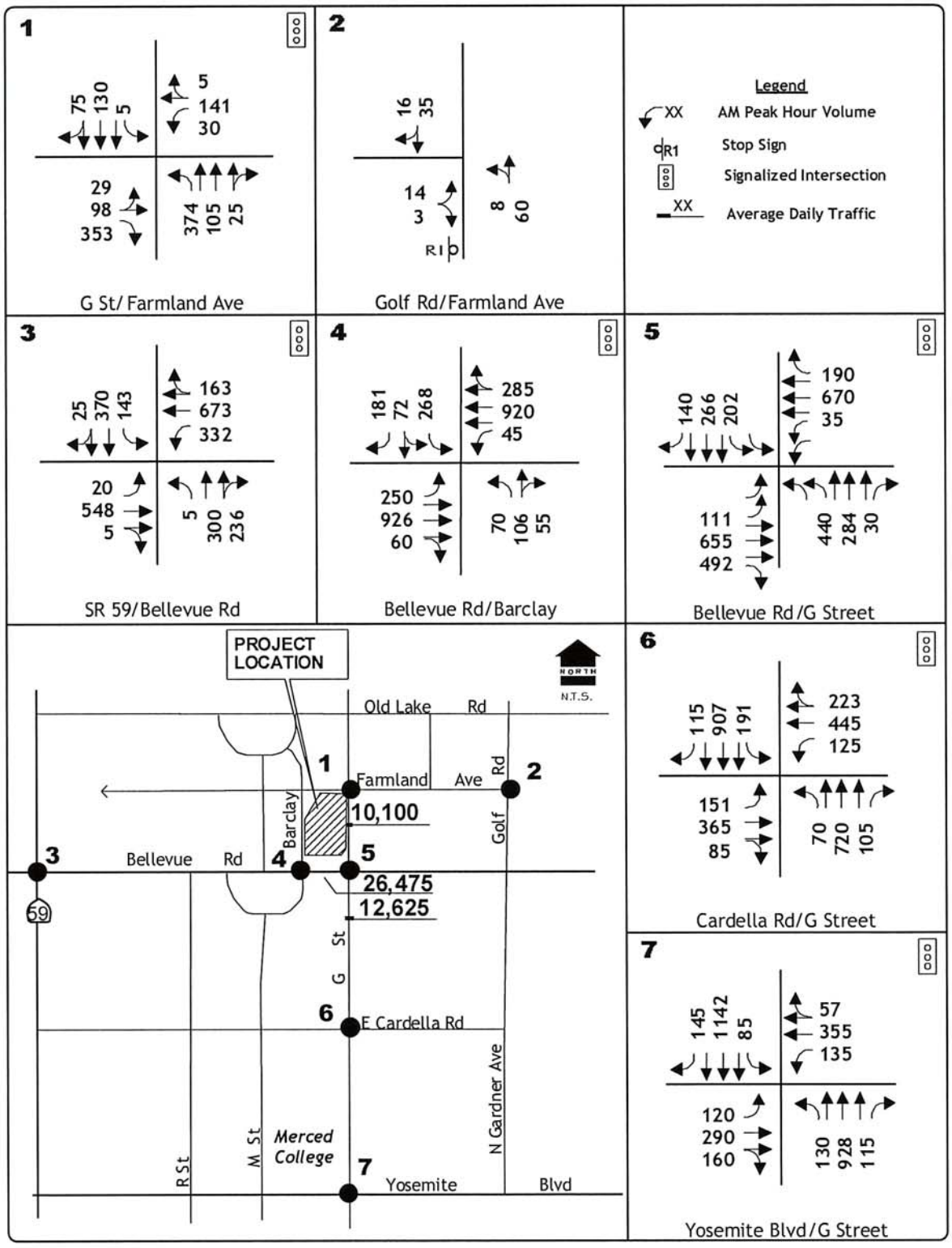
figure 9



YEAR 2030 PLUS PROJECT
TRAFFIC VOLUMES
AND LANE CONFIGURATIONS

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figure 10

TABLE 10
YEAR 2025 PEAK HOUR INTERSECTION LEVELS OF SERVICE
WITH 2,400 STUDENT HIGH SCHOOL

Intersection	Control	Year 2030 No Project		Year 2030 Plus Project	
		Average Delay (Seconds)	LOS	Average Delay (seconds)	LOS
G Street / Farmland Avenue	Signal	24.1 sec	C	32.8 sec	C
Golf Road / Farmland Avenue					
Northbound left turn	EB Stop	7.3 sec	A	7.3 sec	A
Eastbound left+right turn		8.9 sec	A	9.2 sec	A
SR 59 / Bellevue Road	Signal	30.0 sec	C	31.6 sec	C
Bellevue Road / Barclay Road	Signal	19.7 sec	B	27.3 sec	C
Bellevue Road / G Street	Signal	23.3 sec	C	24.3 sec	C
G Street / Cardella Road	Signal	30.0 sec	C	33.8 sec	C
G Street / Yosemite Blvd	Signal	29.2 sec	C	28.8 sec	C

As shown, measured over the breadth of the peak hour and with implementation of planned regional improvements, long term traffic conditions in the study area will within the City of Merced's LOS D minimum at all study locations with and without the proposed high school.

The High School should contribute to the cost of developing the long term circulation system in the north Merced area. Part of this participation will be in the form of frontage improvements made to G Street where the high school will be installing ½ of the ultimate 6 lane section. While the overall circulation system has the capacity to accommodate the high school, this project should contribute its fair share to overall costs, either through adopted fee programs or as a fair share contribution. In the case of adopted fee programs, the high school replaces residential development that was previously assumed to contribute to north Merced area improvements. Thus, a financial contribution equal to the fees contributed by previously assumed residential development would be applicable.

In the case of SR 59 improvements, the high school should contribute its fair share to the cost of signalizing the SR 59 / Bellevue Road, SR 59 Yosemite Avenue and SR 59 / Buena Vista Road intersections. As noted earlier, during the a.m. peak period, the school's traffic represents 6% of the total traffic using the SR 59 /Bellevue Road intersection during the a.m. peak hour. As background traffic volumes are likely to be higher at locations on SR 59 to the south, the school's percentage would be less at intersections beyond the limits of this study.

Peak Period Conditions

Cumulative conditions were also evaluated at the site access intersections and at the G Street / Bellevue Road intersection assuming the peak traffic characteristics associated with high schools. The text which follows describes resulting conditions.

G Street / Farmland Avenue intersection. Assuming the cumulative geometry described

earlier and the improvements prescribed for short term conditions, this intersection will operate "below capacity" during the peak minutes before the school day begins. However, the queue in the single northbound turn lane would be very long (i.e., 34 vehicles or 850 feet). Widening G Street to provide a dual left turn lane into the site or lengthening the planned northbound turn lane to provide this storage is recommended, although not required to meet the City's minimum LOS standard.

Bellevue Road / Barclay Avenue intersection. This intersection would operate at "below capacity" conditions during the peak period before the school day begins. However, the queue in the single eastbound left turn lane would be very long (i.e., 37 vehicles or 925 feet). Widening Bellevue Road to provide a dual left turn lane into the site or lengthening the planned northbound turn lane to provide this storage is recommended, although not required to meet the City's minimum LOS standard.

To provide "below capacity" conditions the following improvements would be needed at the Bellevue Road / Barclay Avenue intersection:

1 Create a "free" westbound right turn lane onto northbound Barclay Avenue that was not controlled by the signal;
2 Provide a three lane southbound approach on Barclay Avenue, and configure this approach with a separate left turn, a combination left + through lane and a separate right turn lane;
2. Widen Bellevue Road to create a second eastbound left turn lane into the site

This level of improvement would deliver LOS E during the peak period. These improvements are recommended but are not required to meet the City's minimum LOS standard.

G Street / Bellevue Road. This intersection would operate "below capacity" during the peak period before school. No additional improvements beyond those already contemplated by the City are needed.

Daily Traffic Volumes

The volume of traffic occurring on the streets surrounding the school on a daily basis is needed to address noise impacts, and can be a meaningful measure of school traffic's use of the overall capacity of adjoining streets. Of particular importance is the project's share of the traffic forecast on the Barclay Avenue and Farmland Avenue crossings over Fahrens Creek. This issue is also important on SR 59.

The share of high school traffic on Farmland Avenue and Barclay Avenue to the west of the campus is dependent on several factors, including the distribution of students' residences, the configuration of school access and modal split. As was noted in Table 8, under long term conditions approximately ¼ of the total student population could reside in the area bounded by Bellevue Road on the south and G Street on the east. A portion of the High School traffic originating in this area will use Barclay Avenue and Farmland Avenue to reach toe school site, although others will use G Street and Bellevue Road, particularly as part of trips made in the

a.m. peak hour by parents who continue on their way to work.

Table 11 summarizes daily traffic volumes on Farmland Avenue and on Barclay Avenue under long term conditions. Net the trips associated with underlying residential uses, the background daily volume on Farmland Avenue is projected to be approximately 6,100 ADT, while Barclay Avenue is projected to carry 4,800 ADT.

TABLE 11
BELLEVUE HIGH SCHOOL CONTRIBUTION TO
BARCLAY AVENUE AND FARMLAND AVENUE TRAFFIC

Street	From	To	Year 2030 Daily Traffic Volume			
			Background Net Residential	High School	Total	High School Percentage of Total
Barclay Ave	Bellevue Rd	School Access	4,800	1,975 *2,370*	6,775 *7,170*	29% *33%*
	School Access	Farmland Ave	4,800	525 *630*	5,325 *5,430*	10% *12%*
Farmland Ave	Barclay Ave	School Access	6,100	670 *800*	6,770 *6,900*	10% *12%*
	School Access	G Street	6,100	1,465 *1,760*	7,565 *7,860*	19% *22%*
Assumes: 2,000 students and 4,200 daily trips generated ADT. *(Assumes 2,400 students and 5,040 daily trips)*						

Therefore, expressed as a percentage of the total traffic volume, the traffic associated with a 2,000 student high school is approximately 10% of the daily volume on the portion of Barclay Avenue north of the school access and 10% of the volume on Farmland Avenue west of the high school access. The shares on the roadway segments between the high school and the adjoining arterial street system are higher (i.e., 19% to 28%). At the 2,400 student level, the percentages on Barclay north of the school access and on Farmland Avenue west of the school access are each 12%, while the percentage on Farmland Avenue east of the school access is 22% and the percentage on Barclay Avenue south of the school access is 33%.

These percentages assume that full access is available at each access point. As noted, it may eventually be necessary to prohibit left turns from the school access onto westbound Farmland Avenue due to the access' proximity to G Street. This traffic control may reduce the school traffic on the Farmland Avenue Bridge slightly, but could result in a corresponding increase in traffic on the Barclay Avenue Bridge.

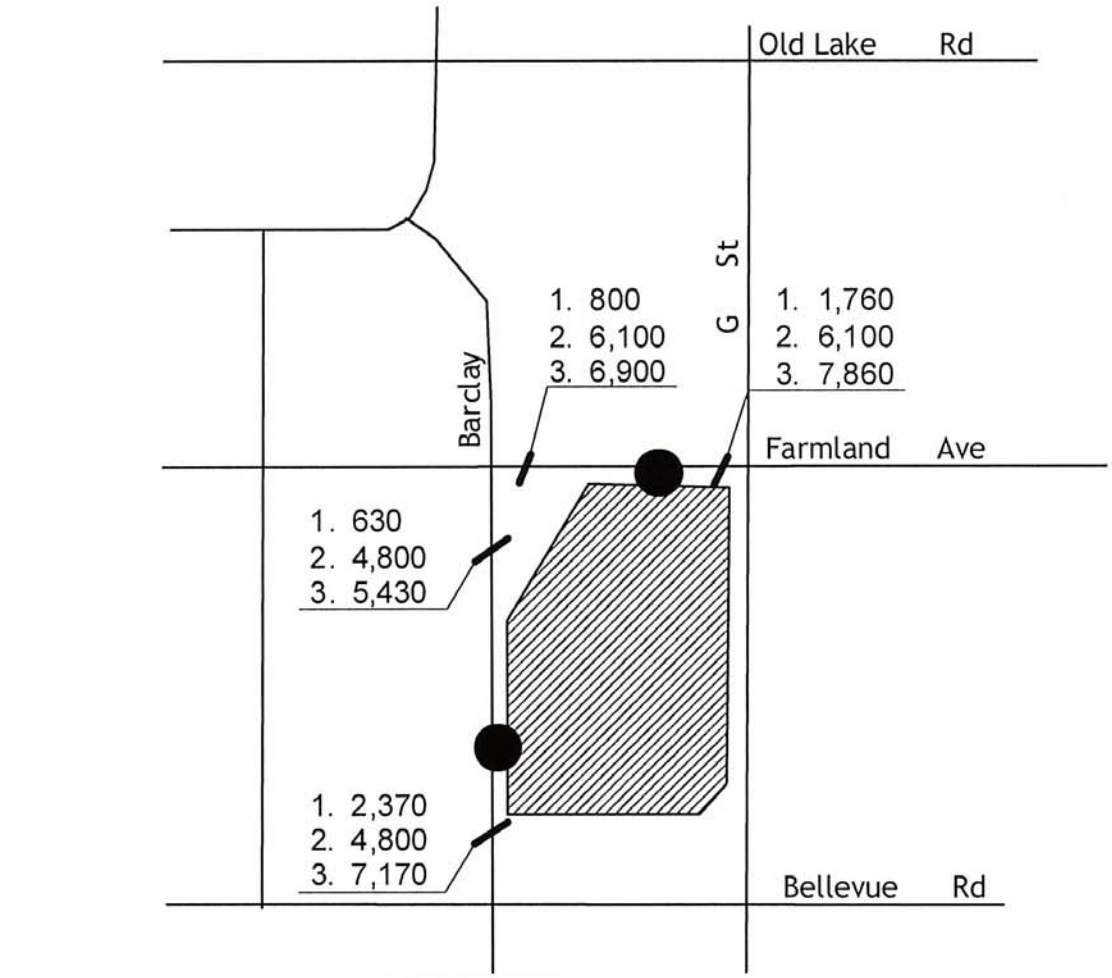
The relative share of total traffic on each road that is generated by the high school will vary

throughout the day. It is reasonable to expect that high school traffic as a percentage of the total would be highest during the morning and early afternoon periods when students are traveling to and from school. The share would be lower during the traditional p.m. peak hour. Cost allocation based on daily traffic would be a reasonable compromise between these two extremes for use of facilities where Level of Service is not the applicable impact measure.

The high school's share of long term traffic on SR 59 is eventually minimized by the development of alternative north-south roads. As shown in Table 12, by the time the north Merced area is built out in 2025 and local residents comprise most of the student population, less than 5% of the daily traffic associated with the High School is expected on SR 59. At that time, High School traffic would represent approximately 1.1% to 1.6% of the total daily traffic on this road and would not represent a significant contribution to the total volume.

TABLE 12
YEAR 2025 TRAFFIC VOLUMES ON SR 59

Road	From	Long Term Daily Traffic Volume		
		Background	**High School Only**	**Percent of Total**
SR 59	Bellevue Rd to Cardella Rd	14,450	230	1.6%
	Cardella Rd to Yosemite Ave	21,600	230	1.1%
	Yosemite Ave to Buena Vista Rod	20,100	230	1.1%



YEAR 2030
DAILY TRAFFIC VOLUMES
NEAR PROJECT

ACCESS / INTERNAL CIRCULATION

The preceding analyses have indicated the extent of improvements to the off-site street system needed to deliver Levels of Service that meet adopted standards and to deliver "below capacity" conditions near he site during the peak minutes before the school day begins. The materials that follow summarize our review of the issues of internal circulation and access with full occupancy of the site.

Access

The site plan suggests that only two driveways will be developed into the site's parking lots. One access point is on the extension of Farmland Avenue area about 400 feet from G Street. The other driveway is planned on the extension of Barclay Avenue area about 1,000 feet from Bellevue Road.

Recommendations for developing parking lot access have been developed based on the consideration of peak period traffic.

Farmland Avenue and its Access. Because of the short spacing available, the portion of Farmland Avenue between the driveway and G Street should be planned as a four-lane section. The two westbound lanes approaching the G Street intersection should be extended all the way to the driveway. In the westbound direction a separate left turn lane should be provided from G Street to the driveway. While full access is initially possible, once the balance of the Northern Bellevue Ranch area adjoining the school is developed and background traffic volumes increase, left turns from the parking lot onto Farmland Avenue will likely need to be prohibited during peak periods. These motorists would instead turn right at the Barclay Avenue access.

Barclay Avenue and its Access. The distance between Bellevue Road and the school's Barclay Avenue access eliminates the spacing issue associated with the Farmland Avenue access's proximity to G Street. Barclay Avenue is wide enough to accommodate a left turn lane approaching the school access, and a northbound right turn lane is to be added at the school access.

Review of Design Features

Driveway Throats. Driveway "throats" are areas that link parking lots with the adjoining street system. These features assist in accommodating the peak period demands that accompany the operation of a high school. Review of the site plan reveals that the configuration of the parking lots in the immediate vicinity of the driveways feature throats that reduce conflicts. The throat on the Barclay Avenue access will along the stadium for 500 feet. The throat on the Farmland access eliminates cross traffic for approximately 350 feet. These features should minimize congestion for inbound traffic.

Loading Area / Off Site Loading. The site plan features loading in two areas. One separated loading area is immediately adjoining the stadium and is planned for busses. The other drop-off area is towards the northern end of the site adjoining the main classroom area and is approximately 750 feet long and could accommodate 30 vehicles.

Based on our experience with other suburban high schools this area is likely to satisfy all of the loading demands occurring before school, but a larger "waiting" demand will occur after school. Shorter term demands for 100 visitor-parent vehicles are not uncommon at new high schools in the afternoon. Typically, waiting parents want to make use of the most convenient areas, and the designated loading areas will fill before the closest on-site visitor parking. Assuming that 30 vehicles occupy a loading area, another 70 vehicles would make use of the spaces in the parking lot that are not occupied by students or staff.

While the propose plan may mathematically accommodate anticipated afternoon parking demands, it is likely that if given the opportunity, some parents may elect to park along Barclay Avenue, Farmland Avenue and G Street while they wait for students. The District will need to work with the City of Merced to identify those locations where parking should be prohibited to ensure pedestrian safety, and applicable signing, curb markings, etc should be installed when the school opens.

SUMMARY OF DESIGN / MITIGATION REQUIREMENTS

Circulation system improvements in the north Merced area are funded by a combination of fronting developer responsibilities, City fees and to some degree public moneys available through the state. Table x identifies the mitigation measures required for this project and discloses the project's participation in these costs.

Mitigation Fees. In addition to the District's improvements, additional roadway infrastructure will be necessary as the Bellevue Ranch Master Development Phasing Plan progresses. The District will pay it's approximately $1.53 million in local transportation impact fees and regional transportation impact fees. Traffic impact fees were calculated using the City's Institutional Land Use impact fee schedule ($6,174 per 1,000 sq. ft. of building space) and the Regional Transportation impact fee schedule ($1,900 per 1,000 sq. ft. of building space) for a total of $8,074 per 1,000 sq. ft. The proposed project includes approximately 190,000 sq. ft. for a total impact fee of $1,534,060.

Participation in local offsite improvements. Regarding construction of the bridges on Farmland and Barclay, MUHSD has proposed that the District will pay a proportionate share of bridge construction costs based on a 24-hour contribution of traffic flows utilizing the bridges at full build-out of the BRMDP area. The school's 24-hour contribution of traffic flows is estimated to be 10%.

Participation in State Highway Improvements. The District will participate in the cost of both short term and long term improvements to SR 59.

SR 59 / Bellevue Road Traffic Signal. Because the traffic signal is unlikely to be warranted when the school opens, the District shall contribute its fair share to the cost of a traffic signal. As noted earlier, the signal is needed for a.m. peak hour traffic, and during that time period high school traffic represents 31% of the total traffic under "existing plus project" and 6% of the total traffic under Year 2025 plus project conditions". Because the signal will be needed before the year 2025, the share contributed by the District shall be the average between these two values, or 13.5%. **Assuming a traffic signal costs $250,000, this contribution is $33,750.**

SR 59 Widening to 4 lanes from 16th Street to Bellevue Road. Over the long term, SR 59 will need to be widened to accommodate future growth. As noted earlier, there is a programmed project to improve the highway from 16th Street through the Olive Avenue-Sante Fe Avenue intersection. This project has a cost of $30 million m but full funding is not secured. In the area north of Olive Avenue widening of SR 59 is occurring as adjacent development occurs. However, development of the west side of SR 59 is not likely, and the schedule for east side development is uncertain. The cost of improving SR 59 to 4 lanes from the limits of the current project through the Bellevue Road intersection is unknown, but a reasonable estimate for this 2½ mile long project could be #10 million. Assumi**ng that high school traffic represents 1.1% of the long term traffic on the highway, the district's responsibility towards both projects would be $440,000.**

APPENDIX

Appendix F

North Merced Area High School Site Suitability Study

North Merced Area
High School Site
Suitability Study

Prepared for:
Merced Union High School District

Prepared by:

EIP Associates

March 2005

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CHAPTER ONE: INTRODUCTION

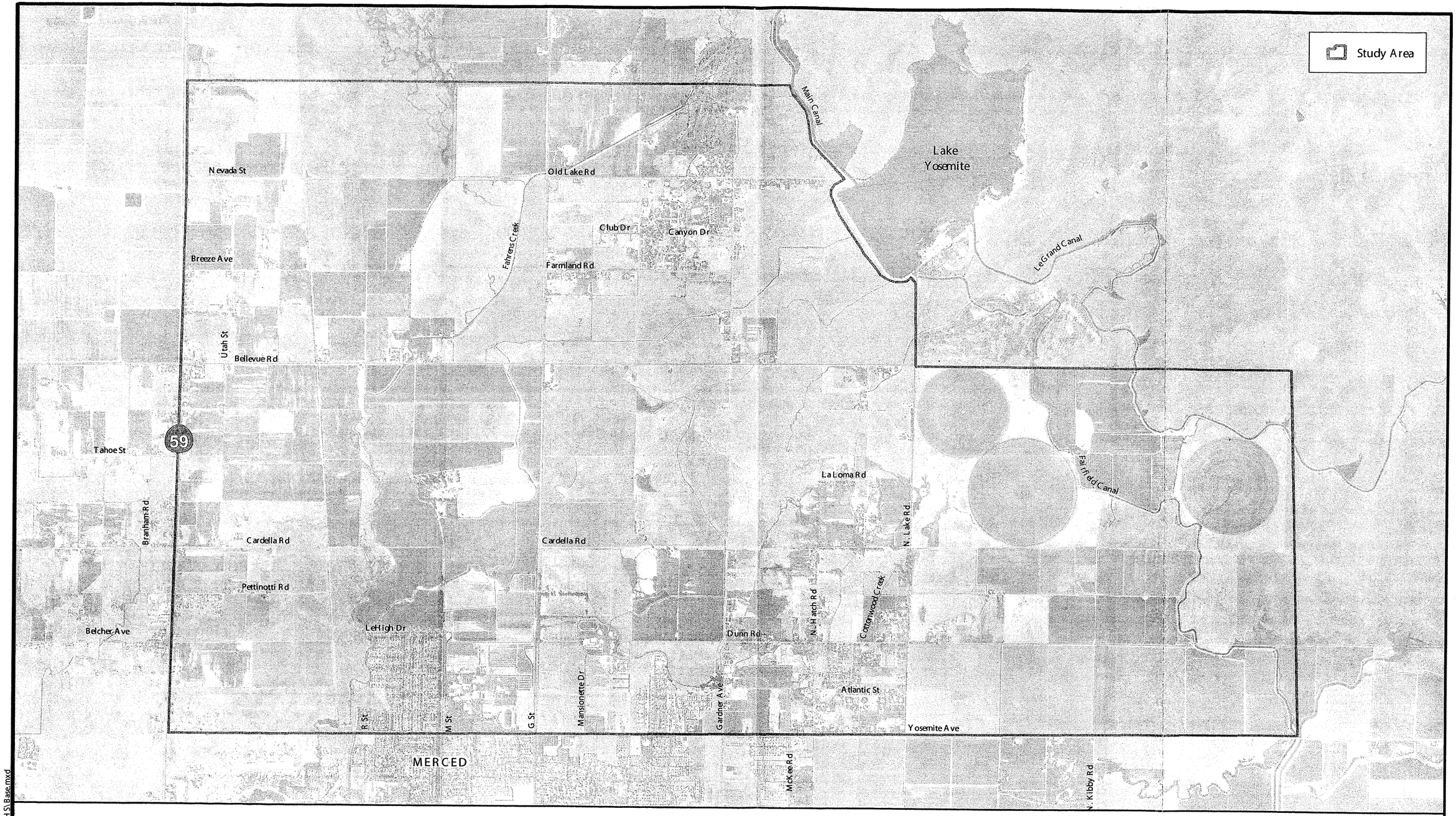
1. INTRODUCTION

Statement of the Task

In order to accommodate current and future growth, the Merced Union High School District (District), is reviewing a range of alternative sites to build three to four new high schools in the future, with the goal of constructing the first facility by 2008-2009. The District is considering a 12 square-mile area in the northern portion of the City of Merced (City), which includes unincorporated portions of the County of Merced, for potential school sites. The District has retained an independent consulting firm, EIP Associates, to conduct a preliminary site suitability study. The site suitability study identifies the benefits and constraints of various locations using GIS database site survey and other available data. The analysis provided in this preliminary study does not, and is not intended to supplant the type of detailed, site-specific studies undertaken during the California Environmental Quality Act (CEQA) process, California Department of Education (CDE) Site Approval Process, or Department of Toxic Substances Control (DTSC) review and evaluation.

Identification of Sites

The District has identified standards for possible high school sites including size of the site (50 acres) to accommodate anticipated student population, avoidance of busing students living within two miles of a campus and city services for selected school sites. The State Department of Education has also published guidelines for school site selection and approval. EIP coordinated with the District to develop an agreed upon evaluation system for the identified constraints. The evaluation system ranks potential sites for suitability in meeting District and Department of Education criteria. Approximately 10 sites within the 12-square mile survey area (Figure 1-1) were identified for preliminary evaluation. A listing of the proposed school sites is included in Table 1-1, Sites Considered in Evaluation as well as Figure 1-2. At the request of the District, this study identifies two scenarios: a four school site scenarios and a three school site scenario. In both scenarios, EIP also recommends which location appears to be the most feasible for development of a high school for the 2008-2009 school year. The remaining school sites listed in the evaluations are recommended for development at an unknown future date, following the construction of the first new school site.



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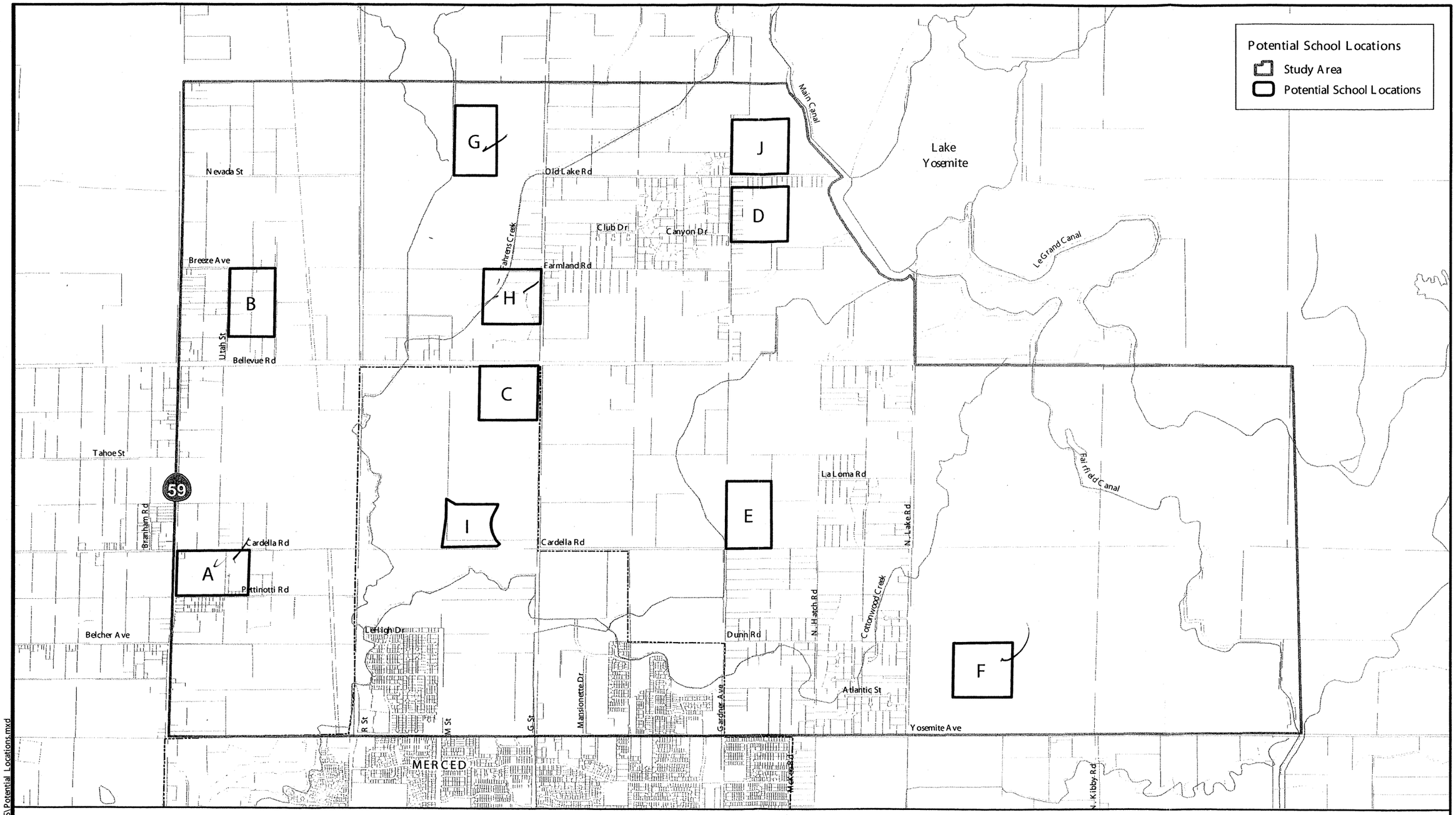
Source: Merced County Association of Governments (MCAG), Aerial Photography, May 2001; US Census Bureau, City Boundaries, July, 2000, Local Streets, TIGER 2K line, July, 2002; USGS, Hydrography, Dec. 1998, DEMs, Atwater, Merced, Planada, 1996; and EIP Associates, Project Boundary, Feb. 23, 2005, and GIS Program, March 9, 2005.

FIGURE 1-1
PROJECT STUDY AREA

Merced Union High School District
Merced County, CA

0 2,500
Feet
1 inch equals 2,500 feet

EIP ASSOCIATES



Source: City of Merced Dept. of Planning, Growth Activity, Oct. 2004; US Census Bureau, City Boundaries, July, 2000, Local Streets, TIGER 2K line, July, 2002; USGS, Hydrography, Dec. 1998, DEMs, Atwater, Merced, Planada, 1996; and EIP Associates, Project Boundary, Feb. 23, 2005, and GIS Program, March 16, 2005.

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FIGURE 1-2
EVALUATED SCHOOL SITE LOCATIONS

Merced Union High School District
Merced County, CA

0 2,500
Feet
1 inch equals 2,500 feet

EIP

TABLE 1-1

SITES CONSIDERED FOR EVALUATION

Site	Site Name	Site Location
Site A	Highway 59 Alternative	Hwy 59 and Cardella
Site B	Breeze Avenue Alternative	Breeze Avenue and Utah
Site C	Bellevue Ranch Alternative	G Street South of Bellevue Road
Site D	Lake Yosemite South Alternative	Southeast of Gardner Avenue and Old Lake Road
Site E	Rural Residential Alternative	Northeast Corner of Gardiner Avenue and Cardella Road
Site F	UCP Alternative	Extension of Dunn Road east of Lake Road
Site G	Old Lake Road Alternative	North side of Old Lake Road east of G Street
Site H	Farmland and G Alternative	Southwest Corner of Farmland Road and G Street
Site I	Cardella and G Alternative	West side of G Street, North of Cardella
Site J	Lake Yosemite North Alternative	Northeast of Gardner Avenue and Old Lake Road

Source: EIP Associates, 2005

Site Selection Criteria

State

The California Department of Education's (CDE) School Site Selection and Approval Guide developed screening and ranking procedures for schools based on the following criteria listed in order of importance:

1. Safety
2. Location
3. Environment
4. Soils
5. Topography
6. Size and Shape
7. Accessibility
8. Public Services
9. Utilities
10. Cost
11. Availability
12. Public Acceptance

Each primary element included in the list above contains secondary standards that outline a specific set of guidelines for application at a particular site. For example, safety includes the following secondary factors for evaluation: adjacent to or near roadways with a high volume of traffic; within 1,500 feet of railroad tracks; within two miles of an airport runway; close to high voltage power lines; close to high pressure lines such as natural gas; contaminants/toxics in the soil or groundwater; close to high-decibel noise sources; close to open pit-mining; on or near a fault zone or active fault; in a dam inundation area or 100-year flood plain; and social hazards in the neighborhood, such as a high incidence of crime. The other primary elements considered in site selection contain a similar list of secondary factors to be evaluated ranging from physical safety and comfort to convenience. Although these standards are not the only criteria considered for site selection, they help narrow down the prospects and establish a basis

for comparison between alternative sites. More specific information about CDE's School Site Selection criteria can be found at the following weblink: http://www.cde.ca.gov/ls/fa/sf/schoolsiteguide.asp#site.

District

The District also maintains a set of guidelines and objectives that provide the baseline standards for selecting a potential school site. The majority of the Districts standards are consistent with those standards provided by CDE. The District's site selection guidelines also require the evaluation of the following issue areas:

1. General Plan consistency and balanced spatial location
2. Risk of hazards or hazardous material impacts (flooding, spills, emissions, etc.)
3. Physical feasibility to develop land (expansive soils, slopes less than 3 percent)
4. Risk of impact to sensitive biological species and habitat
5. Availability of water and sewer lines
6. Economic feasibility of acquisition
7. Level of access
8. Site configuration

Local

The Site Suitability Study also considers the consistency or logical integration of the site with its surroundings, risk of easement constraints, potential displacement of residence, and the need to displace existing structures and the possible costs associated structural removal and site clean up. The District guidelines avoids busing students who live within two miles of a campus, so even disbursement of the school sites is also desirable.

Purpose of Study

The District has a goal to maintain an enrollment of 1,800 and 2,000 students at its permanent facilities. The District currently operates two high school facilities, Merced High School and Golden Valley High School, that serve the City of Merced and portions of the unincorporated County of Merced to the north. Each school is anticipated to have an enrollment of 2,611 and 2,400 students respectively for the 2005-2006 school year.[1] The District has placed portables on-site, in order to accommodate the overflow of students on each campus. With the impending development of the UC Merced Campus, the University Community Plan, Fahrens Specific Plan, Bellvue Ranch Specific Plan, and numerous residential developments to the north, the District is facing an immediate demand for new high school facilities. In addition, future development is planned south of Highway 140 (Weaver Area Development Agreement), which also affect District-wide high school enrollment. In order to accommodate the educational needs of the rapidly growing City, this study provides site selection options to relieve overcrowding at existing facilities, help accommodate the education needs of new residents in north Merced communities, and help redistribute the existing and anticipated future student population in a manner that would accommodate eventual growth in the south.

---

1 Michael Paoli & Associates, *Development Fee Justification Study*, June 11, 2004, page D6.

Previous High School Site Studies

In 2004 the District published a five-year facility plan, based on projected future enrollment of 11,434 students in the District by 2011. A preliminary school site analysis was completed in 2002 by the District that identified four possible high school sites: one at Bellevue Road and R Street, one at Farmland and G Street, one at M Street at Old Lake Road, and one at Farmland Road and G Street. No formal recommendation was provided in the previous analysis. A development fee justification study was also completed for the District in 2004 that anticipates student generation rates in the District at .249 students per single family unit. According to this study, student growth in the District would result in a projected enrollment of 12,692 students by 2013, an increase of 2,415 students over 2005 levels.[2] All enrollment analysis derived from the study will incorporate the results from projections level D of the Development Fee Justification Study.

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2 Michael Paoli & Associates, *Development Fee Justification Study*, June 11, 2004, Table D5.

CHAPTER TWO: CRITERIA AND CONDITIONS

2. CRITERIA AND CONDITIONS

Background on the Criteria

The basis for the criteria was CDE's 2000 School Site Selection and Approval Guide. This guide covers a wide range of issues related to usefulness of the site to meet the anticipated student and programmatic need, the development feasibility of the site, the political acceptability of the site, and many environmental characteristics of the site. In order to apply the criteria to the specific case of the District's study area however, additional definition was necessary. With input from the District, the specific criteria to be evaluated for sites within the study area were identified and are presented below.

Methodology and Assumptions for Analysis and Application of the Criteria

Based on the District's priorities, EIP Associates identified 10 preliminary sites for further evaluation. The criteria for evaluating each site below involves the weighting of each criterion in relation to its overall importance. Each site is then ranked according to each of the criteria. This ranking system is outlined below.

Methodology

Weighting of the Criteria

The study area was evaluated for sites with potential for school development per CDE requirements. For sites that were not eliminated from further evaluation (no fatal flaws), desirable features were identified in proximity to these sites. Lastly, the other remaining criteria were given an approximate weight for use in evaluating a site. All areas of evaluation were categorized as desirable, moderately desirable, or low level of desirability. The assigned weight reflects to the overall desirability of the particular criterion as it would affect the acquisition and development of a site.

Fatal Flaws

The fatal flaws analysis identifies site characteristics that severely limit the District's ability to feasibly develop a site for future school use. The baseline criteria for identifying fatal flaws were derived from the CDE School Site Selection Safety Factors. EIP staff also incorporated input from District Staff regarding which physical constraints that would eliminate a site from consideration.

- 200 feet proximity to transmission line;
- Located on earthquake faults or in landslide areas;
- Located within close proximity of an unmitigable hazardous waste sites, underground storage tanks, or other hazardous materials;
- Located within close proximity to the landfill;

- Directly adjacent to railroad tracks, freeways, or roadways with major traffic;
- Located on a site with prominent and unmitigable wetland features and sensitive habitat; and
- Site is twice as long as it is wide.

Other factors to be considered in order of importance

- Located in close proximity to native flora and fauna;
- Flooding beyond 3 feet in depth;
- Located close to noise sources;
- Located in close proximity to air pollution sources;
- Slopes steeper than 3%;
- Located on a property that currently contains structures; and
- Located on Prime Agricultural Land.

Desirable

- Close proximity and access to existing utility lines;
- Accessible by road;
- Consistent with surrounding development designations;
- Close to anticipate student attendance areas; and
- Feasibility of acquisition

A. EVALUATION CRITERIA

This study provides an analysis of all of the analyzed sites using the CDE Site Selection Criteria Categories as identified in Appendix of the Resources for School Facilities Planning Handbook. Table 2-1 identifies how each Criteria Category was evaluated for significance. This study is based on information gather from site surveys, existing GIS layer data, District studies and reports, Federal resources, State resources, the City of Merced, the County of Merced, existing public environmental documentation, and existing EIP Resource Documents. Below is a list of issue areas that are addressed in this document using existing GIS data. Copies of the GIS overlays can be found in the Appendix to this study.

TABLE 2-1

CRITERIA SIGNIFICANCE DEFINITIONS

	Desirable	Moderately Desirable	Less Desirable
Safety	Site is located in an area far from high volume traffic, high voltage power lines, hazardous materials and emissions, flood hazards, railroad tracks and within close distance of an airport runway	Site is located in an area that area that has some risk of hazardous activity or material within a close proximity.	Site is located in an area where students could be subject to a potentially significant impact associated with hazards or hazardous materials
Location	Site is located in an area with compatible land uses and with safe walking areas	Site is located in a less centrally located area with potential compatibility issues	Site is located in an area that prohibits the achievement of the project objective and could result in conflicting or incompatible land uses

TABLE 2-1

CRITERIA SIGNIFICANCE DEFINITIONS

	Desirable	Moderately Desirable	Less Desirable
Environment	Site would result in no known impacts to sensitive biological resources or result in environmental impact to on-site sensitive receptors	Site has moderate potential to generate impacts to sensitive biological resources based on CNDBB Database; Site offers reasonable risk of environmental impacts to sensitive receptors	Known wetlands or sensitive habitat have been identified on-site via aerial analysis; Site offers potentially significant risk of environmental impacts to sensitive receptors
Soils	Site is located on primarily stable land with low to shrink-swell capacity	Site is located primarily on land with low to moderate shrink-swell capacity	Site is located primarily on land with moderate to high shrink-swell capacity
Topography	Site is located on a primarily flat and developable surface	Site is located on a surface with portions exceeding three percent slope	Site is located on a surface with large portions exceeding a three percent slope and a nine percent slope
Size and Shape	Site acreage is not more than twice as long as it is wide, contains a minimum of 55 acres of usable land, and has the potential for expansion	Site configuration not equally balanced or site contains less than 55 acres	Site configuration is not equally balanced, the site footprint is less than 55 acres and the site has no potential for expansion
Accessibility	Site provides adequate pedestrian and multiple vehicular access points; Site is reachable by emergency medical services	Site provides limited pedestrian and vehicular access points; Site offers emergency medical service constraints	Site provides no vehicle access and no formal pedestrian access
Public Service	Site is adequately served by fire police, solid waste and public transportation service providers	Site receives partial public service capabilities	Site receives no access to existing public service
Utilities	Site has access to utilities via City water and sewer connection	Site is located in an area that will receive sewer and water service by 2008-2009	Site is located in an area where extension of sewer and water services is not expected
Cost	Site acquisition costs appear to be reasonable and don't assume excess additional cleanup, relocation, mitigation grading or maintenance costs	Site acquisition costs appear are more expensive and include additional cleanup, relocation, mitigation, grading or maintenance costs	Site acquisition costs a re high and a high level of on-site mitigation, additional cleanup, relocation, mitigation grading, or maintenance costs requirements are need
Availability	Site is on the market for sale or site is vacant	Site has three or less structures on site and is primarily vacant. Site could result in relocation of residents	Site has greater than three structures and would result in the relocation of said buildings and its residents
Public Acceptance	Site is located in an area that is strongly supported by a majority community members and local land use agencies	Site is located in an area that is supported by community members, is reasonably consistent with local land use policy, but may raise questions from stakeholders	Site is located in an area that is controversial to local community members and/or local land use agencies

Note:

● - Desirable

◒ - Moderately Desirable

○ - Less Desirable

Source: EIP Associates, 2005.

General Plan Land Use Designations

Development designations for the proposed project area were obtained from the Land Use Element of the Merced Vision 2015 General Plan for the City of Merced. Outside of the City boundary, development designations were obtained from the County of Merced General Plan Land Use Element. Land Use Elements are intended to preserve areas of open space as well as guide the general type, distribution, and location of development within each planning jurisdiction. Development designations were also obtained from the County of Merced University Community Plan and the UC Merced Campus Site Plan, plan areas where specific development designations have been adopted to amend the General Plan Land Use Diagram (see Figure 2-1).

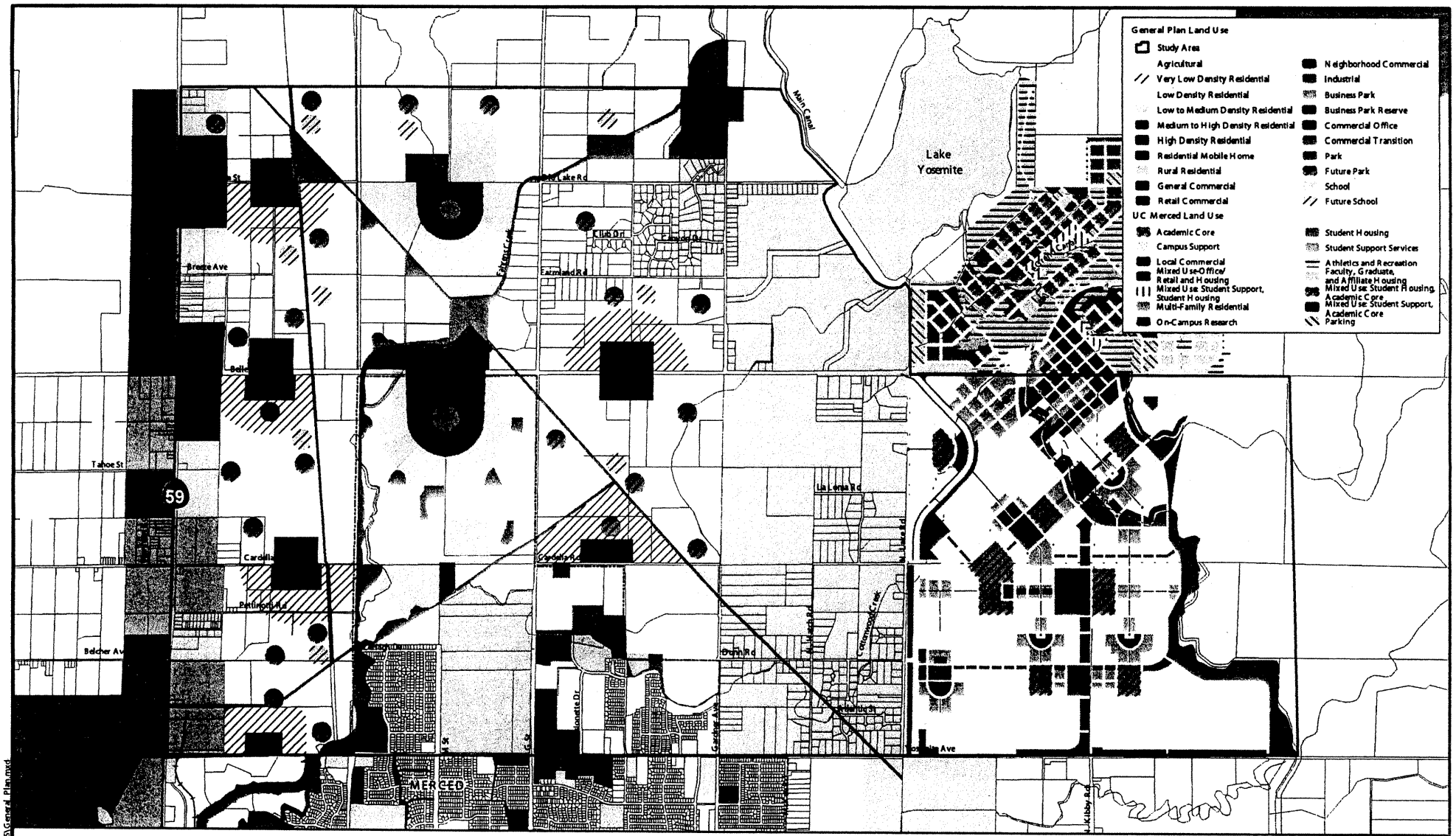
The Merced County General Plan is relatively quiet on the topic of school facilities, deferring school planning to local school districts. The City of Merced General Plan contains the Public/Government designation for public facilities such as schools. The Proposed Land Use Diagram included in the General Plan illustrates eight potential school sites and four fixed location sites north of Cardella Road.

University Community Plan

The County of Merced University Community Plan proposed a 2,000-acre university campus (including a 910-acre "Main Campus Area," a 340-acre "Campus Reserve," and a 750-acre "Natural Preserve") and a 2,000-acre campus community, to be located in eastern Merced County. In 1996, the County of Merced amended its General Plan to designate the area east of Lake Yosemite and northeast of the City of Merced for the University Community Specific Urban Development Plan (SUDP). In 1999 and 2000, the UCP SUDP planning process was further refined to establish the UC Merced Long Ranch Development Plan adjacent to the project area. The Long Ranch Development Plan designates the campus site for academic and administrative uses, student support facilities, student housing, athletics and recreation, campus support, open space and parking. In 2004, the UCP was adopted and the SUDP was redrawn to include a 2,000 acre area west of Lake Road, between Bellevue Road and Yosemite Avenue.

Compatibility

Adjacent land uses would be considered incompatible when the physical effects (i.e. odors, dust, light and smoke) associated with the operation of one land use would adversely affect an adjacent land use. Due to the possible noise levels, emissions, and the potential for exposure to hazardous materials associated with Industrial operations, proposed school sites would be considered incompatible with industrial uses. School sites could also be located adjacent to areas currently containing agricultural operations. Agricultural activities generate dust, odors and potential pesticide drift that could be considered a nuisance during school operation. However, implementation of the County's Right to Farm Ordinance, and Policy OS-2.1(b) and (c) of the County General Plan which seeks to minimize conflicts between agricultural and adjacent uses by establishing buffers, would eliminate these potential inconsistencies. Continued growth and development to the north in conjunction with proposed land uses identified in the City of Merced Vision 2015 General Plan will ultimately result in the loss of important farmlands (Figure 2-2). Farmlands classified as prime or unique are considered the most valuable in the region.



Source: Merced County Association of Governments (MCAG), General Plan, 2000; US Census Bureau, City Boundaries, July, 2000, Local Streets, TIGER 2K line, July, 2002; USGS, Hydrography, Dec. 1998, DEMs, Atwater, Merced, Planada, 1998; and EIP Associates, UCP Land Use, March 12, 2002, and GIS Program, March 16, 2005.

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FIGURE 2-1
GENERAL PLAN LAND USE

Merced Union High School District
Merced County, CA

0 2,500
Feet
1 inch equals 2,500 feet

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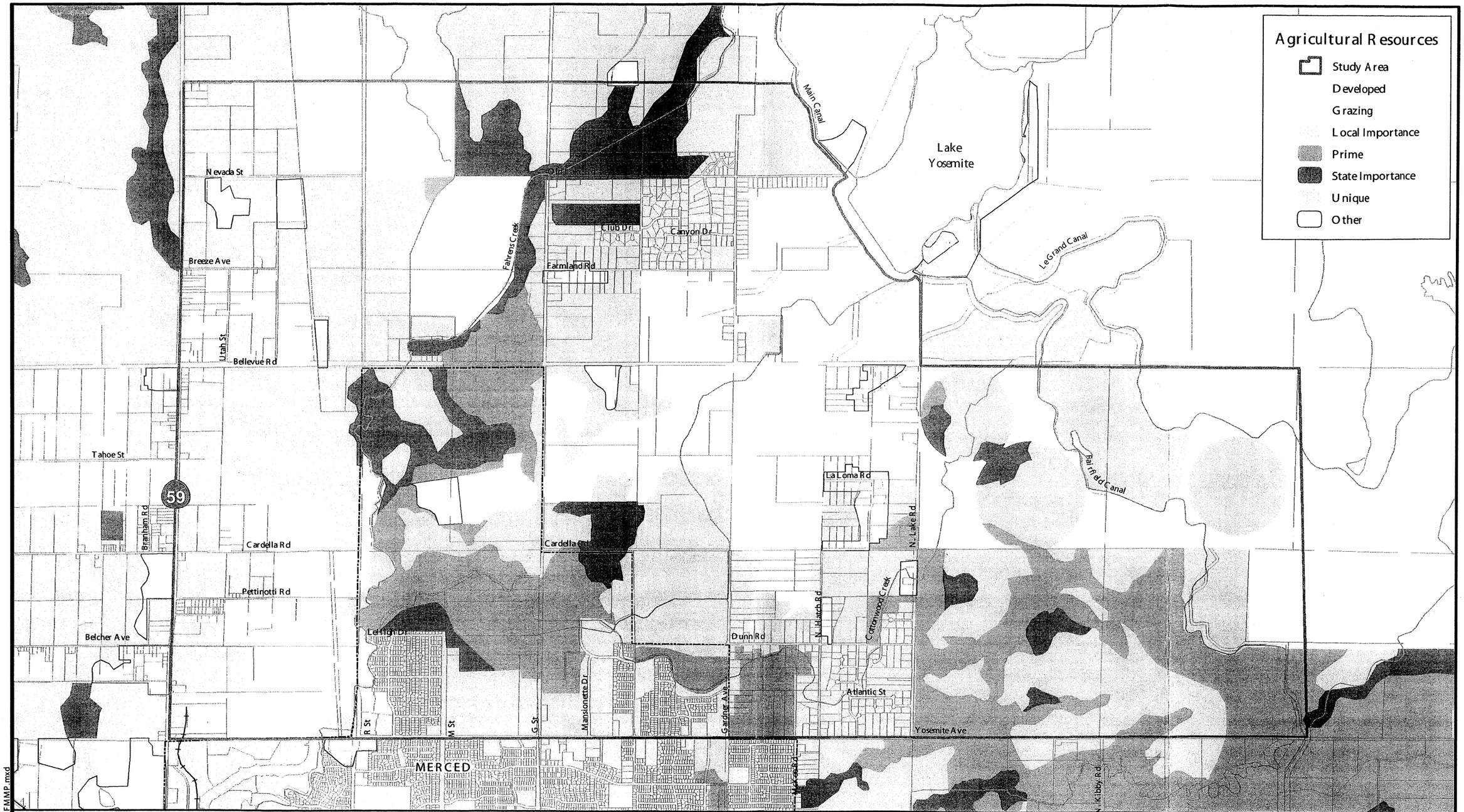
pg 2-5



Source: California Dept. of Conservation, Farmland Mapping and Monitoring Program, Agricultural Resources, 2002; US Census Bureau, City Boundaries, July, 2000, Local Streets, TIGER 2K line, July, 2002; USGS, Hydrography, Dec. 1998, DEMs, Atwater, Merced, Planada, 1996; and EIP Associates, GIS Program, Feb. 25, 2005.

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FIGURE 2-2
IMPORTANT FARMLANDS

Merced Union High School District
Merced County, CA

0 2,500
Feet
1 inch equals 2,500 feet

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Proposed school sites would be considered compatible with a variety of uses including residential, commercial, and office uses. It is also common for school sites to be to be planned adjacent to public park uses, in order to encourage the shared use of resources such as playing fields, parking areas, and other recreational resources. Proposed school sites within the study area could be located adjacent to low, medium or high density residential areas, which would not conflict with proposed school uses.

Sensitive Habitat for Flora and Fauna

The California Natural Diversity Data Base (CNDDB) is a comprehensive compilation of sightings and historical records of listed state and federal plant and animal species. The California Department of Fish and Game (CDFG) database is updated every six months, based on data submitted from the public on sightings of sensitive species and develops maps to identify the potential range or location of the identified sensitive species. These sensitive species maps provide a general idea of the location and range of the sensitive species. However, the precision of the sighting location and habitat range accuracy is determined by how the data are submitted. If the reporting of the sensitive species does not provide exact location data in the sighting file, then the CDFG map range shows a range of possible locations of the species indicated by a circle (small, medium or large). The center of the circle represents the approximate location of the sighted sensitive species. If more detailed information becomes available, for example, a habitat range study area provided by a biologist, then a mapped polygon reflecting the habitat range study area is created. Information from the CDFG database is presented on the sensitive species map (Appendix). In evaluating the biological resources of the alternative sites, 20 sensitive species tracked by the CNDDB were located within the study area.

As a part of our previous analysis of the Northern Merced Area, EIP Associates staff performed an aerial wetland assessment of the study area. The study area contains approximately 17 wetland types and other water bodies that fall under the jurisdiction of the United States Army Corps of Engineers (Corps). Under Section 404 of the Clean Water Act (CWA, 1972), the Corps has the authority to regulate activity that could discharge fill or dredge material or otherwise adversely modify " waters of the United States."

The term "waters of the United States" as defined in Code of Federal Regulations (33 CFR 328.3[a]; 40 CFR 230.3[s]) includes:

1. All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

2. All interstate waters including interstate wetlands. (Wetlands are defined by the Federal government [CFR, Section 328.3(b), 1991] as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.);

3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mud flats, sand flats, wetlands, sloughs, prairie potholes, wet meadows,

playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters:

- which are or could be used by interstate or foreign travelers for recreational or other purposes; or
- from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
- which are used or could be used for industrial purposes by industries in interstate commerce;

4. All impoundments of waters otherwise defined as waters of the United States under the definition;

5. Tributaries of waters identified in items 1 through 4;

6. Territorial seas;

7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in items one through six; and

8. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with the U.S. Environmental Protection Agency (EPA [328.3(a)(8) added 58 FR 45035, Aug. 25, 1993].

Under normal circumstances, three positive indicators: (1) wetland hydrology (2) hydrophytic vegetation, and (3) hydric soils must be present to be classified as a jurisdictional wetland. Ponds, swales even drainage channels were considered to be wetlands, but the relative biological values of these different types of wetlands were considered in evaluating sites. Development within areas impacted by wetlands or areas containing sensitive wetland habitat identified in the aforementioned sensitive biological habitat discussion would require the receipt of permits, authorizations, certifications, or opinions from, or in consultation with applicable resource agencies. These may include (but are not limited to):

- U.S. Army Corps of Engineers, Clean Water Act Section 404 permits
- U.S. Fish & Wildlife Service and National Marine Fisheries Service, Federal Endangered Species Act Section 7 or Section 10 consultations
- California Department of Fish & Game, California Endangered Species Act (Fish & Game Code Section 2080) incidental take permits and consultation and Fish & Game Code Section 1600 Lake and Streambed Alteration Agreements
- California Regional Water Quality Control Board, Clean Water Act Section 401 certifications and Section 402 NPDES permits

- City and County native and heritage tree permits.

Noise

A review of existing documents was performed for the application of this criteria, including Noise Elements of the City and County General Plans, General Plan EIRs, and various project EIRs in the vicinity of the study area. Vehicular and air traffic were the main sources of noise near the sites studied. According to the City of City of Merced General Plan, areas with less than 65 LdN noise levels are classified as clearly acceptable. The Castle Airport is located approximately one mile and a half from the closest point in the study area. According to the City General Plan, the worst case noise scenario for the Castle Airport for the year 2015 shows noise contours show the noise contours ending at Highway 59. The projected Castle Airport 65 CNEL contour lines terminate more than a mile west of Highway 59, which ensures that airport noise would not affect any of the school sites in the study area. No railroads are located within close proximity to the study area, therefore, railroad noise would not affect any of the proposed school sites. Vehicular noise along major transportation routes in some areas of the county and industrial noise would be the only potential noise sources in the study area.

Noise contours for G Street, M Street, and Yosemite Avenue in 2010 are included in the City General Plan. For G Street from Yosemite Avenue to Cardella Road, a 65 dB LDN noise contour was located 198 feet from the center of the roadway. This portion of the study area is within the City of Merced boundary, however, noise levels north of Cardella in the study area are likely to be lower because traffic outside of the City decreases in volume. For M Street from Yosemite Avenue to the City limits, a 65 dB LDN noise contour was located at 32 feet from the center of the roadway. For Yosemite Avenue from M Street to G Street, a 65 dB LDN noise contour was located at 120 feet from the center of the roadway; and Yosemite Avenue from G Street to McKee Road, a 65 dB LDN noise contour was located at 52 feet from the center of the roadway. Traffic levels are generally lower outside of the City and as a result, noise levels would be reduced.

According to the EIR for the UCP Area, G Street, Bellevue Road and Lake Road will serve as the major transportation routes for the campus. Therefore, noise levels along these roadways would also be expected to increase by 2010. The City of Merced General Plan also identifies a future extension of M Street north of Old Lake Road by 2015, which may also affect noise levels in the study area. School sites in the study area were proposed along roadways that offered transportation access, but are not major arterials or heavily trafficked roadways under current or future scenarios. EIP also avoided locating school sites in areas that are adjacent to industrial operations (such as the southwest of the intersection of Yosemite Avenue and Highway 59). By avoiding major roadways and industrial uses, noise levels would be considered acceptable at the proposed school sites.

Flood/Drainage Hazards

Flood/drainage hazards for the study area were evaluated and mapped using information from the Federal Emergency Management Agency (FEMA), the California Office of Emergency Services, and the Yosemite Dam Break Analysis (Appendix). The study area was evaluated for potential flooding beyond three feet in depth, based on floodplain mapping as defined by FEMA's Flood Insurance Rate Maps and the Yosemite Dam Inundation Area as defined by the California Office of Emergency Service Dam Inundation Data.

Fema Flood Zone

Sites classified as FEMA Flood Zone A: An area inundated by 1% annual chance of flooding was considered to be the biggest flood risk; and Flood Zone x500: An area inundated by .2% annual chance of flooding with annual depths of less than 1 foot or with drainage areas less than one square mile, or an area protected by levees from 1% annual chance flooding was rated as having a lower potential for flooding, but still worth noting. Sites located in FEMA Flood Zone A would be subject to flood insurance. The areas most vulnerable to flooding in the study area follow Fahren's Creek, running south along G Street, just north of Bellevue Road and then generally south along M Street.

Yosemite Lake Dam Inundation Zone

The entire eastern portion of the study area is subject to dam inundation from the Lake Yosemite Dam. A dam failure can cause loss of life, damage to property, and other ensuing hazards, as well as displacement of residents, the loss of mass care facilities, and the destruction of bridges and evacuation routes in the inundation path. The California Code of Regulations, Title 5, Section 14010 (g), requires that new schools are not to be within an area of flood or dam inundation unless the cost of mitigating the impact is reasonable. A Dam Break Analysis was performed for a possible school site at G Street northwest of Bellevue Road and for an alternate site at Cardella Road to the west of G Street in 2004 by Harris & Associates. The study identifies the anticipated wave depths at seven approximate locations (Table 2-2). Results showed that flood wave depths would be approximately 10.73 feet at the G Street and Bellevue location and 2.49 feet at the Cardella Road and G Street location.[1] Since flood wave depth and associated mitigation measures would vary from site to site, a site specific dam break analysis would need to be completed when an exact location for a school site is chosen.

TABLE 2-2

NORTH MERCED DAM INUNDATION LEVELS

ID	Distance	Flood Levels (FT)
1	0.12 mile	12.06
2	0.47 mile	16.73
3	1.1 mile	7.05
4	1.29 mile	9.03
5	1.6 mile	10.73
6	2.0 mile	2.58
7	2.6 mile	2.49

Source: Harris & Associates, 2004.

Geologic Hazards

Geologic hazards for the proposed sites were evaluated using information from the Soil Conservation Service and environmental review documents completed for in the study area.

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1 Harris & Associates, Yosemite Lake Dam Break Analysis, November 2004.

When movement occurs along a fault, the energy generated is released as waves which cause groundshaking. Groundshaking intensity varies with the magnitude of the earthquake, the distance from the epicenter and the type of rock sediment through which the seismic waves move. According to the most recent estimates published by the CDMG, the area of California where the study area is located has low potential for strong seismic groundshaking.[2]

Site Topography

Based on the City of Merced General Plan, the study area is not subject to landslides because the area is relatively flat, unless excessive watering or oversteepening occurs. The City General Plan also states that no liquefaction hazard areas have been identified to date within the vicinity of the proposed school sites. However, the potential for liquefaction within the study area still exists. Based on USGS Hydrography information, slopes greater than 3% were modeled for the study area (Appendix). The map shows that the steepest slopes, steeper than 9% are located at the mouth of Lake Yosemite continuing south and along the edge of the Club Drive subdivision, as well as in patches in the UCP area. Slopes greater than 3% are scattered throughout the study are, largely concentrated to the east of Gardener Avenue.

Soil Constraints

Soil Conservation Service maps were used to identify the severity of potential for expansive (shrink-swell) soil and compaction hazards for the study area (Appendix). Once a school site is chosen for development, soil stability for the site must be evaluated in a geotechnical study to determine site specific improvements and design features that would be required to meet the current California building code and safety standards. However, soil stability for the study area has been generally evaluated for this study based on the location and quality of particular soil types.

Expansive Soils

Expansive soils are fine grained (e.g. clay or silt), that undergo swelling when wetted and conversely shrink when drying. The result of the shrink-swell process can adversely influence the performance of foundations, slabs, pavements, hardscapes, and other surface improvements. Soils having high silt and/or clay content that may be expansive could be found within the high shrink-swell potential category of the study area on the soils map, generally clustered below Lake Yosemite between Gardener Avenue and North Lake Road. Areas of low-to-moderate and low shrink-swell potential were also identified. Improvements in expansive soils areas may require replacement or cover with non-expansive soils or can be mitigated by the replacement of facilities or structures.

Compaction

Soft or otherwise compressible soils are soils that are low in density and when either loaded and/or wetted, densify and can result in settlement of the overlying ground surface. Soft or compressible soils would be considered more stable than expansive soils, but would still require modification prior to development. Potentially compressible soils may be present in the low-to-moderate shrink-swell

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2 County of Merced University Community Plan EIR, November 2004, p. 4.6-5.

potential category on the soils map, and are scattered throughout the study area. These soils can be mitigated by removal and recompaction, in-place treatment, or reinforcement of overlying improvements and structures.

Safety Hazards

Hazardous Materials and Emissions

Potential hazardous waste contamination sites and emission sources were identified using existing data and information gathered from Geotracker. Proposed sites were located to avoid these hazardous material sources. Possible hazardous material sources included diesel fuel, gasoline, leaking underground storage tanks, leaking underground fuel tanks, emission sources, gasoline storage, and photochemical photoprocessing. Generally proposed sites located adjacent to contaminated sites were considered infeasible, proposed sites located near contaminated sites were rated as average, and proposed sites not located near any identified contaminated sites were rated highest. Diesel fuel sources were identified along Highway 59 and Yosemite Avenue; and gasoline storage was located along N. Lake Road and N. Hatch Road. A gasoline tank was also located at Bellveue, west of G Street. A landfill site was also noted approximately 2000 feet to the north of the study area.

Transmission Lines

Other potential hazards to be considered for school siting include high voltage transmission lines in the project vicinity. According to the School Facilities Planning Site Selection and Approval Guide, the following limits have been established for locating a school site property line near the edge of a high-voltage transmission line: 1. 100 feet from the edge of an easement for a 50-133 kV line; 2. 150 feet from a the edge of an easement for a 220-230 kV line; and 3. 350 feet from the edge of an easement for a 500-550 kV line. Three power transmission lines run through the study area (Appendix). A 70 kV transmission line bisects the study area, a 230 kV transmission line runs diagonally from north of Club Drive southeast to the east of N. Kibby Road, and a 110 kV line runs along Yosemite Avenue north to a point around R Street and ziz-zags back down along Yosemite to the east of N. Hatch Road. Site locations for this study were identified at least 200 feet from any overhead transmission lines of above 50 kV. Any site located within 200 feet of the three transmission lines was considered infeasible.

Vehicular Transportation Access

According to the Facilities Planning Site Selection and Approval Guide, a site should not be located adjacent to a major roadway or freeway where traffic could cause safety problems or sound-levels that would affect the educational program. However, school sites must provide easy access from major collector or arterial streets, allowing minimum peripheral visibility from planned driveways, and safe arrival and departure for students. Major circulation routes for the study area were mapped and driving distances from potential school sites to the closest major roadways nearby highways were considered. Planned interchanges and roadway improvements discussed in the General Plans and other relevant transportation planning documents were also taken into consideration during this review (Appendix).

Utility Access

Existing sewer and water pipelines were also mapped for the study area based on City data (Appendix). Water lines currently extend east of Highway 59 along Yosemite to N. Hatch Road, north of the City on M Street to LeHigh Drive, north on Gardener Avenue approximately ½ mile above Dunn Road, and north of the City on G Street turning east at Bellevue Road and terminating at N. Lake Road. Access to existing sewer and water lines was also considered in the site suitability analysis, especially for the site proposed to be developed by 2008-2009.

B. SITE-SPECIFIC EXISTING CONDITIONS

This study evaluated 10 potential school sites (Alternative Sites A through J) within the 12 square mile study area. A map detailing the locations is included in Figure 1-2 and in Appendix. Issues determined to have little to no impact on site selection (fault lines, noise, emissions) have been omitted from the conditions discussion, where appropriate.

Alternative Site A- Highway 59

The Site A Alternative (Figure 2-3) is a rectangularly shaped 56-acre site located near the western boundary of the project study area adjacent to Highway 59. The site is bounded by Cardella Road to the north, Pettinotti Road to the south, Highway 59 to the east and agricultural land to the west. The area initially selected for analysis encompassed three parcels totaling approximately 56 acres. The largest parcel is a 38 acre farm parcel that is currently vacant and for sale by the owner for commercial use. Adjacent to the 38 acre parcel is an additional 16 acre agricultural parcel. The remaining parcels are a 2 acre parcel small lot residential units that surround the perimeter of the site.

Benefits

Site A offers many of the Characteristics required for a suitable high school site. The site is located adjacent to Highway 59 and provides a very accessible location for prospective District students. Site A offers various points of access including Highway 59. However, Cardella Road and Pittinotti Road would provide direct access to the site via local collectors, which would help limit traffic issues. Traffic flows would be further reduced upon the development of the proposed Utah Street extension.

The physical constraints to the land are limited on Site A. The site is relatively flat and does not consist of highly expansive soils. An aerial wetlands assessment of the site revealed no wetland resources or associated biological species of significance on-site, making the site more suitable for development. While the site is located in the Yosemite Lake Dam inundation zone, the risk associated with a potential dam break was determined to be minimal according to the Harris & Associates Yosemite Lake Dam Break Analysis. During a dam break, Site A would experience less than 2.5 feet of flooding. Also the assessed value of the 56 acres is relatively inexpensive.[3] Despite the relatively inexpensive cost of the land, Site A would provide the District with a location that

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3 Merced County Association of Governments, Geosmart GIS Data layers, parcel information, http://www.mcag.cog.ca.us/, accessed February 28, 2005.

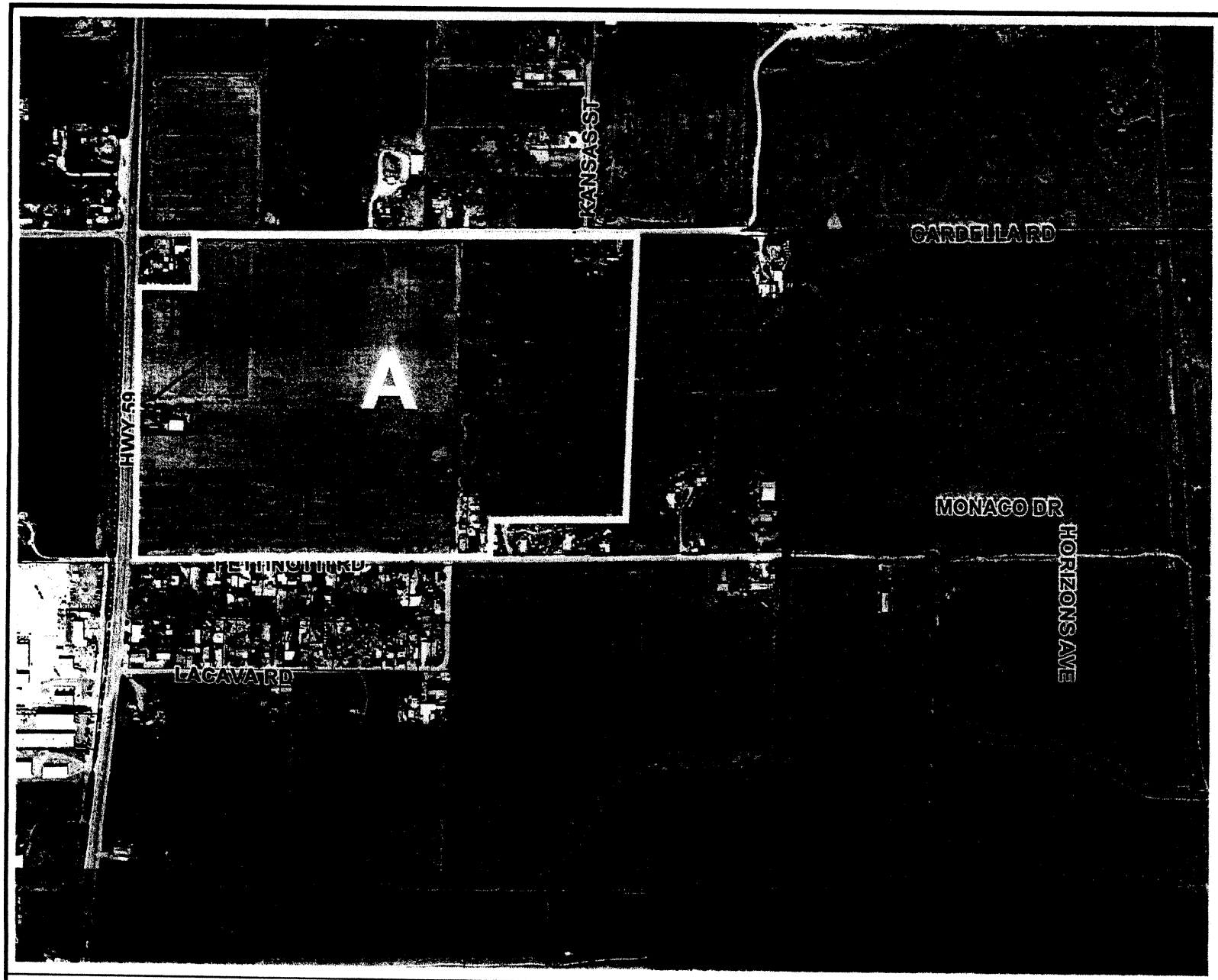

FIGURE 2-3
Site A-Highway 59 Alternative
Merced Union High School District
Merced County, CA

Source: Merced Data Special Services, March 9, 2005

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addresses future growth associated with the Fahrens Creek Specific Plan, well as future growth in the community of Franklin and other parts of Northern Merced.

Constraints

Proximity to Highway 59 also presents some constraints to developing Site A as a school. Highway 59 is a two-lane highway that is often occupied by trucks that transport potentially hazardous materials to and from the landfill. The materials transport issues, combined with the need for traffic signalization at Cardella Road and Highway 59, and high traffic volumes, present some safety issues and potential obstacles for site development. While current traffic levels along Highway 59 remain light, should Site A be developed prior to the proposed extension of Utah Street, the potential for heavy traffic exists.

Site A does not have the extension water or sewer services and there are no known near term plans to provide such a service. Additionally, Site A is located in an area that was not designated for the development of a school. In fact, the Highway 59 corridor is planned for the development of a Business park/Government District. While there are no county regulations barring the development of a high school adjacent to or within an area with business or government structures, one could argue that the project could raise compatibility issues with the proposed commercial land use designation of the surrounding area. However, the development of an institutional/educational use on a site designated as commercial is allowable with a conditional use permit.

In addition to potential land use conflicts, Site A appears to be inconsistent with the existing City's Vision 2015 General Plan Circulation Element. The Circulation Element proposes the extension of Utah Street from Yosemite Boulevard to its existing termination north of Breeze Avenue. This extension would provide additional access routes, but would to bisect the proposed site leaving only a 38-acre parcel for development. The limited site would require a reconfiguration of the proposed facility, likely resulting in a multi-level building structure or a reduced on-site capacity. Any attempts to vacate the proposed roadway easement would result in severe cost increases. Additional cost and housing impacts would occur, as the project would displace dwelling units regardless of if the whole site or just the 38 acre parcel is required. Three units would be displaced as a part of the proposed project.

Alternative Site B- Breeze Avenue

Site B (Figure 2-4) is located on the western portion of the survey area. Site B is setback from Highway 59 and located on Breeze Avenue, just east of Utah Street. The site is just north of Bellevue Road. The site is approximately 59 acres and is divided into four parcels. The site is rectangular in shape and was home to agricultural and residential land uses. The largest parcel is a 24-acre farm parcel with a dwelling unit and a mobile unit on-site approximately four dwelling units occupy the entire area.

Benefits

The site provides direct access via collectors and local roadways to major arterials and transitways. Utah Street currently provides direct access to the Site B via Bellvue Road, while Breeze Avenue leads directly to Highway 59. The future extension of Utah Road would provide additional direct access to the site from the City and the future developments south of the site. In addition, the site is located outside of a flood hazard zone. Site B would provide the District with a location along the

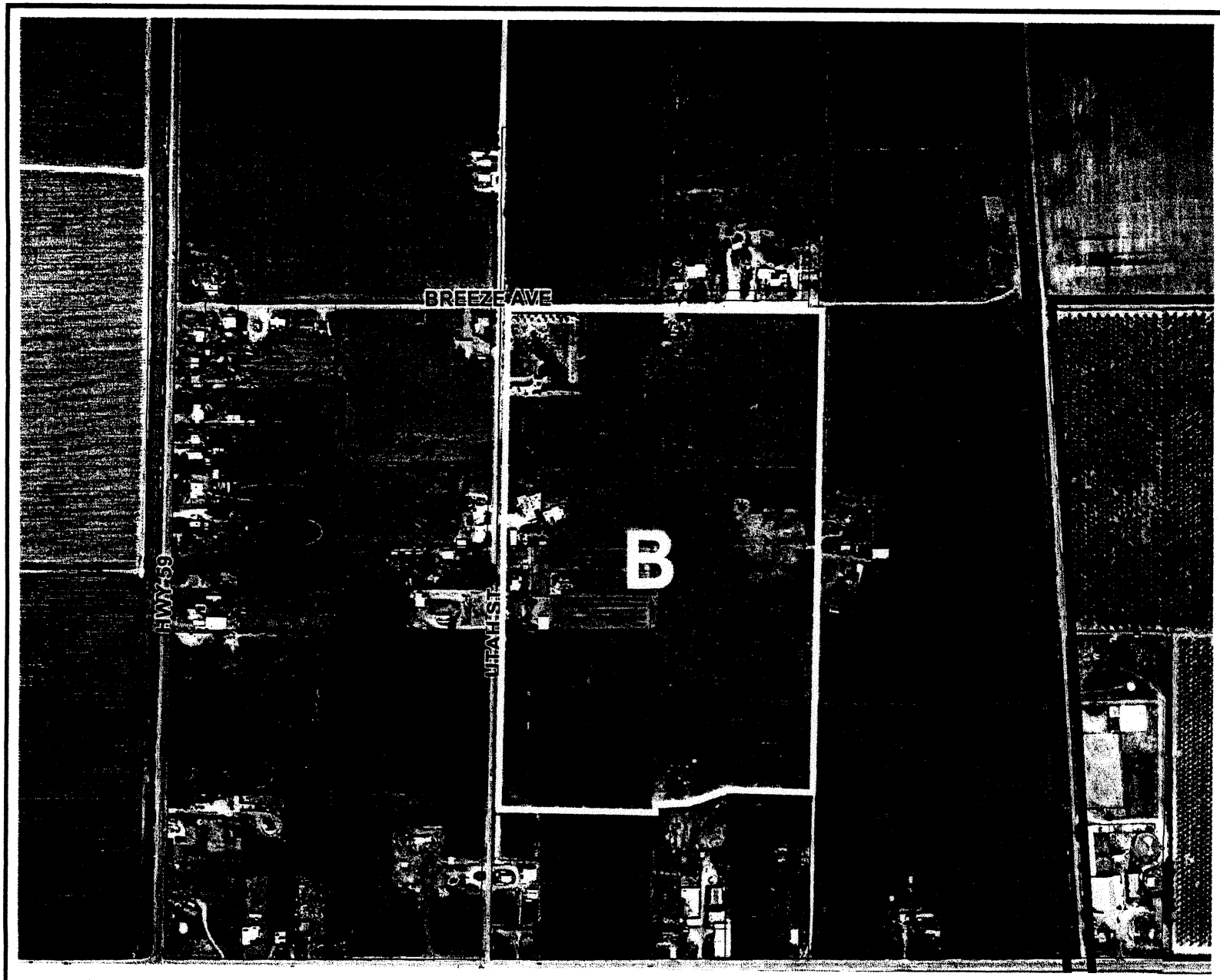

FIGURE 2-4
Site B-Breeze Avenue Alternative
Merced Union High School District
Merced County, CA

Source: Merced Data Special Services, March 9, 2005

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western edge of the City's SUDP boundary that addressed anticipated growth coming from both the south and from the east. The land use conversion would also be consistent with the City's General Plan Land Use Element with the use of the special permit. It addition there is a proposed park that is planned just south of the Site B alternative. The development of the school adjacent to the park would be compatible and consistent with the City's and County's recreation goals, as well as the City of Merced Villages Plan.

Constraints

Site B has a somewhat difficult configuration that if built out entirely would result in a site that is twice as long as it is tall. In order to avoid that occurrence, the site could be reduced to slightly less than 55 acres. The development of Site B would require in the relocation of between two to five dwelling units and residents and associated horse stables. Another costly impact could occur related to biological resources. An aerial wetlands assessment identified potential vernal pool locations within the project boundaries. A more site specific on-site wetland delineation would be required to verify the presence of the vernal pools. If such a resource was discovered on-site, additional time and costs associated with permitting and mitigation would be required. Also, City water and sewer lines do not currently extend to site and are not planned for development prior to 2008.

Alternative Site C

Site C (Figure 2-5) is more centrally located. Site C is approximately 55 acres located west of G Street and just south of Bellevue Road within the Bellevue Ranch Tentative Subdivision, which is a planned mixed use community with commercial, residential, park, school, and fire facility uses. The site is nearly square in shape and is currently being improved for development.

Approximately 575 single family homes are scheduled for development in the first phase of the Bellevue Ranch development. No dwelling units currently occupy the area. The assessment value of the site was not made available via MCAG, however due to its improved conditions and inclusion as part of the Bellevue Ranch development, it would likely be expensive in comparison to other sites under consideration.

Benefits

Site C is located in immediate proximity to residents that will generate a demand for high school facilities in the near future. Additional planned uses including regional commercial and neighborhood commercial uses would prove to be compatible with the demands of today's high school students by providing jobs, recreational areas, and entertainment facilities within walking distance of the proposed site. Site C provides direct access to major arterials and transitways (G Street or Bellevue Road) and would provide a centralized location for a school site. By locating the proposed project within the Bellevue Ranch project boundaries, Site C would achieve the MUHSD's goal of locating the school in an area of with an anticipated high demand for secondary educational facilities.

Constraints

While the location of Site C is centralized and in an area projected to yield a high concentration of students, the site remains problematic due to many physical constraints. The most prominent physical constraint is the site's location directly underneath an existing transmission easement. This

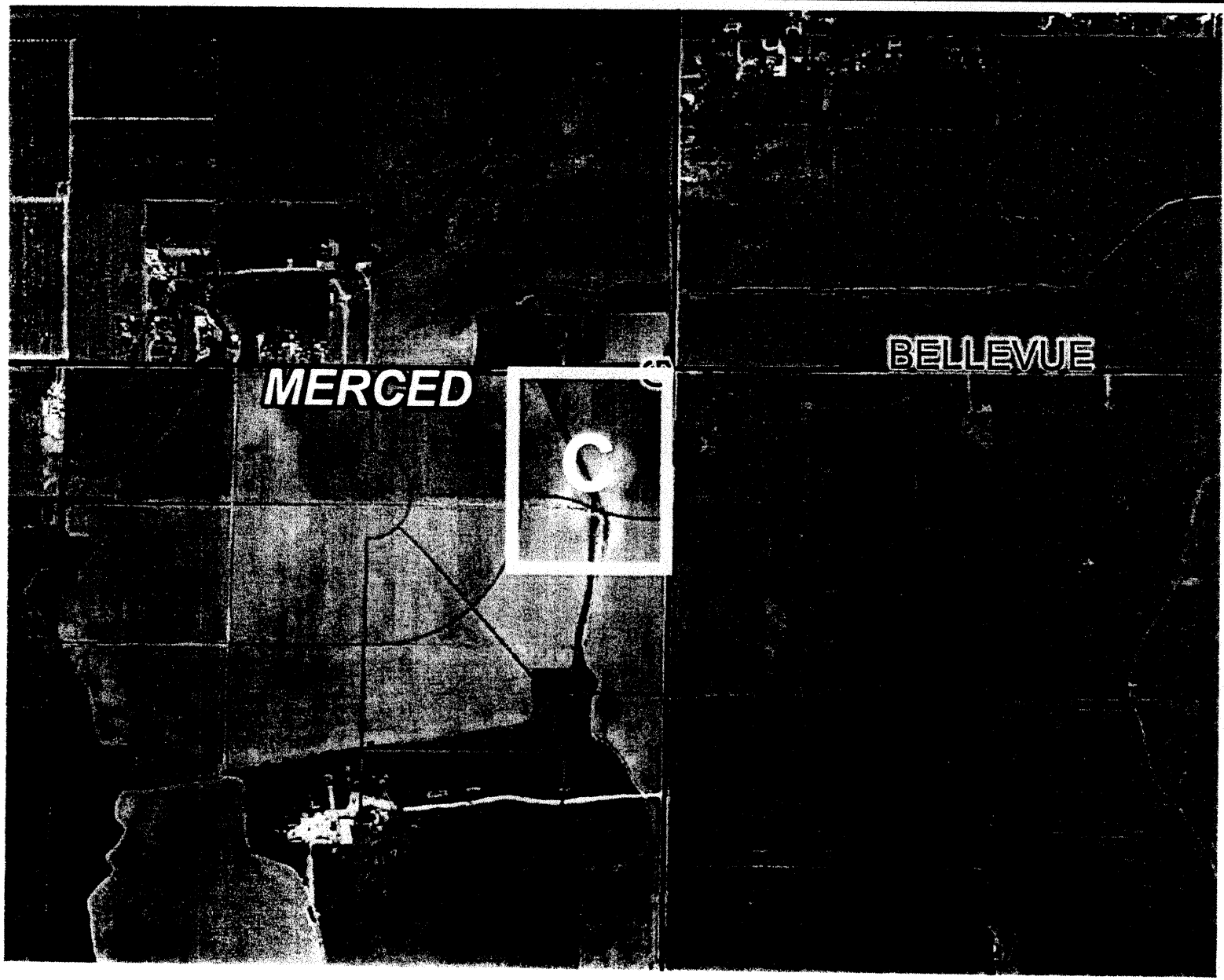

FIGURE 2-5
Site C-Bellevue Ranch Alternative
Merced Union High School District
Merced County, CA

Source: Merced Data Special Services, March 9, 2005

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impact proved to be a fatal flaw that ultimately removed the site from consideration. The site is also within a tentatively mapped area which has been designated for residential development. While the property did not appear to be graded during the site visit, acquisition of such land could be difficult due to the limited time available for purchase. Additionally the site's location near a major intersection could pose a safety hazard to students traveling to and from the proposed campus site. While the site could be setback and provide a long driveway easement, the site would be unable to avoid the safety and traffic impacts associated with Bellevue Road and G Street, two major arterials.

The site was also designated as having unique and prime farmland, which would be eliminated upon development. In addition, Site C contains soils with a moderate to high shrink-swell potential. Another significant physical impact is related to the flooding potential of the site. The site is in a 100-year flood zone and the dam inundation zone. According to the Harris and Associates Report, Site C would be subject flood levels of less than 2.58 feet as a result of dam inundation, which is below criteria levels (see Appendix Figure 4). Flood Zone A requires mandatory flood insurance. The development of a school site at this location could result in costly mitigation.

Also the presence of hazardous materials were identified in the RCRA and MTBE Data searches. A gasoline storage tank on the northern portion of the property could result in spill related impacts as well, requiring site cleanup. An appropriate site specific hazardous material assessment would be required to adequately assess the level of mitigation or remediation needed. Based on the myriad of impacts identified in the preliminary analysis and the presence of fatal flaws, Site C was not considered in the overall site selection analysis.

Alternative Site D- Lake Yosemite

Site D (Figure 2-6) is located on the Northeastern portion of the survey area just west of Lake Yosemite and is part of the recently approved Lake Yosemite Estates Project Area. The site is bounded by Golf Road on the West and Old Lake Road to the north. The site analyzed is approximately 55 acres but is within an approximately 150-acre property area. The evaluated site contains approximately eight parcels of varying sizes. The evaluated site is rectangular in shape and is home to seven existing residential lots and adjacent agricultural and residential land uses. The agricultural parcel consists of 147 acres of land currently used for grazing.

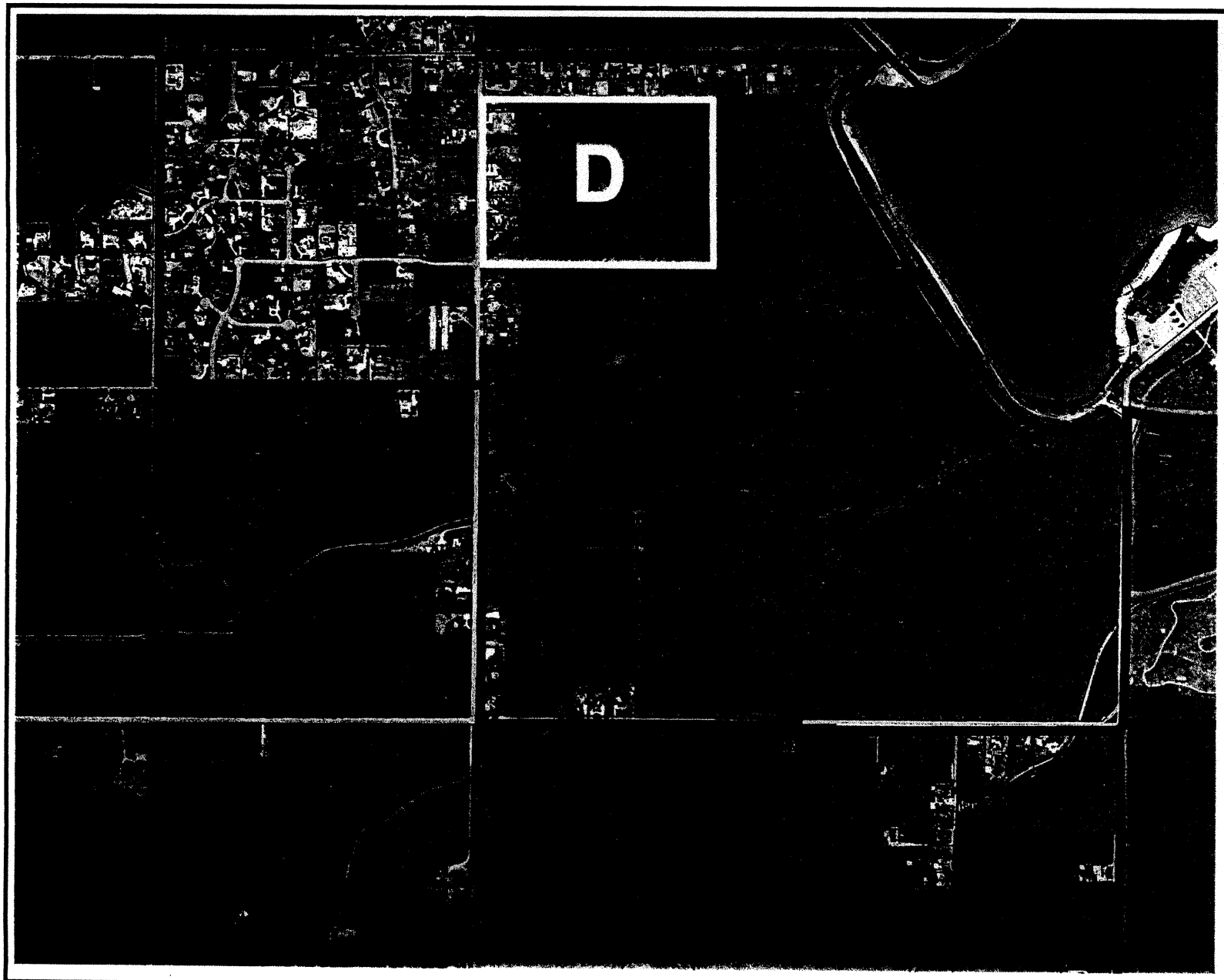
Benefits

The site's location would provide aesthetically pleasing backdrop, due to its close location to Lake Yosemite. Site D is also adjacent to an existing residential community and is a large enough parcel to handle both student and facility growth. Despite its close proximity to Lake Yosemite and the MID Main Canal, the site is outside of the dam inundation zone and is not located in a flood hazard zone. With additional residential development planned for north of Bellevue Road, Site D would provide viable option for future development of a school site.

Constraints

While Site D fulfilled many of the criteria desired by the District, the constraints definitely outweigh the positives. The majority of the site's western edge contains seven developed units.[4] The District

4 Merced Association of County Governments, MDSS GIS Layers, accessed 3/1/2005.



Source: Merced Data Special Services, March 9, 2005

FIGURE 2-6
Site D-Lake Yosemite South Alternative
Merced Union High School District
Merced County, CA

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aims to avoid the displacement of families and residential units wherever possible. In addition, the assessed land value and structure values would limit the accessibility of the site. The value of the land and structures on-site is currently assessed at a very high level due to the presence of existing homes and the surrounding developments.[5] Access to the site would be difficult as well, due to its location in the northern portion of the Study Area. The only direct access via Golf Road or Old Lake Road, two local two-lane divided streets. The site also appears to have areas with moderate to high shrink-swell potential, as well as slopes greater then 3% and 9%. Confirmation of these physical site constraints would result in impacts to project cost. A more costly impact could occur related to biological resources. An aerial delineation identified potential mima mound locations within the project boundaries. A more detailed on-site analysis would be required to verify the presence of the mima mounds. Also, City water and sewer lines do not currently extend to site are not planned for development prior to 2008.

Alternative Site E- Merced Rural Residential Center

The Site E Alternative (Figure 2-7) in the Merced Rural Residential Center (RRC) at the northeast corner of Cardella Road and Gardiner Avenue. The 55-acre site is designated as agricultural grazing land in the County General Plan and is included within an existing 120-acre parcel that lies behind the RRC homes along Lake Road. There are no developed structures located on the site.

Benefits

The site offers many of the characteristics required for a suitable high school site. First of all the site is located in a safe environment outside of the dam inundation zone and within a safe distance of the nearest high voltage transmission lines. The site is centrally located and also provides direct vehicular access via a non major arterial (Gardiner Road). With the planned development of the Cardella Road and Gardiner Road extensions, the site would be able to provide direct access from the north south east and west upon buildout of the County's Regional Transportation Plan. Students from both existing and proposed residential developments would have an equal opportunity to access the facility upon completion of planned infrastructure. This would alleviate pressure on the existing Merced High School and allow for a more even redistribution of students in the south areas, particularly those projected to live in the planned residential development in the Weaver Development Agreement Area. Site E is also located outside of the dam inundation zone, as well as the Flood Zones A and x500.

The City of Merced and County of Merced Revenue Sharing Agreement, was signed in 1997 when the County annexed areas to the City of Merced for development of the UC Merced Campus. Such a Revenue Sharing Agreement is required prior to the processing and approval of an annexation application to the City of Merced by the Merced County Local Agency Formation Commission (LAFCO). The Revenue Sharing Agreement contains provisions governing County land use within the City's Growth Area (SUDP) Sphere of Influence, and the Rural Residential Centers that exist in the vicinity of the City of Merced. Under the terms of the 1997 agreement, the County would be limited to developing residential land uses at a density no greater than one unit per net acre within the RRC.

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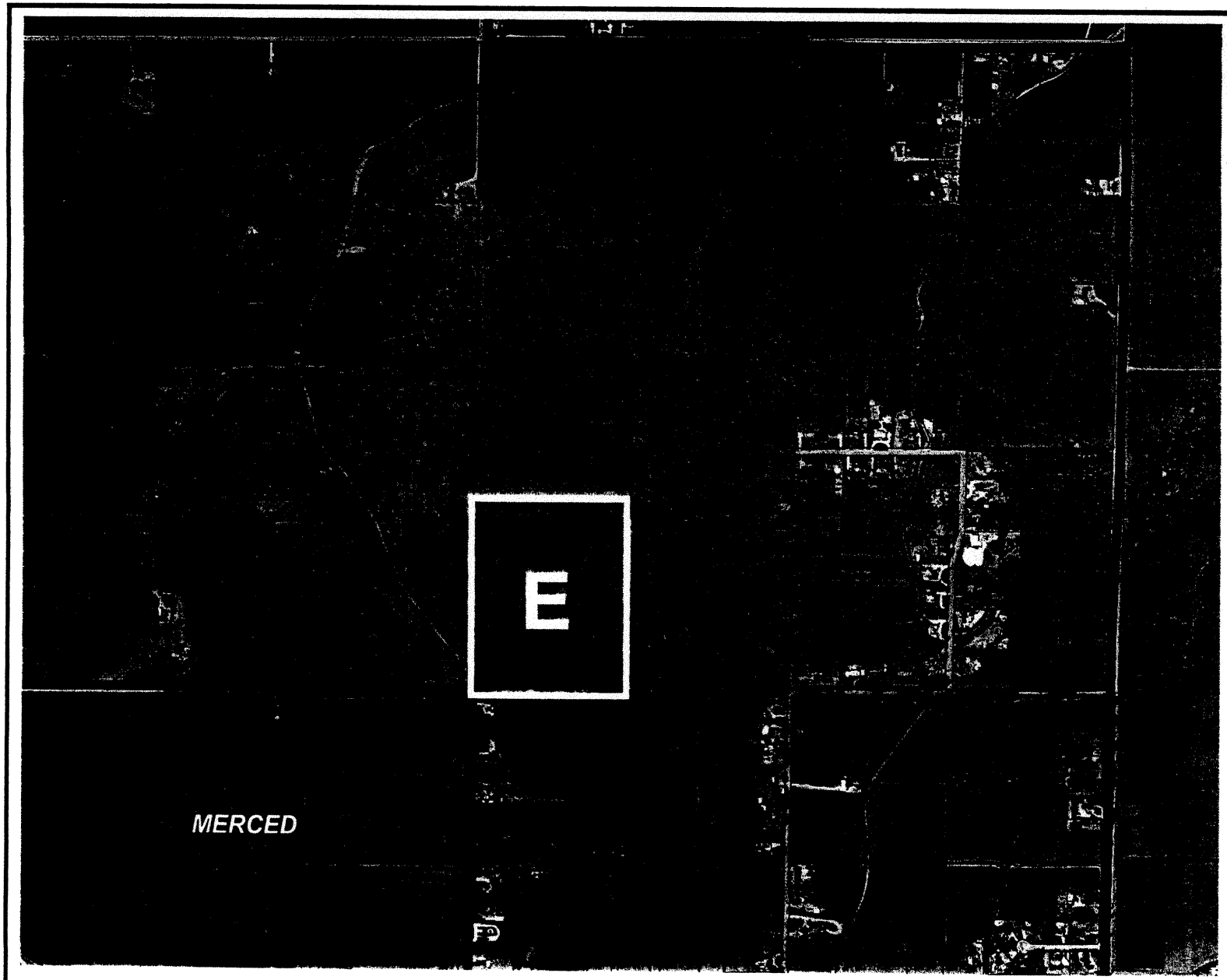
5 Merced County Association of Governments, Geosmart GIS Data layers, parcel information, http://www.mcag.cog.ca.us/, accessed March 1, 2005.



LEGEND

- City Limit Line
- Urban Growth Boundaries
- Parcels (Outline)
- Site Boundary

Source: Merced Data Special Services, March 9, 2005

FIGURE 2-7
Site E-Rural Residential Center Alternative
Merced Union High School District
Merced County, CA

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However, County zoning provisions allow a greater density and certain institutional uses, including schools. The results of the 2001 Merced County University Community Plan Policy paper provided a variety of development alternatives within the RRC area that would maintain the RRC neighborhood goals to serve as a transition between the City of Merced and the University Community while expanding the potential development opportunity. The development of school Site E would create a new community resource that would be an anchor for a unified recreational and institutional corridor that connects the City and SUDP. The development of a school at Site E would achieve the goals of the District without compromising regional goals. The site is undeveloped and has been assessed at a relatively low cost due to the lack of existing or planned development on the site.[6] Also, the amount of available land surrounding Site E would provide the District with a wide variety of configuration alternatives and development options.

Constraints

While the site appears to be a fitting location for a proposed school site, it appears that the interpretation of the County's General Plan could present obstacles to development. While the County General Plan does not specifically preclude development of a school in an area designated as RRC, one could argue, that the impending development of the UCP area, the Southeast Specific Plan, and Bellevue Ranch in combination with the proposed project could eliminate the existing rural buffer between the City's SUDP areas. Despite its close proximity to the existing residential neighborhood, Site E, like many RRC areas is partially defined by its ruralness. Site E is also located in a region that does not currently have access to existing City water or sewer services, as the area is located in the county. RRC's, traditionally, lack full urban services and often rely on septic systems and well water.

The site also contains areas with slopes greater than 3% and 9%. Aerial photo wetland assessments also identified the presence of juncus dominated wetlands and a potential vernal pool on-site. The projected cost of permitting, associated mitigation, could affect the fiscal feasibility of the site acquisition, due existing District budget constraints, if the identified wetland constraints are determined to be present.

Alternative Site F- UCP Site

Site F (Figure 2-8) is a 55-acre parcel located in the eastern portion of the study area within the UCP development area. The site identified in the figure was derived from the school site identified in the UCP Community Plan (Figure 2-1). The site was configured north of the proposed Dunn Road extension, adjacent to proposed collector in order to achieve the maximum community use, as well as limit physical impacts associated with the development process. However, the site location for the school remains conceptual and could be relocated virtually anywhere within the proposed UCP area in order to accommodate the needs of the District. The proposed Site F can currently be accessed via a private road perpendicular to Lake Road. No assessment information was available for the proposed parcel piece.

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6 Merced County Association of Governments, Geosmart GIS Data layers, parcel information, http://www.mcag.cog.ca.us/, accessed February 28, 2005.

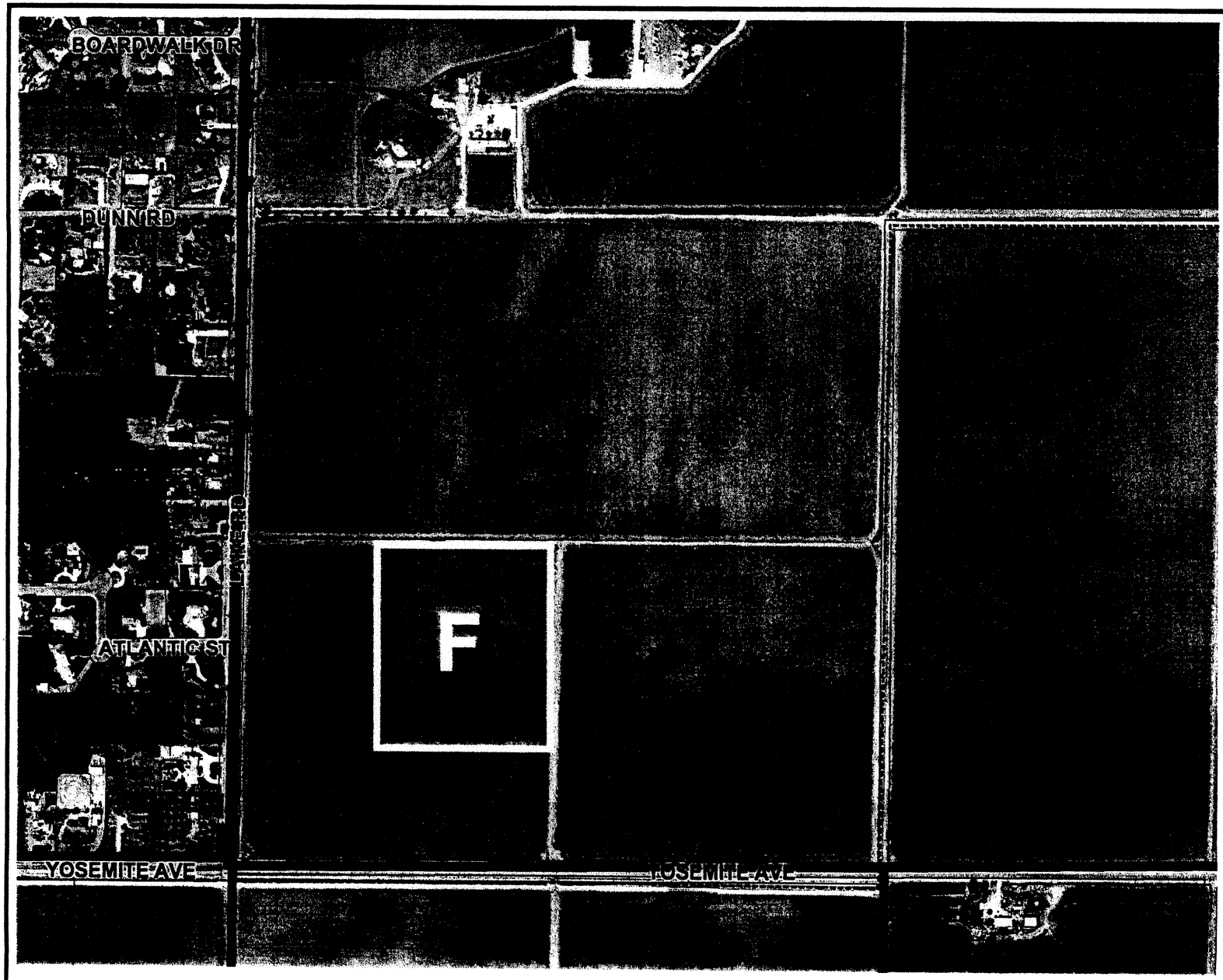

FIGURE 2-8
Site F-UCP Alternative
Merced Union High School District
Merced County, CA

Source: Merced Data Special Services, March 9, 2005

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Benefits

Site F is located within the UCP planned development which, in combination with the UC Merced Campus, could yield up to 4,300 new residents by 2010 and up to 29,000 new residents by 2030.[7] Based on this anticipated growth, Site F would provide school site that would serve District facility needs. The site would be accessible from both within and outside of the UCP area upon buildout of the Southwestern portion of the UCP. While the target population for Site F would be generated by residents within the UCP area, the proposed site could be located close enough to Yosemite Ave that students in the existing residential communities of Merced could feasibly access the site. Additionally, the development of a high school site is consistent with exist land City and County land use plans and is already included in the approved UCP plan. The proposed school site has not been graded, as no particular location within the UCP area has been designated for development. However, the Site will be located in an area with surrounding compatible land uses and adequate access to local collectors, per local standards.

Another benefit of Site F is the limited amount of physical constraints associated with the project area. The site is relatively flat and has limited shrink-swell potential. While, current City water and sewer service does not exist on-site, UCP Policies IW 1.2 and 1.8 ensure that adequate wastewater and water services will be available prior to the approval new development. Development in the UCP area is anticipated to begin prior to the 2008-2009 desired District opening. Site F is not located in or near any flood hazard or dam inundation zone. Also Aerial photo wetland assessments identified little to no wetland types within the southern portion of the UCP area. No known sensitive biological species were identified on-site as well. The site would still be subject to a site specific biological survey prior to CDE approval of site aquisition.

Constraints

While Site F is located close to North Merced, the site remains on the eastern periphery of the study area. Required infrastructure improvements including extension roads and provision of new traffic signals are not currently available. There is no guarantee that these components will be in place in the near term. The loss of prime and unique farmland would pose minor environmental impacts, as addressed in the UCP EIR. Also traffic generated by the development of the UC Merced Campus and the proposed Campus Parkway, which would extend from Highway 99 to Lake Road and Yosemite could pose impacts to the proposed Site F school site.

Alternative Site G-Old Lake Road

Site G (Figure 2-9) is derived from a location analyzed in the 2004 Facilities Plan and identified in the City of Merced Vision 2015 General Plan. The site is located in the northernmost portion of the study area on Old Lake Road, due east of G Street. The analyzed site is squarish in shape and occupies approximately 55 acres within an existing 151 acre agricultural parcel. The 55-acre site has no residential units and is currently used as agricultural land. A standing structure is located elsewhere on the property.

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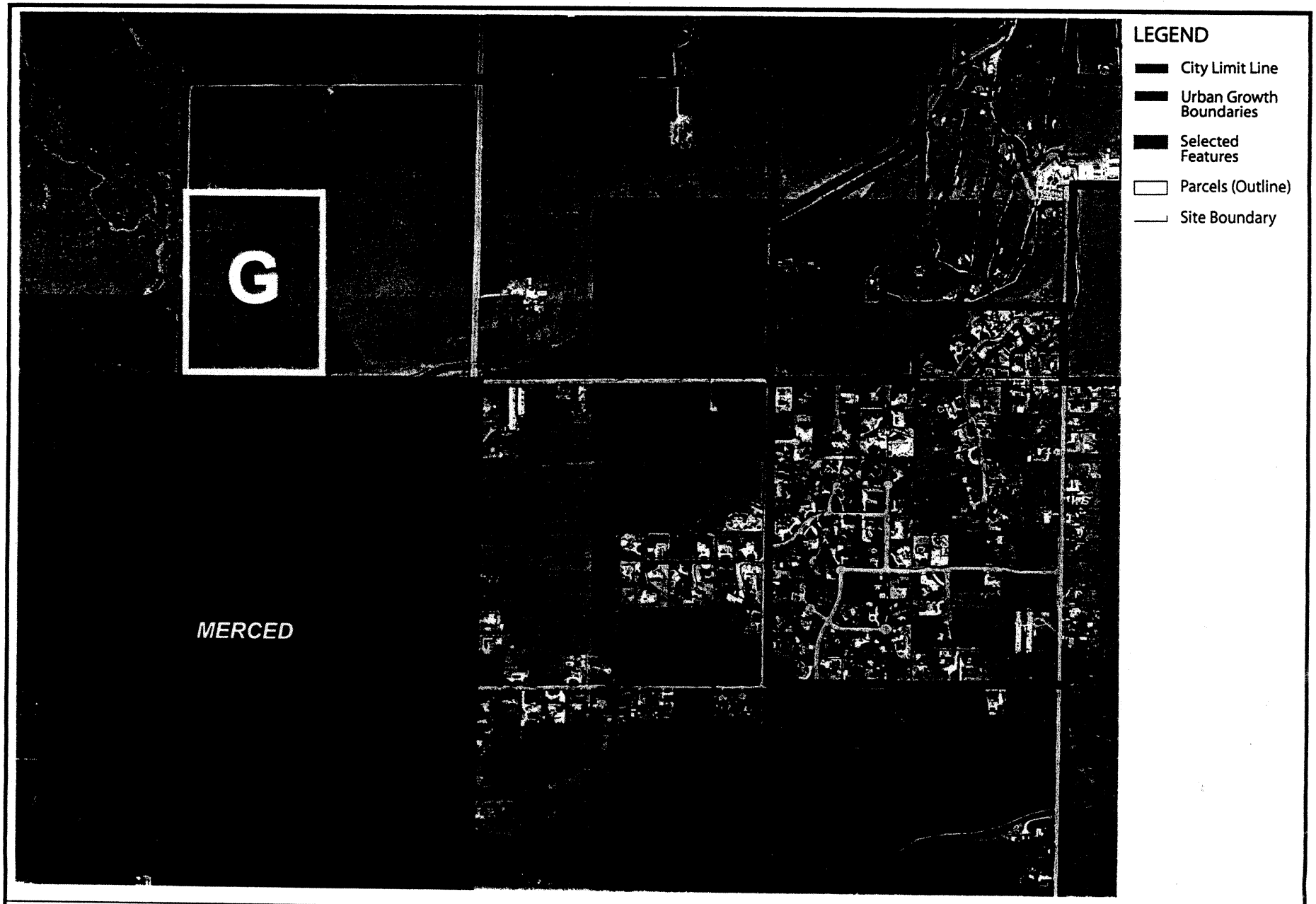
7 Merced Association of County Governments, *2004-2030 Countywide Population Projections*, http://www.mcag.cog.ca.us/DATA/COUNTY/PopProj.pdf, accessed 2/23/05.



Source: Merced Data Special Services, March 9, 2005

FIGURE 2-9
Site G-Old Lake Road Alternative
Merced Union High School District
Merced County, CA

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Benefits

The site has been identified in the City's General Plan and would be compatible with surrounding uses, including the planned recreation facility to be located north of the site and the planned residential development. Site G is located in an area where there plans to extend Old Lake Road, a planned divided road to connect with G Street, and R Street a planned major arterial to connect with the planned Old Lake Road extension. The City of Merced Vision 2015 plan to extend R Street and Old Lake would improve the accessibility of the site. The location is less than two miles north of the proposed Bellevue Ranch, where student demand will be high. Also the parcel is void of structural of development and offers configuration flexibility, due to the overall size of the available parcel. While the site is located within the dam inundation zone, the Harris and Associates Study did not anticipate flood levels exceeding three feet, which would reduce the risk of impact. In addition, the parcel is relatively inexpensive according to the most recently recorded MCAG assessment.[8]

Constraints

Site G's location makes it a less than desirable location for the development of a school in the near term and long term future of the region. When Site G was initially evaluated as a potential site, the City of Merced had identified a vision of growth that extended north, past Old Lake Road and up past Yosemite Lake to the northeast. However, recent growth trends have shown that the City plans to cap northern growth just north of Old Lake Road. Therefore, the placement of a school location at Site G would be too far north, resulting in an increased busing demand and traffic demand. Unlike most of the evaluated sites, there is no existing access to any portion of the proposed site. Like most of the available sites, Site G was formerly used for agricultural production and could require remediation in order to attain CDE approval. According to Aerial wetland analysis performed by EIP Associates, Site G may also contain vernal pools and juncas on-site. Additional on-site analysis would be required to confirm the presence of the sensitive species. The presence of these species on site could result in increased costs associated with permitting costs and mitigation implementation.

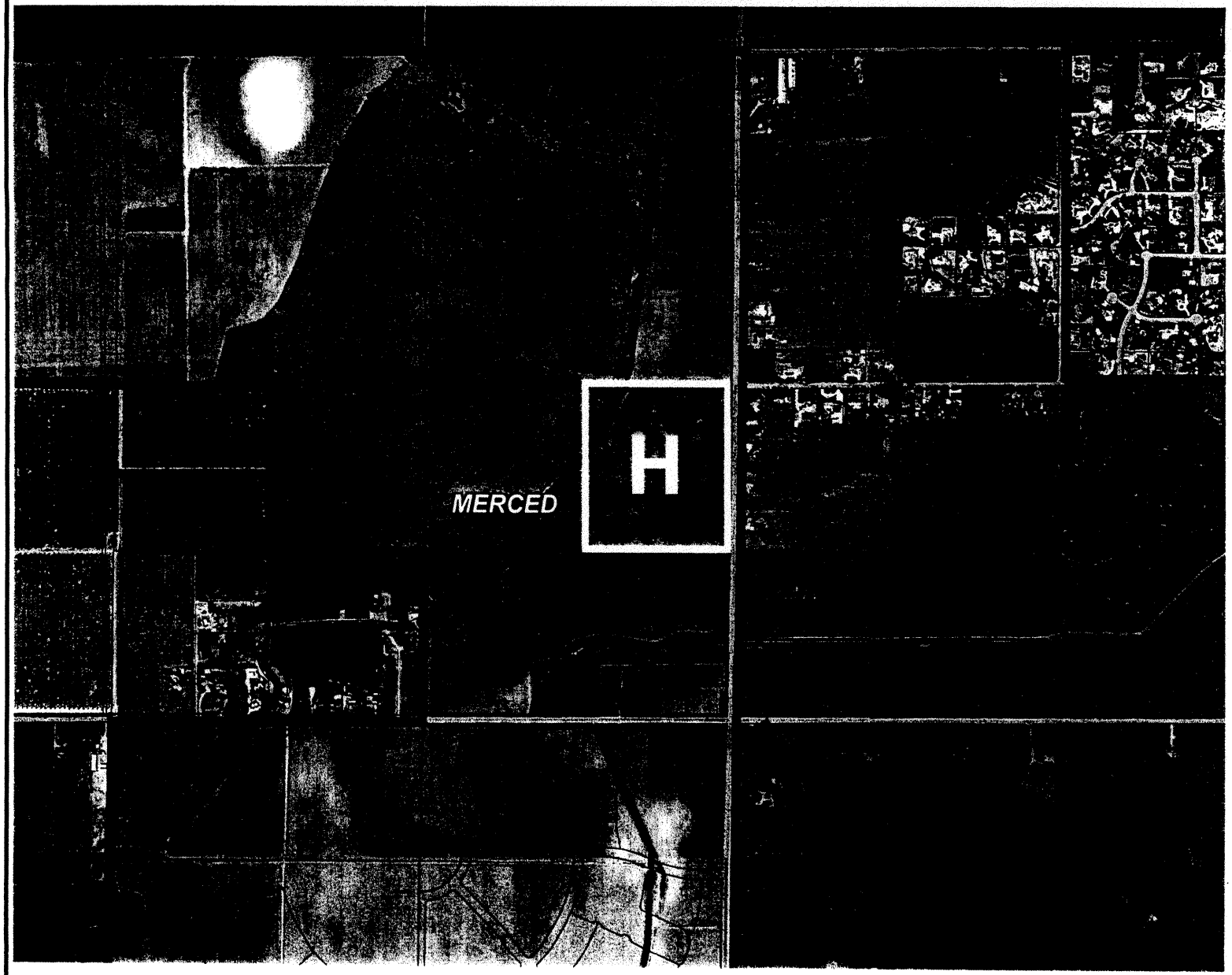
Alternative Site H- Farmland and G

Site H (Figure 2-10) was derived from the "Farmland and G" alternative presented in the 2004 Facility Master Plan. The proposed site located just north of Bellevue within the proposed Bellevue Ranch site at the southwestern corner of Farmland Road and G Street, near the center of the survey area. The site is approximately 55 acres west of G Street, one half block north of proposed Site C. The majority of the area is currently in agricultural production and does not have any structures on-site. A portion of Fahrens Creek runs through the northwest portion of the site.

Benefits

Site H is located in an area which will generate a demand for high school facilities in the near future, due to the presence of phase one of the Bellevue Ranch project to the south. The site has a planned land use designation as residential and park, which is consistent and compatible with the development of a school use with recreation fields, with the use of a conditional use permit. Site H

8 Merced County Association of Governments, Geosmart GIS Data layers, parcel information, http://www.mcag.cog.ca.us/, accessed March 4, 2005.



Source: Merced Data Special Services, March 9, 2005

FIGURE 2-10
Site H-Framland and G Alternative
Merced Union High School District
Merced County, CA

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is also accessible with direct access to a major arterial (G Street) and a local collector (Farmland Road). Site H would provide a centralized location near an existing and proposed residential community. The location would like reduce the number of bus trips associated with the Site H, as many prospective students would live within the two mile radius of the site. Site H would achieve the District's goal of locating the school in an area of with an anticipated high demand for secondary educational facilities, while relieving overloaded facilities.

In the short term, Site H lacks of existing City sewer and water infrastructure. However, there are plans in the Bellevue Ranch Specific Plan outline the development of new water sewer line connections that extend to Site H via existing lines on Bellevue Road and G Street. The site is also on level terrain and does not appear to contain any known wetland types, as none were identified during EIP's aerial photo wetland assessment The site is also accessible and currently on the market for sale at a competitive cost.

Constraints

Site H is located along the portion of G Street which is adjacent to 70kV lines. Another 230 kV line runs southwest of the proposed school campus. The CDE requires that the property line of school sites be located approximately 100 feet from transmission lines emitting 50-133 kV and 150 feet from transmission lines emitting 220-230kV. Therefore the district would be required to move their property line back or pay PG & E to move the existing transmission lines outside of the CDE facility specifications. The cost associated with this mitigation could affect the feasibility of the site acquisition. Discussions with MID and PG & E staff have reveal no plans to increase the voltage at any of the sites. However, there are discussions about the placing of a 230 kV substation southwest of the project site. This substation would be outside of the required CDE buffer zone.

Site H is designated as having active unique and prime farmlands, which would be eliminated upon development. In addition, Site H does contain soils with a moderate to high shrink-swell capacity which could increase costs associated with construction. Another significant physical impact is related to the flooding potential of the site. Site H is located in a flood hazard zone and the dam inundation zone. Flood Zone A requires mandatory flood insurance. The Harris and Associates report identified Site H as being at risk of 10 foot flood associated with a break in the Yosemite Lake Dam. Therefore, additional precautions and mitigation would need to take place prior to the development of a school site, in order to reduce the risk of flooding due to dam inundation. Measures such as elevating the school could reduce impacts, but would result in increased costs. While no wetlands were identified during EIP's aerial photo wetland assessment, an on-site constraints analysis would be required to adequately evaluate the potential for impacts to wetlands and species. The portion of the site that is divided by Fahrens Creek on the northwest yields the highest potential for the discovery of wetlands and related species.

Alternative Site I

Site I (Figure 2-11) is located south of Site C within the Bellevue Ranch Tentative Subdivision. The site is approximately 42 acres west of G Street, near the proposed extension of Cardella Road. The Site is centrally located and is approximately two miles north of Merced High School. The site was derived from a potential site identified in the Merced Vision 2015 General Plan and later in the Harris and Associates Dam Break Analysis.

No dwelling units currently occupy the area, but the site is being graded for the future development of Bellevue Ranch housing units in the near future. The assessment value of the site was not made available via MCAG, however the site would be more expensive due to its location within developable, tentatively mapped portion of Bellevue Ranch.

Benefits

Site I centrally located between the existing residential community of Merced and the projected buildout of Northern Merced. The site is located off of a major arterial and is located near public transportation and an established school community just north of Merced College. Siting of this alternative would reduce cost impacts associated with out of district busing. The current Bellevue Ranch circulation plans would accommodate the development of the 42-acre site, without altering planned design elements. The proposed extension of Cardella Road would further improve the ability of students and faculty to access the potential site. The site is compatible with the City's General Plan, which identifies the area as a floating school location. The floating school location applies to sites that been identified as having the potential for future school development. However, the District does not currently own the parcel and is not bound by its existing General Plan designation. The surrounding acreage is designated as park and residential, which are compatible uses with the proposed school use. Additionally, Site I currently has access to City water and sewer systems via G Street.

Constraints

Evaluation of Site I revealed potentially significant physical constraints. The initial constraint is related to the size of the parcel. When the parcel was first designated in the City's Vision 2015 General Plan, the state required comprehensive high schools of 2,000 students to have a minimum of 40 acres of land available for development. However current state standards require 50 acres in most development circumstances. While there are exceptions to that rule that may occur with the use of multi-level facilities, it is the desire of the District to maintain a minimum 50 acre campus size. The most prominent physical constraint preventing the acquisition of additional acreage is the site's location within a tentatively mapped area which has been designated for residential development. Upon further field review, the portions of the property appeared to be graded for the development of residential unit pads. Acquisition of such land and purchase of associated easements could result in a significant cost increase.

The site does contain soils with a moderate to high shrink-swell capacity which could add to construction cost. However the more significant impacts associated with the proposed project are related to the presence of wetland habitat. The aerial wetland assessment identified potential pool swale complex and vernal pools within the Site I project area. The site is also located in an area that has been identified by the CNDBB as having potential for Tiger Salamander. A site specific biological survey would be required to fully evaluated the level of impact associated with biological resource impacts.

Another significant physical impact is related to the flooding potential of the site. The site is located in a flood hazard zone (Zone A) and the dam inundation zone. While Site I is far enough from the

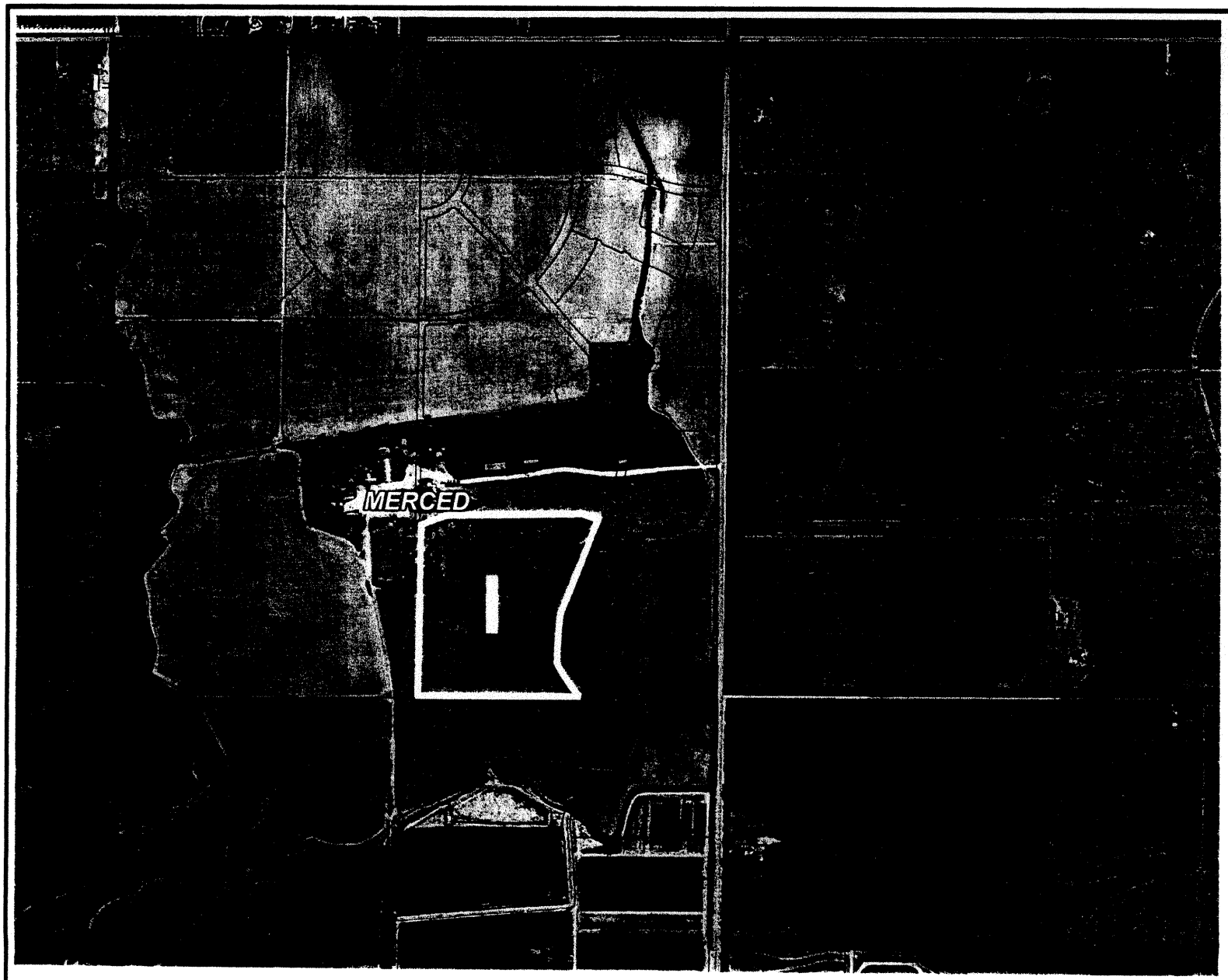

FIGURE 2-11
Site I-Cardella and G Alternative
Merced Union High School District
Merced County, CA

Source: Merced Data Special Services, March 9, 2005

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Yosemite Lake Dam to reduce dam inundation flooding potential levels below three feet,[9] Flood Zone A could still pose some level of risk and would require mandatory flood insurance.

Alternative Site J

Site J (Figure 2-12) is located on the northeastern portion of the survey area just north of Site D. The site is bounded by Old Lake Road to the south, northeast of the Golf Road and Old Lake Road intersection. The site is adjacent to the Merced Hills Golf Course and is located within the Yosemite Lake Estates project area. The site analyzed is approximately 55 acres but is within a 124-acre parcel currently used as a grazing area, just southwest of the MID Main Canal.

Benefits

The site is vacant and is in an area that is surrounded by residential development. The site is outside of the dam inundation zone and is not located in a flood hazard zone. The site is zoned RRC, which allows for the development of institutional uses, such as an on-site school with use of a conditional permit. The site is accessible via existing roadways and would provide an aesthetically pleasing learning environment for students.

Constraints

If additional residential development is planned for north of Bellevue Road as identified in the General Plan, Site J would provide a viable option for development of a high school. However, it is anticipated that growth past the existing City SUDP is not likely to occur, making Site J a less desirable option. Traffic issues would be anticipated due to the infusion of new trips coming from the south. Having a location so far north and west would cause most of the student traffic to come from the south via Golf Road, a two-lane local road. The site does not have currently have access to City water and sewer lines and there are not existing plans to provide sewer and water prior to 2008-2009.

In addition, an aerial wetland assessment of the site identified vernal pool habitat within the proposed project boundaries. The site is also located in a project area where CNDBB has identified the potential for fairy shrimp. A site specific biological survey would be required to fully assess the site's potential for sensitive biological species. The cost associated with permitting and potentially mitigating the project could negatively affect the site's feasibility.

9 Harris & Associates, *Yosemite Lake Dam Break Analysis*, November 2004.

Source: Merced Data Special Services, March 9, 2005

FIGURE 2-12
Site J-Lake Yosmite North Alternative
Merced Union High School District
Merced County, CA

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CHAPTER THREE: RECOMMENDATIONS

3. *RECOMMENDATIONS*

This chapter presents a summary of the analysis of potential school sites in North Merced and the recommendations that are a result of the analysis.

Summary of Site Evaluations

Background

A discussion of the evaluation criteria to used to determine the potential sites for both the four school alternative and the three school alternative are discussed in Chapter 2. Potential site locations were chosen based on the site's ability to achieve the basic requirements of the California Department of Education's requirements for school siting, as well as meet the goals and objectives of the District's Five Year Facility Plan. A listing of the attributes of each of the sites suggested is presented in Tables 3-3 through 3-12 at the end of the document.

Rather than providing a quantitative scoring system, the study provides a qualitative analysis based on which would most feasibly attain the goals and objective of the CDE and the MUHSD, while addressing the immediate demand for a new high schools within the North Merced area by the 2008-2009 school year. Sites were categorized as having desirable qualities (●), moderately desirable qualities (◒), or a low level of desirability (○). Using this evaluation technique, EIP Associates ranked each site based on its overall level of "desirability." Generally, it can be considered that sites which were determined to be "desirable" could be characterized as above average in overall characteristics and most suitable for further review and analysis. A matrix containing the ranking of each individual site is included in Table 3-1. However, in determining which site should be selected to be developed first, other factors including accessibility, access to services and utilities and closeness to anticipated school populations in the near term, carried a larger level of importance in the evaluation process.

The evaluation prioritizes CDE's School Site Selection criteria, incorporating issues of local concern, and near term site infrastructure needs based on MUHSD Facilities and Planning staff desires to open its first site by 2008-2009. Particular sites were eliminated from further evaluations due to the presence of "fatal flaws" which would result in site impacts that are either unmitigable or infeasible to mitigate. The site evaluations focus primarily on the critical criteria facing the Merced region. A total of 10 sites were considered for evaluation and 2 development alternatives are presented in this study.

Conclusions and Recommendations

Table 3-1 provides a summary of the evaluations of the 10 sites for each of 12 criteria. Based on the evaluations undertaken, the highest ranking sites were sites F, A, H and E. These four sites possess adequate size and configuration for construction and operation of a high school, avoid any critical "fatal flaws" that would constrain developability or state funding support, and meet the MUHSD's spatial goals for serving the long-term development in North Merced covering a geographic spread

from east-to-west and north-to-south. A summary presentation of the characteristics of the four top-ranking sites is presented in Table 3-2. Full descriptions of the evaluations of each site are presented in Tables 3-3 through 3-12.

TABLE 3-1

SUMMARY EVALUATION MATRIX

	Site A	Site B	Site C	Site D	Site E	Site F	Site G	Site H	Site I	Site J
Safety	◒	●	○*	◒	●	●	◒	○	○	●
Location	●	◒	◒	○	●	◒	○	●	●	○
Environment	●	○	●	○	○	●	○	◒	○	○
Soils	●	●	◒	●	◒	●	●	◒	◒	◒
Topography	◒	●	●	○	○	●	●	●	●	●
Size and Shape	◒	○	○	◒	●	●	●	●	◒	●
Accessibility	●	●	●	◒	●	○	○	●	◒	◒
Public Service	●	●	●	●	●	◒	○	●	●	●
Utilities	○	○	●	○	○	◒	○	◒	●	○
Cost	●	○	◒	○	◒	◒	○	◒	○	◒
Availability	◒	○	○	○	●	●	●	●	◒	○
Public Acceptance	◒	◒	◒	○	◒	◒	◒	◒	◒	◒
Overall Rank	1	6	NA*	9	4	2	8	3	5	7

Note:

● - Desirable

◒ - Moderately Desirable

○ - Less Desirable

*Site eliminated due to presence of a fatal flaw.

Source: EIP Associates, 2005.

TABLE 3-2

SELECTED SITE ATTRIBUTES

Site Selected	Attributes of Site
Site H	• Centrally located • Near needed utilities • Sufficient footprint • Vehicle access • Attainability of land • Lack of sensitive habitat or known resources • Serves demand from Bellevue Ranch housing in short-term • No known fatal flaws on site
Site A	• Provides spatial balance • Provides good access upon buildout of R Street extension • Availability of land • Can serve students in Northern Merced and areas to the west • No known fatal flaws on site • Would serve new development just south of site (Fahren Specific Plan) • No known sensitive biological resources on site
Site F	• Provides a local site for the proposed UCP development area • Sufficient footprint with planned access • No known fatal flaws on site • Proximity to Yosemite Avenue and other feeder roads • Proximity to UC Merced campus and UCP area housing • Available and affordable site • No residential displacement • No known sensitive biological resources on site
Site E	• Centrally located • Currently accessible • Area is undeveloped • Provided the most spatial balance • Footprint provides configuration flexibility • Limited traffic noise • Proximity to UC Merced Campus • No residential displacement • Compatible with existing RRC designation • No known fatal flaws on site

Source: EIP Associates, 2005

Critical Elements of the Criteria Affecting the Site Evaluation Process

In examining the results of the evaluation process, a number of important points should be noted about the analysis.

Emphasis on Major Impediments to Development

The weighting of the criteria placed a strong emphasis on those criteria which represent potential major physical obstacles to eventual development of a site, well as those factors determined to be most important by the CDE and the District. Safety criteria and spatial location (the ability to serve the future development of North Merced) were prioritized as the most "critical" issues and were used to differentiate from those sites having a similar physical characteristics. Additional criteria, categorized as "critical" included issues such as Wetlands Resources, Sensitive Biological Habitat, Flood Hazards, Geologic Hazards, Circulation and Site Access, and Water/Sewer Supply. These criteria have the greatest influence on total evaluation.

Strong Representation of Local Land Use Planning Policies

Local land use planning policies are reflected as a major theme of the evaluation. The analyses contained in this report attempt to reflect the land use goals and policies of the MUHSD Facilities Master Plan, City of Merced Vision 2015 General Plan, City Community and Specific Plans such as the Fahrens Creek Specific Plan, the Southeast Specific Plan, and the Bellevue Ranch Specific Plan where applicable, and the Merced County General Plan, the Merced County University Community Plan, the UC Merced Long Range Development Plan, as well as MCAG growth projections.

Planning Level Analysis

This evaluation is intended to serve as a planning exercise to assist in the identification of sites for additional study in the future. The evaluation is based primarily on existing data, rather than site specific field studies. Therefore, the analysis described in this report does not supplant the type of detailed, site-specific studies to be undertaken during the due diligence process required prior to site acquisition, or which would be presented to the CDE, DTSC, DF&G or OPR for further evaluation of the presence of hazardous materials or sensitive resources. Rather, this study provides only a recommendation based on known, publicly available information. The status of the recommended sites are subject to changes that may impact their future viability. Site-specific due diligence and CEQA documentation with accompanying technical reports, along with the associated technical studies required for CDE and the DTSC approval, would still be required prior to development of the site.

Projected Future Growth

According to the District's Facility Master Plan, the MUHSD high schools that serve the Central and Northern Merced areas (Merced High and Golden Valley) will exceed their capacity by approximately 732 students by 2008 and 910 students by 2009. By 2013 Merced High is anticipated to have an enrollment of approximately 3,300 students, while Golden Valley would reach approximately 3,200

students.[1] The rapid growth in the City of Merced is related to the existing and proposed new residential developments in North Merced and the unincorporated county (Bellevue Ranch, Fahrens Creek Specific Plan, Southeast Specific Plan, etc.). New homes are being developed west of R Street and north of Yosemite, in the RRC north of Las Lomas and west of Lake Road, and East of G Street, between Cardella Road and Bellevue Road. By 2013, enrollment in the traditional high school programs in the City of Merced is anticipated to increase by approximately 2,700 students over today's numbers, which could require the development of one 3,000 student school or two smaller schools.

In order to maintain the existing school facilities at below capacity and reach the District's enrollment goal of 1,800 to 2,000 students, MUHSD plans on opening a new high school site the 2008-2009 school year with on-site capacity for 2,000 and portable capacity for 2,500. The District plans on opening future sites, but does not currently have a specific date planned for the opening of future schools. Therefore this study primarily focuses on the location of the first new school, while identifying future opportunities. By 2025 MCAG estimates that the population of City of Merced, in combination with the population of the UC Campus and associated community, will result in a population of approximately 128,500 by 2025. This is would represent a near 89 percent increase in local population. However growth is also occurring in the southeastern portion of the City as well. Currently Golden Valley is the closest neighborhood high school for residents in the southeast. While there is an anticipated demand for multiple schools in the north, it is possible that the southeast portion of the City, more specifically the Weaver Development Plan Area may require an additional high school as well.

Other Long Term Planning and Development Considerations

It is important to note that land use and development patterns in the North Merced area are dynamic, and with the impending opening of the UC Merced campus in fall 2005, the recent adoption of the Merced County University Community Plan, the recent start of development in the Bellevue Ranch site, the current processing of a variety of other development projects in North Merced, and other land development considerations, there is considerable uncertainty surrounding the ultimate future development pattern in the North Merced area. This uncertainty is reflected by and should be resolved by the City of Merced's recent initiation of an update of the City of Merced General Plan.

With that said, it is certain that long-term development patterns that are currently reflected in the City General Plan, and which were established more than a decade ago in Merced's "How Should We Grow" study, may be reconsidered. That study resulted in a consensus for northerly growth of the City along the Snelling Road/La Paloma Road corridor; the current City of Merced 2015 General Plan represents a first step in a northerly growth pattern. A number of factors may cause a reconsideration of this long-term growth pattern, including:

- Increased awareness of the environmental sensitivity of lands to the north and northeast of the City;
- Regulatory constraints associated with development of those lands;
- The closure and reuse of Castle Airport has altered the noise patterns and reduced constraints to development of lands west of Highway 59;

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1 Michael Paoli & Associates, Development Fee Justification Study, June 11, 2004, pages D-5 and D-6.

- The plans for the Campus Parkway along the eastern edge of the City of Merced could, in the long term, provide the opportunity for additional development in east and southeast Merced;
- The potential annexation by the City of the University Community; and
- The potential for increased density of land uses in the Merced Rural Residential Center, especially along the Bellevue Road corridor.

Factors such as these may cause a reconsideration of the long-term direction of growth of the City of Merced.

Four Site Alternative Recommendation

The Four Site Alternative (see Figure 3-1) would allow the District the most flexibility in addressing the potential future enrollment in North Merced. If current City population-to-student ratios continue to exist into the future, the student enrollment within the MUHSD could reach 20,732 by 2025. This would result in an increase of approximately 11,694 students within the Merced area. Under this scenario, the development of four school sites would be necessary to maintain MUHSD campus populations at a level of 2,500 or below and would be located so as to effectively serve growth guided by the City of Merced's General Plan, as well as the University Community Plan. Should another site be selected within the Weaver Development Area in addition to the four proposed northern school sites, existing and prospective schools would have projected enrollment at 2,000 students or less.

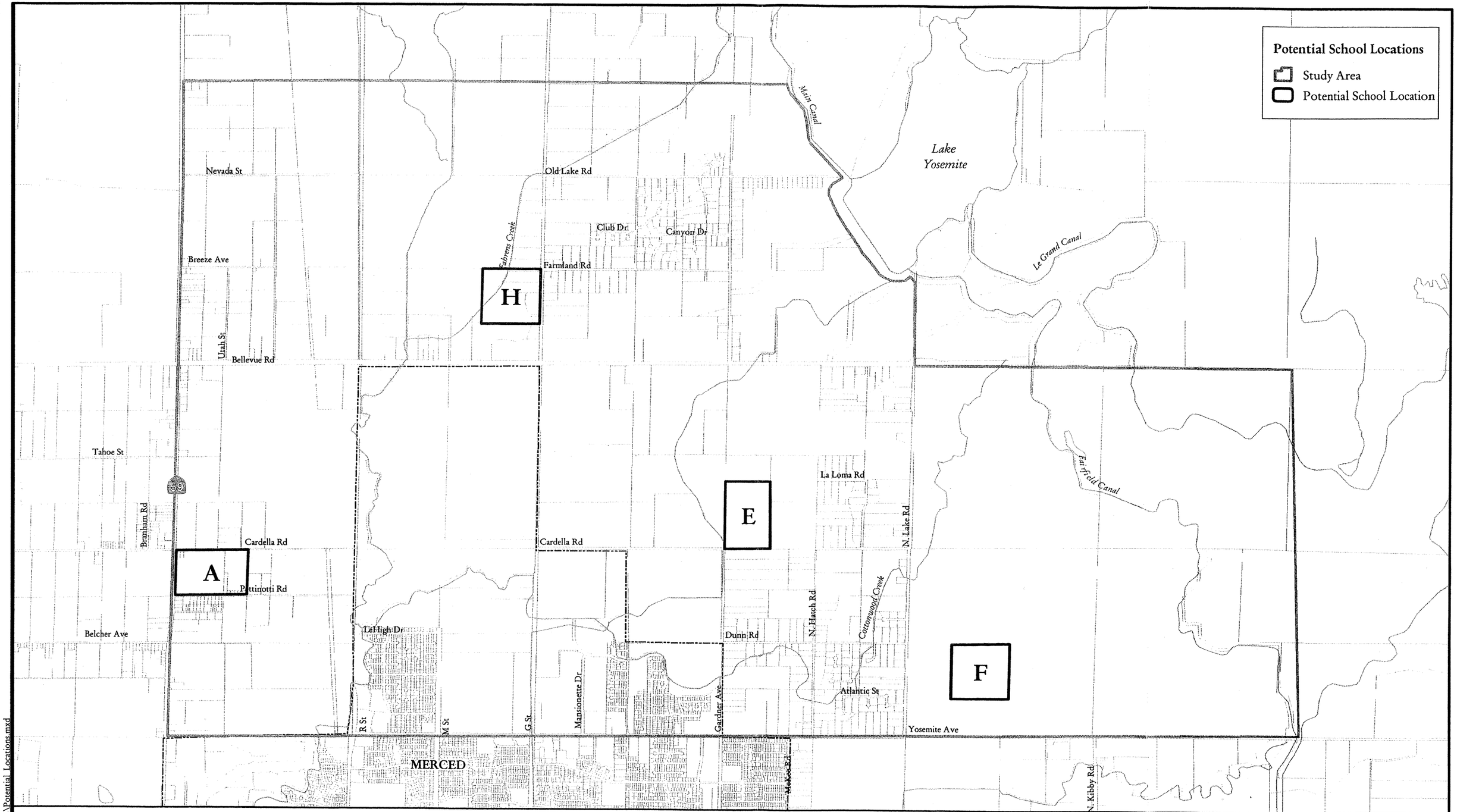
Methodology

The first step in the site selection process was the determining a list of priority sites based on the State's evaluation criteria. In order to provide equal site distribution, EIP incorporated the spatial balance component to our evaluation criteria. Thus, rather than select the top four sites in isolation, we divided the study area into quadrants and ranked based on its regional value. It is the District's goal to spatially locate schools approximately two or more miles away from each other. Based on information regarding existing and planned future residential land uses in the North Merced area, four potential sites were identified. These four sites would serve future regional growth while providing relief from existing overcrowding at Merced High and Golden Valley High. Using the analysis of the potential constraints described in Chapter 2 and criteria rankings and standards (see Table 2-1) the following four sites were recommend for inclusion in this alternative: Site A (56-acre footprint), Site E, Site F (at a location to be determined within the UCP area), and Site H. A summary of the positive attributes associated with the four selected sites are included in Table 3-2.

Sites Selected

Site A

Site A was determined to be an ideal site due to its ability to serve both existing and future needs. The Site is located just two blocks north of new tracked single family housing that is between R Street and Highway 59 and extends north to Belcher Avenue. The completion of the residential development would likely result in the extension water and sewer service to the area in the near future. Under the four school scenario, the District would have the option of developing the 56-acre site; this would involve altering the planned future extension of Utah Street presented in the Merced Vision 2015 General Plan. However, should the District choose to comply with the proposed future roadway



Source: City of Merced Dept. of Planning, Growth Activity, Oct. 2004; US Census Bureau, City Boundaries, July, 2000, Local Streets, TIGER 2K line, July, 2002; USGS, Hydrography, Dec. 1998, DEMs, Atwater, Merced, Planada, 1996; and EIP Associates, Project Boundary, Feb. 23, 2005, and GIS Program, March 16, 2005.

FIGURE 3-1
FOUR SITE ALTERNATIVE

Merced Union High School District
Merced County, CA

0 2,500
Feet
1 inch equals 2,500 feet

EIP

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construction, the remaining 38 acres would be a sufficient size to develop a multi level comprehensive high school facility, without limiting student access to on-site educational and recreational resources. The proposed Utah Street extension would provide increased accessibility whether the proposed 56-acre campus bisects the collector or whether the street runs parallel to the 38-acre site. Only two residences would be displaced under the 56-acre scenario and one residence would be displaced under the 38-acre scenario.

Site E

Site E was selected due to it centrality and lack of impact on existing agricultural production or residential development. It also proved to be the only viable site available within its spatial quadrant. The site is clear of residential structures and very accessible. There is a current two lane access available via Gardiner and planned future access available via Cardella Road. While the site is located in the County's RRC region, the site is adjacent to newer residential development to the south. Southwest of Site E is the Woodside Homes development and to the south and east are rural residential homes. While, there is a possibility that sensitive resources and habitat may be present on site, the type of wetlands involved should make permitting and mitigation of wetlands and natural resources cost effective relative to other environmental characteristics of sites elsewhere in North Merced. Therefore, Site E was determined to be a viable site for future development.

Site F

Site F was the easiest site to identify in the evaluation process due to its location and availability. Site F is located within the planned UCP area and was designated with a general location of south of the extension of Dunn Road. However, the location of the site will be determined in the future through the development of specific plans for the UCP area; the District can and should participate in that specific planning process in order ensure the selection of a high school site that provides an effective spatial balance in relation to other school sites in North Merced. The entire UCP area is an undeveloped agricultural area with few areas with a potential for impact. Therefore, this study suggests that Site F be evaluated at a location further to the east, in order to provide a better spatial balance and provide a equal level of access for citizens within the UCP area. While no access, water or sewer exist in the UCP, it is anticipated that adequate infrastructure improvements will occur on-site prior to the development of the proposed school site.

Site H

Despite not being ranked the top potential site based on the evaluation criteria, Site H was selected as the proposed first school site. Site H was designated as the first school based on it central location, existing accessibility, and based on the feasibility of the site acquisition. The site footprint fits the Districts size criteria as well as the access criteria. The District currently has options on the proposed site, which would provide a central location at a relatively affordable price. Site H is located off of Farmland Road and G Street, just over three miles north of Merced High School, making it an ideal first site. Also the site is within two miles of both the existing RRC homes off of Golf Road, Old Lake Road, and Farmland Road, as well as the planned development within the Bellevue Ranch Tentative Map Area. The major concerns facing the development of the Site H are access to water and sewer, location within the flood plain/dam inundation zone, and its location adjacent to 70 kV and 230 kV transmission lines.

The major constraints appear to be mitigable based on discussion with District staff and technical consultants. While there is currently no access to water and sewer at the proposed project site, the site is located just north of the main lines at Bellevue Road and G Street. It is feasible that the District could annex water and sewer services prior to the proposed development date of 2008-2009 via a G Street. In addition, impacts associated with flooding due to a break or failure in the Yosemite Lake Dam could be reduced to a less-than-significant level by raising approximately 11 acres of the site by five feet.[2] While flooding could still occur, flood levels would not be anticipated to exceed three feet upon the implementation of mitigation measures proposed by Harris and Associates. However, Site H would still require flood insurance due to its location within a Flood Zone A. Regarding impacts associated with the transmission line locations, the design of Site H could be shifted west or provided an increased property line setback in order to maintain the required 100 to 350 foot buffer for 70 kV and 230 kV lines. Another option would be for the District to pay the cost for moving the 70 kV transmission lines across G Street.[3]

Site H, in combination with sites A, E, and F would provide a relatively equidistant coverage of the North Merced area, which would limit the bussing transportation impact associated with the development of new schools in a growing area.

Three Site Alternative Recommendation

Should growth rates begin to level out or at a minimum begin to be distributed at a more even rate, it may be advantageous for the District to select three sites rather than four. Based on known future development in the southeastern portion of the City (Weaver Development Area), it could be predicted that the distribution of students be more equally balanced between the northern and the southern portion of the City. The selection of three potential school sites would be desirable under such a scenario. This scenario would allocate additional funds for the study additional school sites in the southeastern area. The three school approach, with future development in the southeast would address the anticipated growth of throughout the entire City and would reduce the number bus trips coming from the southern residences to the newer northern campuses. Also the three site scenario reduces the potential of have two schools with overlapping attendance boundaries or having two schools located within a close proximity by avoiding cluster development. With northern development expected to cap at Old Lake Road, the three school alternative may prove to be the most adequate alternative.

The top three overall sites as identified in the criteria ranking provide the District with the most feasibility while providing a spatial balanced distribution of potential students. Ironically, those same top three sites are spread in a relatively even manner across the Northern Merced Area. Based our criteria ranking system the recommended sites consist of Sites A, F, and H, with Site H being developed first (see Figure 3-2). However, a premium was placed on facility size in this evaluation due to the reduced number of facilities presented in this alternative. Therefore, Site A would require a minimum of 56-acres under this scenario, in order to accommodate the anticipated increased student demand of the northern region. Each of the sites selected under this alternative need to have the ability to handle rapid growth on-site, based on the known trends in the region.

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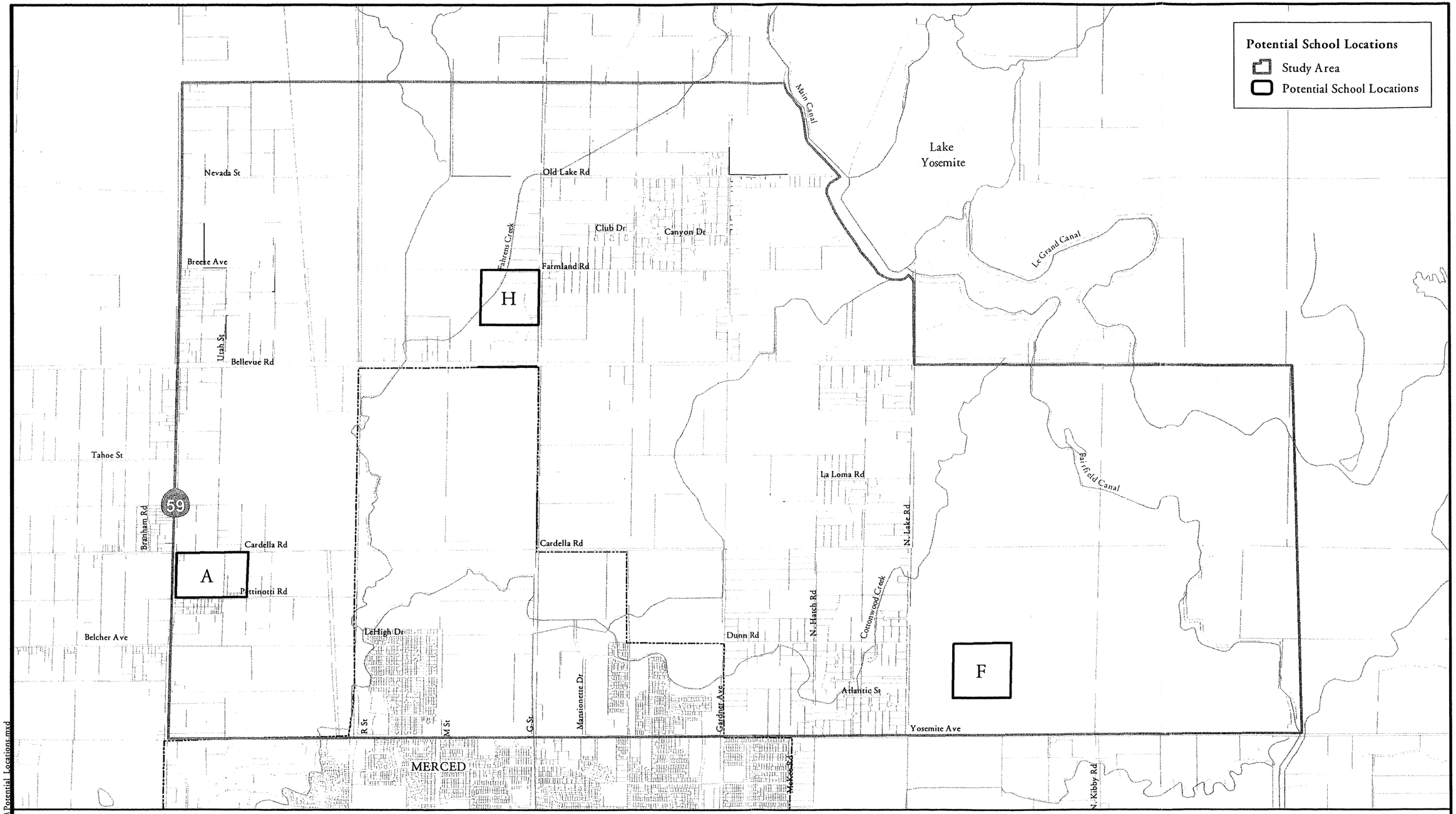
2 Harnley, Rick, Harris and Associates, written communication, March 9, 2005.

3 Belloumini, Michael, Merced Unified High School District, personal communication, March 14, 2005.



Source: City of Merced Dept. of Planning, Growth Activity, Oct. 2004; US Census Bureau, City Boundaries, July, 2000, Local Streets, TIGER 2K line, July, 2002; USGS, Hydrography, Dec. 1998, DEMs, Atwater, Merced, Planada, 1996; and EIP Associates, Project Boundary, Feb. 23, 2005, and GIS Program, March 9, 2005.

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FIGURE 3-2
THREE SCHOOL ALTERNATIVE

Merced Union High School District
Merced County, CA

0 2,500
Feet
1 inch equals 2,500 feet

EIP ASSOCIATES

Future Actions

Due to the recent changes occurring in the development landscape of Merced it is imperative that the District become active in the overall regional planning process upon determination of a growth strategy. In particular, it is recommended that MUHSD actively participate in the upcoming City of Merced General Plan Update, the development of specific plans in the University Community Plan area, and the entitlement and associated environmental documentation for major developments in the North Merced area.

If feasible, it is recommended that the District acquire control of as many of the proposed sites as possible within the selected alternative scenario. Whether the three school alternative or the four school alternative is selected, it is recommended that the District approach City Staff and County staff with the prospective sites, as determined by Board action. By doing so, the District will be able to ensure that forthcoming planning documents include appropriate information regarding District desired sites. By providing information regarding the District's intent to acquire the said properties, it will be ensured that the proposed sites and the surrounding development will be planned with District's interest taken into account. The District is also encouraged to incorporate the findings of the Board into the subsequent Facilities Master Plan.

TABLE 3-3

SITE A EVALUATION

Evaluation Criteria	Area of Potential Conflict	Level of Desirability
Safety	• Noise from Highway 59 • Located adjacent to transport corridor to landfill	Moderate
Location	N/A	Desirable
Environment	N/A	Desirable
Soils	N/A	Desirable
Topography	• Relatively flat but small area of site contains slopes greater that 3%	Moderate
Size and Shape	• Site could be bisected by future extension of Utah Street, thus reducing site size	Moderate
Accessibility	N/A	Desirable
Public Services	N/A	Desirable
Utilities	• Water and sewer lines do not currently extend to site	Low
Cost	• Could result in the displacement of 2 to 5 dwelling units	Desirable
Availability	N/A	Moderate
Public Acceptance	• Traffic volume concerns along Highway 59	Moderate

Source: EIP Associates, 2005.

TABLE 3-4

SITE B EVALUATION

Evaluation Criteria	Area of Potential Conflict	Level of Desirability
Safety	N/A	Desirable
Location	• Could displace dwelling units and stables	Low
Environment	• Loss of Unique Farmland • Small portion of area contain vernal pools	Low
Soils	N/A	Desirable
Topography	N/A	Desirable
Size and Shape	• Configuration would split parcels abut residences to the south	Low
Accessibility	N/A	Desirable
Public Services	N/A	Desirable
Utilities	• Water and sewer lines do not currently extend to site	Low
Cost	• Could result in the loss of four dwelling units • Clean up of agricultural uses and active farm uses • Vernal Pool mitigation cost	Low
Availability	N/A	Low
Public Acceptance	• Traffic volume along Breeze Avenue	Moderate

Source: EIP Associates, 2005.

TABLE 3-5

SITE C EVALUATION

Evaluation Criteria	Area of Potential Conflict	Level of Desirability
Safety	• Location in dam inundation zone • Location in 500 year floodplain • Gas storage tanks identified near site • Transmission lines run through site	Low
Location	• Heavy traffic at G Street and Bellvue Road	Moderate
Environment	N/A	Desirable
Soils	• Soils have been identified as having a moderate to high shrink-swell capacity • Most of soils are considered Prime and Unique	Moderate
Topography	N/A	Desirable
Size and Shape	• Area has been tentatively mapped, could contain restrictive easements	Low
Accessibility	N/A	Desirable
Public Services	N/A	Desirable
Utilities	N/A	Desirable
Cost	• Would require purchase of multiple easements within a newly developing community	Low
Availability	• Area is within a tentatively mapped area and would require immediate acquisition	Low
Public Acceptance	• Traffic and power lines	Low

Source: EIP Associates, 2005.

TABLE 3-6

SITE D EVALUATION

Evaluation Criteria	Area of Potential Conflict	Level of Desirability
Safety	• Partly within dam inundation zone	Moderate
Location	• Site located in northernmost portion of region	Low
Environment	• Potential presence of Mima Mounds	Low
Soils	N/A	Desirable
Topography	• Presence of slopes greater than 3% and 9%	Low
Size and Shape	N/A	Desirable
Accessibility	• Access limited to two lane roads	Moderate
Public Services	N/A	Desirable
Utilities	• City water and sewer lines do not currently extend to site	Low
Cost	• Could result in the loss of seven dwelling units • High property value due to location	Low
Availability	N/A	Low
Public Acceptance	• Site is close to Lake Yosemite • Would result in loss of large lot homes • Mitigation concerns	Low

Source: EIP Associates, 2005.

TABLE 3-7

SITE E EVALUATION

Evaluation Criteria	Area of Potential Conflict	Level of Desirability
Safety	N/A	Desirable
Location	N/A	Desirable
Environment	• Loss of Unique Farmland • Small portion of area contain vernal pools and juncos wetland formations • Potential presence of Colusa Grass	Low
Soils	• Area has moderate to high shrink-swell capacity	Moderate
Topography	• Some slopes greater than 3% and 9%	Low
Size and Shape	N/A	Desirable
Accessibility	N/A	Desireable
Public Services	N/A	Desirable
Utilities	• Water and sewer lines do not currently extend to site	Low
Cost	• Agricultural clean-up, permitting and mitigation will increase costs	Moderate
Availability	N/A	Desirable
Public Acceptance	• Traffic volume • Wetland mitigation concerns • Could conflict with County land use compatibility	Moderate

Source: EIP Associates, 2005.

TABLE 3-8

SITE F EVALUATION

Evaluation Criteria	Area of Potential Conflict	Level of Desirability
Safety	N/A	Desirable
Location	• Currently no City street access	Moderate
Environment	N/A	Desirable
Soils	N/A	Desirable
Topography	N/A	Desirable
Size and Shape	N/A	Desirable
Accessibility	N/A	Low
Public Services	• City service access limited to driveway	Moderate
Utilities	• Water and sewer lines do not currently extend to site • Utility lines will be available by 2008-2009	Moderate
Cost	• Agricultural clean up will increase costs	Moderate
Availability	N/A	Desirable
Public Acceptance	• Traffic volume	Moderate

Source: EIP Associates, 2005.

TABLE 3-9

SITE G EVALUATION

Evaluation Criteria	Area of Potential Conflict	Level of Desirability
Safety	• Partially located within the Dam inundation zone	Moderate
Location	• Located at the northern most point of the Study Area • No access available to the site	Low
Environment	• Small portion of area could contain vernal pools and juncos wetland formatting	Low
Soils	N/A	Desirable
Topography	N/A	Desirable
Size and Shape	N/A	Desirable
Accessibility	• No access available to the site	Low
Public Services	• No access available to the site	Low
Utilities	• Water and sewer lines do not currently extend to site	Low
Cost	• Agricultural permitting and mitigation will increase costs • Need to assist in constructing access to proposed site	Low
Availability	N/A	Desirable
Public Acceptance	• Lack of access • Habitat mitigation	Moderate

Source: EIP Associates, 2005.

TABLE 3-10

SITE H EVALUATION

Evaluation Criteria	Area of Potential Conflict	Level of Desirability
Safety	• Located within dam inundation zone • Located within 100 year and 500 year floodplain • Located near 70 kV powerlines and 230 kV powerlines	Low
Location	N/A	Desirable
Environment	• Loss of Prime and Unique Farmland • Creek runs through northwest portion of the site	Moderate
Soils	• Area could contain some soils with moderate to high shrink-swell capacity	Moderate
Topography	N/A	Desirable
Size and Shape	N/A	Desirable
Accessibility	N/A	Desirable
Public Services	N/A	Desirable
Utilities	• Water and sewer lines do not currently extend to site • Extension of utilities expected by 2008-2009	Moderate
Cost	• Increased cost associated with elevating the school site • Increased cost based on location within Bellevue Ranch • Cost associated with moving power lines	Moderate
Availability	N/A	Desirable
Public Acceptance	• Traffic volume • Power lines	Moderate

Source: EIP Associates, 2005.

TABLE 3-11

SITE I EVALUATION

Evaluation Criteria	Area of potential conflict	Level of Desirability
Safety	• Located within dam inundation zone • Located within 100 year floodplain • Located within close proximity of 110 kV transmission lines	Low
Location	N/A	Desirable
Environment	• Potential for Pool Swale Complex or Vernal pools • Potential for Tiger Salamander Habitat	Low
Soils	• Area could contain soils with moderate to high shrink-swell capacity	Moderate
Topography	N/A	Desirable
Size and Shape	• Available parcel only 42 acres	Moderate
Accessibility	• No formal access to site • Pads exist wit temporary driveway	Moderate
Public Services	N/A	Desirable
Utilities	N/A	Desirable
Cost	• Planned homes could be displaced • Strong potential for mitigation costs	Low
Availability	• Included as a part of an existing Tentative Map and could be developed as residential	Moderate
Public Acceptance	• Traffic volume	Moderate

Source: EIP Associates, 2005.

TABLE 3-12

SITE J EVALUATION

Evaluation Criteria	Area of potential conflict	Level of Desirability
Safety	N/A	Desirable
Location	• Site located in northernmost portion of study area • Limited access (two-lane local road)	Low
Environment	• Potential for vernal pools • Potential for fairy shrimp	Low
Soils	N/A	Moderate
Topography	N/A	Desirable
Size and Shape	N/A	Desirable
Accessibility	Only site access is via two lane road	Moderate
Public Services	N/A	Desirable
Utilities	• No access to City water and sewer service	Low
Cost	• Cost increase could occur due to mitigation requirements • Located in area with high property value	Moderate
Availability	• Within the existing Yosemite Lake Estates	Low
Public Acceptance	• Local traffic • Compatibility issues	Moderate

Source: EIP Associates, 2005.

CHAPTER FOUR: REFERENCES

4. REFERENCES

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CHAPTER FIVE: REPORT PREPARATION

5. REPORT PREPARATION

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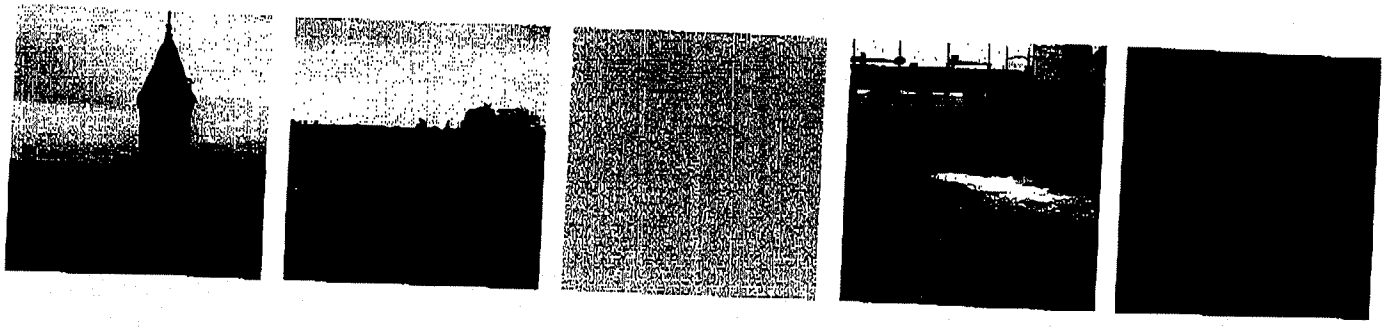
Merced County Association of Governments	Rich Green Website research
Pacific Gas and Electric	Lane Puckett Website research

Appendix G

Yosemite Lake Dam Break Analysis



Yosemite Lake Dam Failure Analysis For Bellevue High School - NAVD 88

Merced Union High School District

March 1, 2007

Blair, Church & Flynn
CONSULTING ENGINEERS

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Yosemite Lake Dam Failure Analysis For Bellevue High School

North American Vertical Datum 1988

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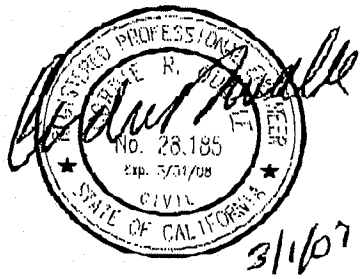
March 1, 2007



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EXECUTIVE SUMMARY

Bellevue High School is located at the northwest corner of the intersection of Bellevue Road and G Street. The 68 acre school site is approximately 3.5 miles north of the City of Merced and 1.75 miles west of the Yosemite Lake Dam. The high school is located on the northern fringe of an inundation area resulting from a dam breach of Yosemite Lake Dam. Most of the high school site is located within the inundation area; however, the west parking lots are outside the inundation area. Figures 2 and 3 show the limits of inundation at Bellevue High School.

Yosemite Lake dam is located approximately 4.5 miles north and east of the City of Merced in Township 6 South, Range 14 East, Section 33. The dam was constructed in the 1880's as a part of the Merced Irrigation District (MID) irrigation system. Yosemite Lake has a natural watershed from which the dam stores runoff, however, the lake's primary purpose is to act as a regulating reservoir between MID's Main Canal, two major downstream distribution canals, the Le Grand and the Fairfield and two lesser canals. Figure 1 shows the location of Yosemite Lake and the MID canals.

A breach of Yosemite Lake Dam and the resulting inundation depths downstream were modeled using the US Army Corps of Engineers Hydraulic Engineering Center's River Analysis System program, HEC-RAS version 3.1.3. This software is able to calculate the maximum flow elevation during an unsteady flow event, such as a dam breach, at particular locations within the breach flood plain given the topography of the flood plain at that location. The primary input parameters to the model were a full reservoir at the beginning of the breach, a breach formation time of one hour, and piping as the dam failure mode. The primary input parameters were selected from a review of estimates of these values as documented from previous dam failures within the United States. A sensitivity analysis was performed by varying each of the primary design parameters, along with various other input parameters, to determine their impact on the calculated inundation depths within the flood plain. The sensitivity analysis confirmed that the calculated inundation depths were not significantly affected by reasonable changes in the input parameters.

Figures 3 and Figure 4 show the water surface contours for the calculated water surface elevations within Bellevue High School. The modeled inundation elevations at the high school site range from 184.25 feet to 182.75 feet. Figure 4 shows the recommended building pad elevations for Bellevue High School. The recommended building pad elevations for Bellevue High School range from 184.75 feet at the southwest corner to 185.50 feet at the north east corner placing them 1.5 feet above the inundation elevation. All elevations are based on National Geodetic Vertical Datum (NGVD) 88.

Figure 5 shows isochrones (time contours) which indicate the time that it will take for the peak flow to travel from the breached dam to a particular location within the inundation flood plain following full development of the breach. The isochrones indicate that it will take approximately 30 minutes for the peak flow to reach Bellevue High School.

BACKGROUND

Merced Union High School District (MUHSD) provides high school education to the City of Merced and adjacent areas. The City is currently experiencing dramatic growth to the north, which has triggered the need for MUHSD to construct the Bellevue High School campus in that area.

BELLEVUE HIGH SCHOOL

Bellevue High School is a 68 acre high school located at the northwest corner of the intersection of Bellevue Road and G Street. It is bounded on the northwest by Fahren's Creek, G Street on the east, Bellevue Road on the south and the proposed Barclay Avenue on the west. Bellevue High School site is 3.5 miles north of the City of Merced and 1.75 miles west of Yosemite Lake. Bellevue High School consists of nine multistory buildings: Gymnasium, Performing Arts building, Visual Arts building, Main Office, Home Economics building, Cafeteria, Vocational Education building and four stairway access buildings.

The high school is located on the northern fringe of the inundation area formed by a dam breach from Yosemite Lake. Ground surface elevations for determining the inundation area were developed from United States Geological Survey (USGS) topographic digital elevation models. Figure 3 shows the limits of inundation at Bellevue High School site based on USGS topographic digital elevation models. Site grading of Bellevue High School will determine exact limits of flood inundation. The building pads for all of the buildings are elevated 1.5 feet above the calculated inundation elevation that would result from a breach of Yosemite Lake Dam. The remainder of the campus is not elevated. It consists of facilities what would suffer little damage during a brief flooding event. These facilities include: baseball diamonds, track, asphalt basketball courts, soccer fields, softball diamonds, football fields and a swimming pool.

YOSEMITE LAKE DAM

Yosemite Lake is located at what would be the intersection of Nevada Road and Lake Road, directly adjacent to and northwest of the University of California, Merced campus. Yosemite Lake is a man-made lake whose impoundment is created by a 45-foot high earthen dam constructed as a part of the irrigation distribution system by the predecessor of the Merced Irrigation District (MID)[1]. The dam is constructed between two buttressing sides of a low valley through which a small natural creek system drains. This location positions the dam and lake at the northeast corner of the northerly expansion of the City of Merced and upstream of a natural ground gradient that drains southwesterly across this area. The result is that virtually any development within the northerly expansion area that is south of Cardella Road is within the potential inundation area of the dam should it breach.

Yosemite Lake dam was constructed in the 1880's on an un-named creek system to provide regulation of irrigation flows withdrawn from the Merced River by the MID Main Canal, prior to distribution to the Le Grand and Fairfield Canals. The Main Canal is approximately 18 miles long. It was constructed in 1888 by Charles Crocker and C.H. Huffman to connect the Merced River to the newly completed Yosemite Lake[2]. The lake, at that time, provided water to nearly 40,000 acres of agricultural land in the Merced area[3]. Today, the lake continues to regulate inflow from the Main Canal prior to distribution to the Le Grand and Fairfield Canals, which now provides water to the southern half of the MID and to the City of Merced.[4]

The lake receives runoff from a 1,400 acre local watershed which is comprised of lower foothill rangeland associated with the western slope of the Sierra Nevada Mountains. The estimated average annual runoff from this watershed is 280 acre-feet per year.

From the time of its construction, the dam remained unchanged until the early 1980's when the west dam face slope was reconstructed to flatten it from its original slope of 2-horizontal to 1-vertical to a new slope of 3-horizontal to 1-vertical. A new seepage blanket and toe drain system was also constructed at the time of the slope work[5].

Pertinent statistics regarding the dam and reservoir are presented in Tables 1 and 2:

Table 1: Yosemite Lake Dam Statistics

Type	Earthen
Height	45 feet[6]
Crest Elevation	254 USGS Datum[7]
Length	1,300 feet[8]
Crest Width	36 feet[9]
Side Slopes	West Face: 3 horiz to 1 vert[10] East Face: 2 horiz to 1 vert[11]
Flood Control Release	Le Grand Canal[12] Control Elev: 241.00 USGS Datum Capacity: 520 cfs Fairfield Canal[13] Control Elev: 240.2 USGS Datum Capacity: 520 cfs
Emergency Spillway	Fairfield Canal Gate Overflow EstimatedControl Elev: 251 USGS Capacity: Not Rated

Table 2: Yosemite Lake Reservoir Statistics

Regulating Pool Elevation	251 USGS Datum[1]
Regulating Pool Storage	7,500 acre feet[2]
Maximum Pool Elevation	254 (Crest of dam) USGS
Maximum Pool Storage	11,000 acre feet[14]
Inflow Source	MID Main Canal[15] Un-named local creek
Outflow[16]	Fairfield Canal, 520 cfs Le Grand Canal, 520 cfs Tower Lateral, 15 cfs Sells Lateral, 15 cfs

MID operates Yosemite Lake as a regulating reservoir between its main inflow source, the Main Canal, and the four distribution canals that withdraw from the reservoir. During a normal year, the Main Canal feeds irrigation releases into Yosemite Lake from the Merced River during the irrigation season, which occurs between April 15 and October 15[17]. During non-irrigation season, the dam is operated as a flood control facility for the small watershed that drains into the lake. Flood control releases can be made to any of the four distribution canals, depending on the quantity of flow that must be released from the reservoir to protect the dam. Irrigation and flood control releases from the dam are primarily controlled by the Le Grand Canal and Fairfield Canal. These canals can operate with gates fully open when the lake is above an elevation of 240 feet (4,000 acre-feet storage). With all gates fully open, the canals have accepted up to 1040 cubic feet per second[18]. In addition, the Fairfield Canal headworks are fitted with overflow weirs that will by-pass the control gates if the water level in the lake rises to within 3 feet of the dam crest.[19]

INUNDATION AREA

The inundation area for the Yosemite Lake dam, should it breach, encompasses approximately 6,000 acres southwest of the dam. This area currently consists of agriculture, residential housing, and commercial development. The inundation area is approximately bounded on the north in a stair step fashion by Nevada Road from the dam to G Street, G Street to Bellevue Road, Bellevue Road to State Route 59, State Route 59 to Cardella Road, Cardella Road to Thornton Road, and Thornton Road to Santa Fe Road. The inundation area is not bounded on the south, since the predominate gradient is to the southwest. For practical purposes, the inundation area was limited to Olive Avenue on the south. Lake Road forms the easterly boundary of the inundation area. Figure 2 shows the extents of the inundation area.

[1] Based on the information provided by MID, there is a discrepancy between the Stage Storage chart and the Fairfield Gate release chart as the relate to the reservoir storage at certain elevations. This discrepancy was not resolved as a part of this report.
[2] Same as Footnote 1.

PRIOR STUDIES

There have been two prior dam breach analyses performed on the Yosemite Lake dam. The first of which was developed in 1974 by Tudor Engineering Company[20]. This study applied Los Angeles County Flood Control District formulas for the development of an isosceles flow hydrograph and breach parameters. The second study, performed by Harris and Associates in November 2004 used HEC-1 modeling software to develop the flood characteristics and subsequent flood routing. Harris applied a combination of an extreme storm event and piping failure to describe the breach characteristics[21]. These reports are available at the MID offices for review.

PROJECT ELEVATION DATUM

The City of Merced and County of Merced maintain two separate bench mark systems. The County uses the North American Vertical Datum of 1929 (NAVD 29) also known as USGS Datum. The City of Merced uses the North American Vertical Datum of 1988 (NAVD 88). The two datums differ from one another by 2.42 feet with the NAVD 88 datum showing a higher elevation at the same point than the NAVD 29 datum. The difference between the two datums was verified through field survey of the same point using record bench marks from both datums.

The hydraulic modeling was prepared using NAVD 29 as this is the datum in which the digital terrain model information was reported and which the elevations of the USGS quad maps are shown. The modeling results and this report was originally published with all elevations stated in NAVD 29 datum. An aerial mapping of the project area was also produced which showed site elevations in this datum. However, subsequent topographic mapping of the site was produced in NAVD 88 and the grading design of the site was produced on this datum. It was, therefore, necessary to republish this report with the flood inundation elevations stated in NAVD 88. The inundation contours for this report were generated by converting the inundation surface created by the HEC-RAS modeling from NAVD 29 to NAVD 88 using the 2.42 feet conversion and then re-calculating the contours in NAVD 88.

The ground contours shown in Figures 2 and 3 are in NAVD 29 datum.

All of the elevation information shown in this report for Yosemite Lake Dam and reservoir are stated in NAVD 29 datum to maintain consistency with the modeling input data.

RESEARCH AND DATA ACQUISITION

Several sources of data were used in the compilation of this analysis and subsequent report of findings for a breach of the Yosemite Lake dam. A listing of each of these sources and the data obtained from them is tabulated in Table 3.

Table 3: Source Materials Consulted

Data Source	Description of Data
Merced Irrigation District	Construction plans for the reconstruction of the west face of dam Operations outline for Yosemite Lake dam and reservoir Inflow rate for the Main Canal Release rates for Fairfield Canal, Le Grand Canal, Sells Lateral, and

	Tower Lateral Stage storage table for the reservoir
California Department of Water Resources, Division of Safety of Dams (DSOD)	Guidelines and requirements for dam breach analysis and hazard assessment
Division Safety Office	Report documenting historical dam failures including dam breach mode, timing of breaching, and geometry of the breach
Site Review of Dam	Blair, Church & Flynn Staff engineers performed a site review of the dam
United State Geological Service	Digital Terrain model for the inundation study area and the dam
Merced County Office of Emergency Services	MCOES was not able to provide any information regarding emergency planning in case of a dam failure at Yosemite Lake

The information provided through meetings with MID staff and the documents they provided were most helpful in understanding the history, operations, and emergency planning that has occurred regarding the dam and reservoir. Specifically:

- Stage storage information for the reservoir was used to develop the maximum anticipated discharge volume from the reservoir during a breach.
- Review of the Tutor Study, which was not available through any other source, provided unknown information on previous inundation studies.
- Operations information provided insight into the most probable source of failure of the dam.

The DSOD guidelines were developed to model dam failure resulting from extreme rainfall events. The guidelines provided some insight into dam failure modes, however, since this study used hydraulic routing of breaching, a hydrological analysis of the watershed was not performed.

Blair, Church & Flynn staff visited the dam and surrounding area to field verify the assumptions made within the breach model. Pictures of the dam and surrounding area can be found in Appendix 1.

Digital Terrain Model (DTM) data available from the United States Geological Service (USGS) provided the base ground topography for the inundation study area.

A literature review released in 1998 by the Dam Safety Office provided documentation of historical dam failures. This information included hydraulic characteristics, breach characteristics, time parameters, embankment dimensions and breach outflows. These were compared to Yosemite Lake Dam to evaluate similarities and to select reasonable ranges of model input parameters.

METHODOLOGY

The failure analysis of Yosemite Lake dam was performed using the Hydraulic Engineering Center – River Analysis Software v. 3.1.3 (HEC-RAS). Prior dam failure studies were performed using hand calculation methods[22] and the Hydraulic Engineering Center – Flood Hydrograph Package, HEC-1, which relies on hydrological routing techniques, a discussion of which is beyond the scope of this report[23]. HEC-RAS uses hydraulic routing technique to calculate the water surface elevation and time of travel at selected locations within the inundation area using unsteady flow calculations. Both the hydrologic and hydraulic techniques will provide essentially the same answers given proper input parameters for the dam breach and calibration. The hydraulic routing methodology of HEC-RAS was preferred for this study over the hydrological routing methodology as it provides the ability to more precisely model the ground surface of the inundation area and refine the locations where the water surface of the flood inundation wave is calculated, which is not present in the hydrological routing technique.

HEC-RAS was also preferred as it provides a graphical interface, which is a less error prone interface for entering input parameters such as dam geometry, breaching parameters, inundation area topography, mapping of inundation limits and water surface elevations, and ineffective flow areas.

Modeling a dam breach requires that the physical process be rendered to a series of mathematical relationships. These relationships are grounded in physical reality by input parameters that lie within a range that is possible and probable, which means that experimental or actual experience has verified that range of values. Therefore, the modeling process begins with the selection of input variables that are reasonable for the situation which is being modeled. The breaching of a dam also results in what is termed rapidly varying flow. This type of flow is characterized by a sudden change in flow rate, flow profiles, and velocity. This type of flow can not be modeled mathematically without providing the model with initial conditions and boundary conditions. These conditions provide the model with mathematical connection to the conditions of the dam and the reservoir when the breach begins to form. The initial condition required for the HEC-RAS model is the inflow into the reservoir. The boundary conditions include flow hydrograph for the non-breach condition and the hydraulic condition of the flow at the downstream point of the flood inundation area. The ranges of input parameters used by HEC-RAS to model the effects of a dam breach are listed in Table 4. Initial and boundary conditions are more fully described below.

Table 4 – Dam Breach In-Put Parameters

Modeling Parameter	Range of Values
Breach Width	Minimum: 0 feet Maximum: 200 feet
Breach side slope	Minimum: 0.3 horiz to 1 vert Maximum: 1.7 horiz to 1 vert
Piping Coefficient	Minimum: 0.5

Modeling Parameter	Range of Values
	Maximum: 1.0
Full Formation Time	Minimum: 0 hrs Maximum: 2 hrs
Bottom of Breach Elevation NAVD 29	Minimum: 210 Maximum: 240 feet
Initial Piping Elevation NAVD 29	Minimum: Elev 210 Maximum: Elev 240
Starting Water Surface Elevation of Reservoir at Beginning of Breach NAVD 29	Minimum: Elev 250 Maximum: Elev 254
Inundation Area Cross Sections	Maximum spacing for Model stability
Reservoir Cross Sections	Required to provide reservoir volume at time of breach

Table 4 illustrates that there are a number of input parameters to the HEC-RAS model that have large ranges of possible values. Therefore a multi-stepped approach is necessary to determine which values are appropriate for this particular study. First, a review of published research studies on dam breaching helped to determine if the range of values for the parameters could be narrowed. Second, select a set values for the initial input parameters for which the research studies indicate a strong value preference. Third, perform a sensitivity analysis on the range of parameters to determine which caused significant changes in the calculated water surface elevations in the inundation study area.

Cross sections that represent the existing ground surface in the inundation study area and the cross sections that represent the reservoir behind the dam where two of the input parameters were not subject to investigation. In order to map the ground surface in the inundation study area, cross sections were located at important undulations in topography. As an example, south of Bellevue Road and west of G Street there is a small ridge labeled Bellevue Ranch on the Merced USGS quad map. Five cross sections were located through the ridge to best capture its width, length, elevations as it transitions from the valley to the top of the ridge and back. It was assumed that the ridge elevation would be of sufficient height to divert flow either north, south or both of the ridge. The model results confirmed this assumption. In all, 61 cross sections were created from a digital terrain model obtained from the United States Geological Service (USGS) Digital Elevation Model (DEM) surface information. The cross sections were densified using the interpolation feature of HEC-RAS. The final model used 412 cross sections to model the inundation study area.

The cross sections represent the natural terrain within the inundation study area. They were not adjusted from the USGS DEM information to account for recent grading and housing developments that have occurred since the DEMs were created.

The cross sections used to model the reservoir storage were synthesized from the USGS 7.5-minute Yosemite Lake quad map and the known bottom elevation of the toe of the dam. The cross sections were derived to provide 11,000 acre-feet of storage behind the dam at WS Elev. 254, which is the dam crest, without appreciably exceeding the length of the reservoir as shown on the quad map. The critical condition that these cross sections must satisfy is that they provide the correct volume within the reservoir to feed the breach flow as it progresses from a small piping problem to a fully developed breach.

The review of existing literature on dam breaches revealed that the formation time of a dam breach ranges from 0.3 hours to 1.5 hours[24]. The literature provides a convincing body of evidence that an instantaneous breach formation time was not physically based, but rather a means of developing a maximum outflow from the breach to produce the most conservative inundation depths. The literature indicated that a breach formation time of 1 hour was appropriate for this type of dam and a sensitivity analysis showed that the water surface elevations were not sensitive to varying the time from one-half hour to one and one-half hours.

The initial condition for this model is the existing flow through the cross sections within the inundation area. Trial and error runs showed that an initial flow of 1,000 cubic feet per second was necessary to maintain stability within the model. This condition has no impact on the calculated water surface elevations.

The hydraulic boundary conditions were established at the upstream and downstream cross sections of the study area. The downstream boundary condition was set at normal depth for the discharge at that cross section given the existing ground gradient as the hydraulic friction slope. The upstream boundary condition was set using an inflow hydrograph based on the normal operation of the reservoir. This hydrograph was developed using the following assumptions:

- At the beginning of the breach, it was assumed that the reservoir would be at maximum stage (Elevation 254) and maximum storage capacity (11,000 acre-feet), with peak inflow from the Main Canal of 1,200 cfs, and combined outflow to the Fairfield and Le Grand Canals of 900 cfs, which would result in a net inflow to the reservoir of 300 cfs.
- The 1,200 cfs inflow condition was assumed to continue for seven hours as this is the estimated time that it takes for the flow to travel in the Main Canal from the Merced River intake to Yosemite Lake, if the Merced River head gates are shut as soon as the breach starts. The net 300 cfs was then assumed to occur until the water surface elevation in the reservoir lowered to Elevation 240. At this elevation, the reservoir water surface elevation drops below the control outlet elevation of the Le Grand Canal and is near the control elevation of the Fairfield Canal, which results in no outflow from the reservoir into those canals.
- The net inflow then becomes the inflow from the Main Canal until that runs dry.

RESULTS

Figure 3 shows the calculated inundation elevation contours and the limits of inundation at Bellevue High School. The contours range from 184.25 feet to 182.75 feet NAVD 88. Figure 3 shows that most of the high school site, with the exception of the west parking lots, is located within the modeled inundation area.

Comparing the inundation contour elevations with the proposed curb elevations for the streets adjacent to the campus shows that the expected maximum depth of inundation at the Bellevue High School site is approximately 1-foot. This maximum depth is calculated to occur within 30 minutes of a breach of Yosemite Lake dam. The velocity of water as it moves around and across the campus is calculated to be 1.4 feet per second.

The cross sections used in the HEC-RAS model to represent the existing ground do not take into account changes to the ground within the inundation area due to mass grading for new developments. This information was either not available at the time of the preparation of this report or is in the process of occurring, resulting in a state of constant change within the inundation area. These changes to the ground surface could result in changes in the calculated water surface elevations and possible redirection of portions of the flood wave as it translates through the inundation area.

Blair, Church & Flynn has attempted to remove as much error from the model as possible to develop a reasonable calculation of the water surface elevations within the inundation area. Sensitivity analyses were conducted to improve the reliability of the calculated water surface elevation. However, it is not feasible to model every potential breach characteristic. Therefore, the failure mode with the highest degree of confidence was used in the model. A complete hazard assessment is not within the scope of this report.

RECOMMENDATIONS

We recommend that the building pads and campus quad area be elevated 1.5 feet above the inundation elevations. The remainder of the campus, such as parking lots, play courts and playfields, does not need to be raised above the inundation level. These areas can withstand an inundation flood wave that is approximately 1-foot deep and has a velocity of 1.5 feet per second. The resulting damage from the flooding is expected to have a repair cost that is less than the cost to fill these areas above the inundation elevations. The recommended building pad elevations and quad area for Bellevue High School are shown in Figure 4. These finish grade elevations range from 184.75 feet at the southwest corner to 185.50 feet NAVD 88 at the north east corner

Figure 5 shows the isochrones for the inundation wave from a breach of Yosemite Lake Dam. These isochrones indicate that Bellevue High School has 30 minutes to prepare for the arrival of the peak inundation wave once a dam breach begins. Upon notification that a dam breach has occurred, we estimate that the school site administrative staff will have between 15 and 30 minutes to enact an emergency response.

Because of the short reaction time, we have two additional recommendations:

1. That the school site administrative staff have a dam breach announcement incorporated into their standard emergency announcement protocols and that they prepare an emergency response plan in the event of a dam breach. The emergency response plan should instruct students, faculty, and staff to move from the athletic areas and parking lots to the campus quad and buildings areas where they can be housed until such time as the flood wave has passed. The emergency response plan should include the temporary housing of the school population at the site until the inundation wave recedes. Post event evacuation procedures and protocols for the pickup of students by buses or parents should also be included in the emergency plan.

   We do not recommend that an evacuation plan be developed as there is insufficient time to carry out such a plan. Based on the following assumptions, the total time to evacuate Bellevue High School is estimated to be 2.5 hours.

Assumptions regarding evacuation of Bellevue High School can be reasonably made as follows:

- MID maintains 24 hour Supervisory Control and Data Acquisition (SCADA) at Yosemite Lake. That automated information acquisition system should be able to detect a

significant drop in the lake level. Therefore, MID should be able to notify MUHSD within 30 minutes that a dam breach is occurring.

- It will take 45 minutes more to mobilize sufficient bus transportation and move those buses to the school site.
- It will take 30 minutes more to load the buses and start moving towards safety.
- It will take 10 minutes more to do a final check of the site and secure the buildings.
- It will take 5 minutes more for the last person to leave the site.

2. That the school district contact the Merced Irrigation District (MID) to notify MID that there is a new school campus within the Yosemite Lake dam breach inundation area and to provide MID with up-to-date contact information for the emergency coordinator at the Bellevue High School campus as soon as that information is available.

REFERENCES

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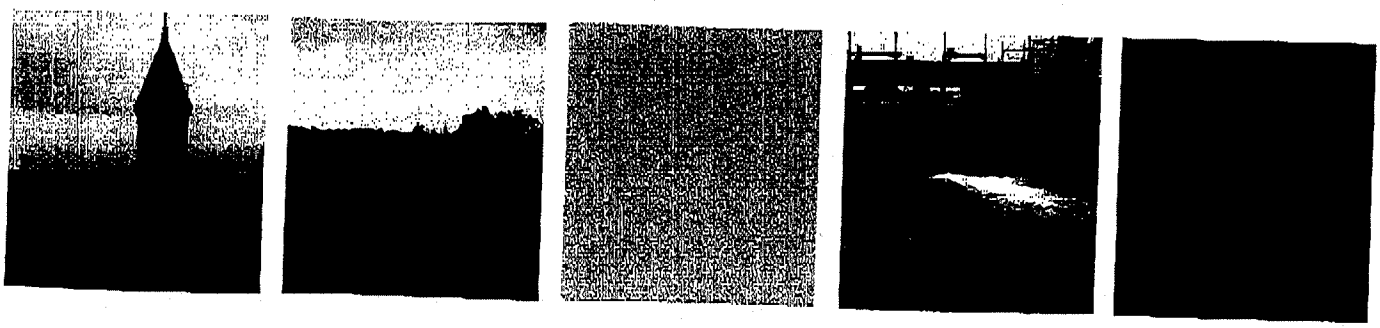


Yosemite Lake Dam Failure Analysis For Bellevue High School

Figures

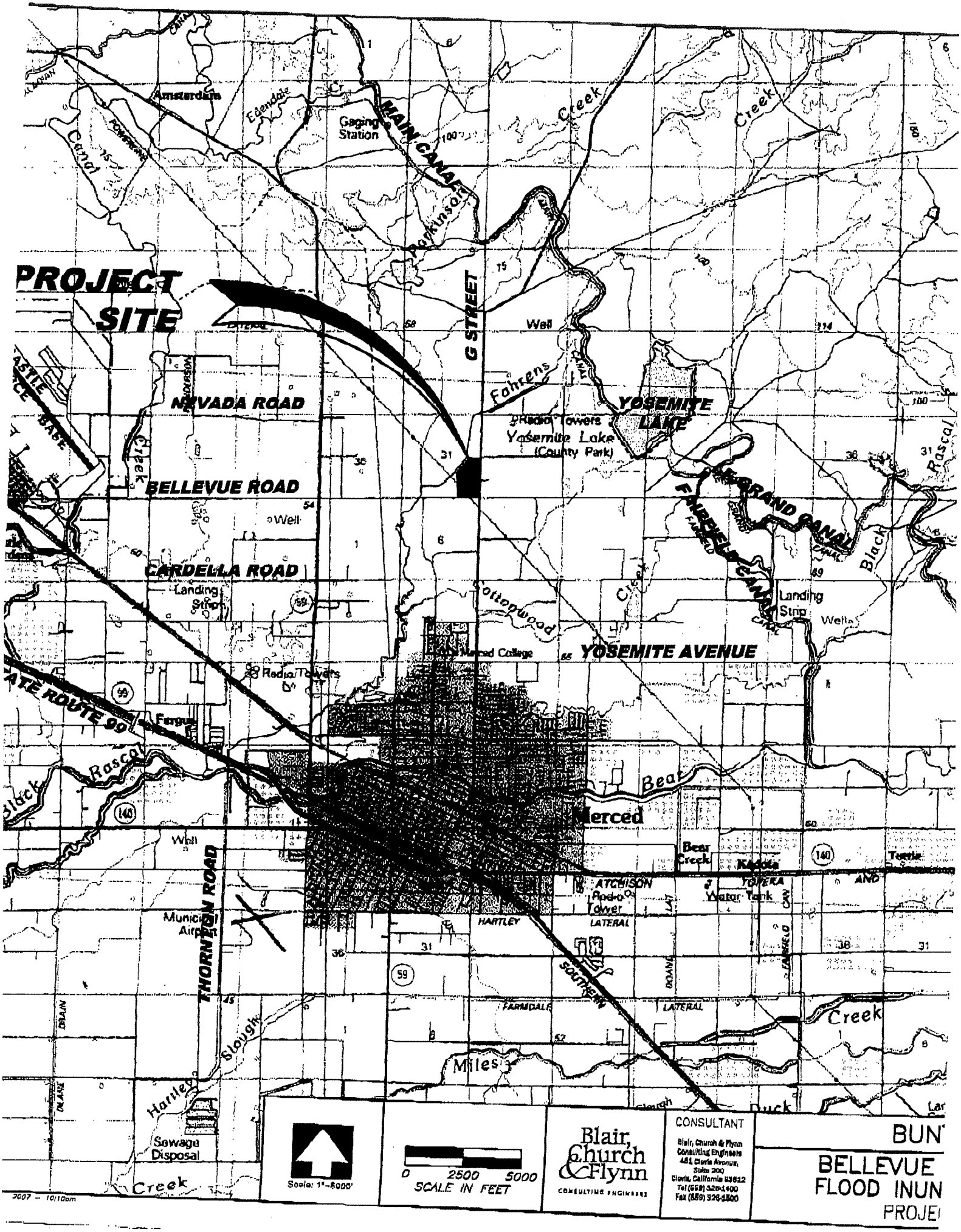
Figure 1 - Location Map

Figure 2 - Water Surface Contours within the Inundation Area

Figure 3 - Site Specific Inundation Area

Figure 4 - Inundation Area Pad Elevations

Figure 5 - Isochrone Contours within the Inundation Area


PROJECT SITE
NEVADA ROAD
BELLEVUE ROAD
CARDELLA ROAD
YOSEMITE AVENUE
G STREET
MAIN CANAL
FAHRENS CANAL
MERCED IRRIGATION-MARIPOSA CANAL
YOSEMITE LAKE
Yosemite Lake (County Park)
Radio Towers
Landing Strip
Well
Gaging Station
Amsterdam
Edendale
Fahrens
Cottonwood
Bear Creek
Black Rascal
Merced
Municipal Airport
THORNTON ROAD
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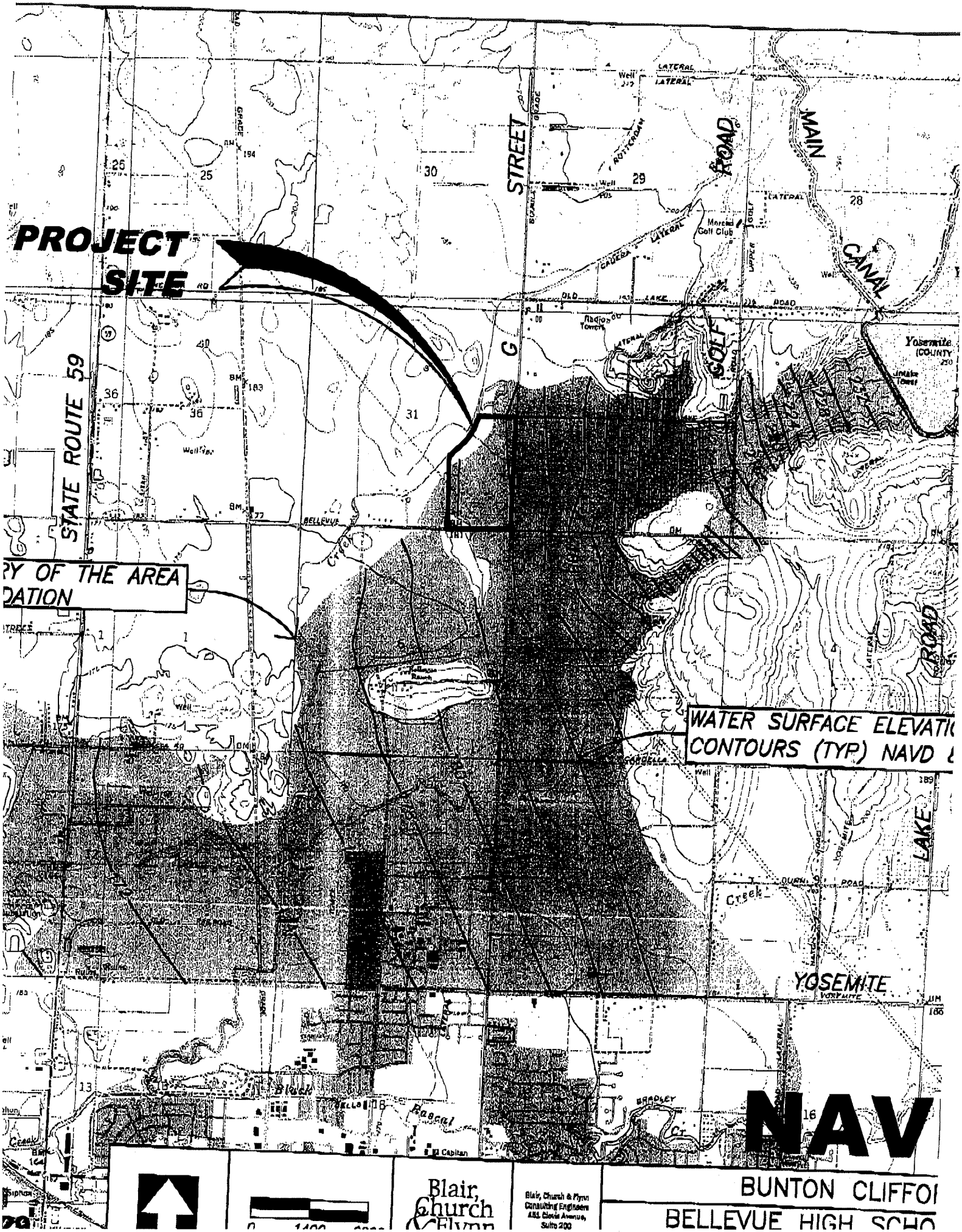
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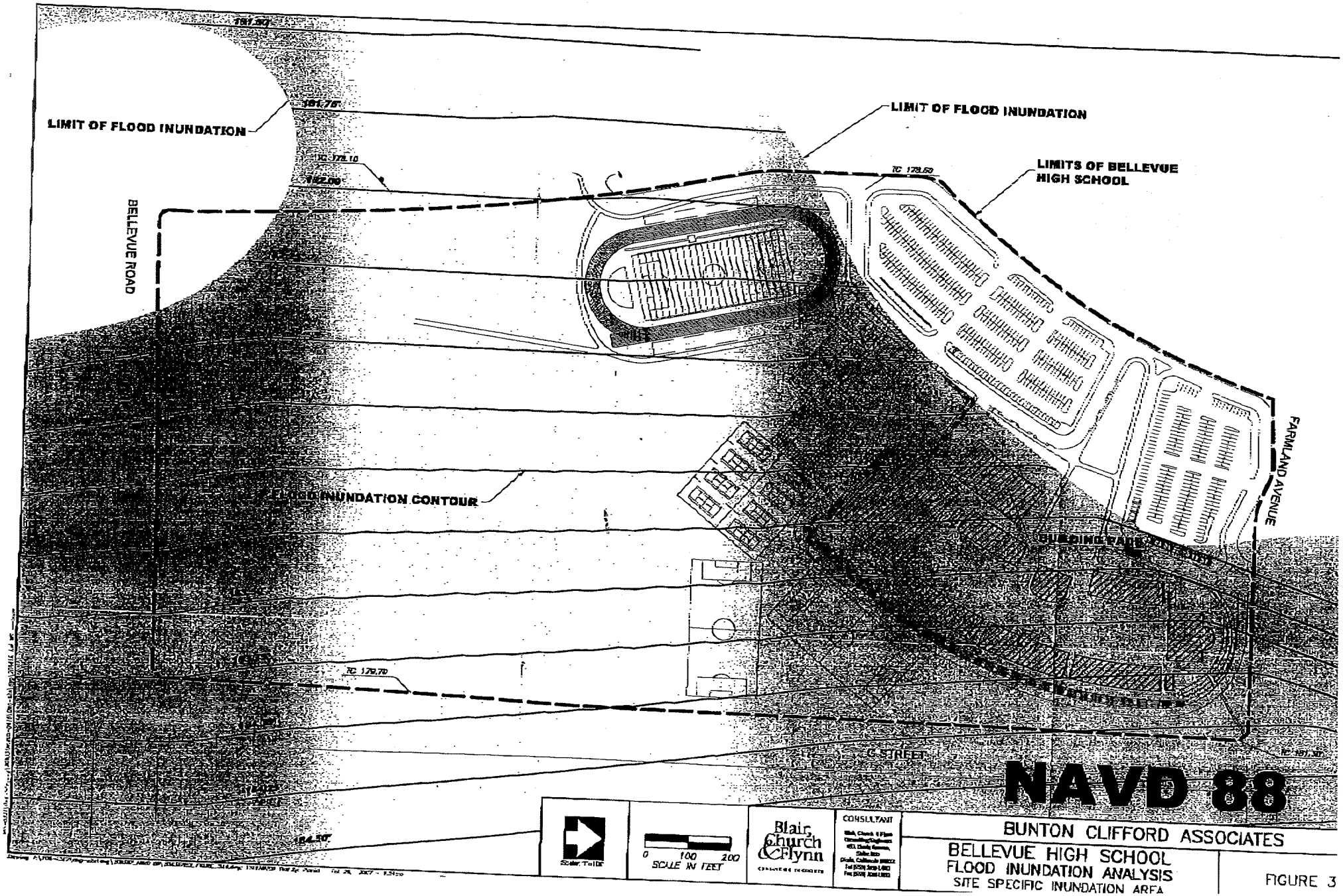
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SCALE IN FEET
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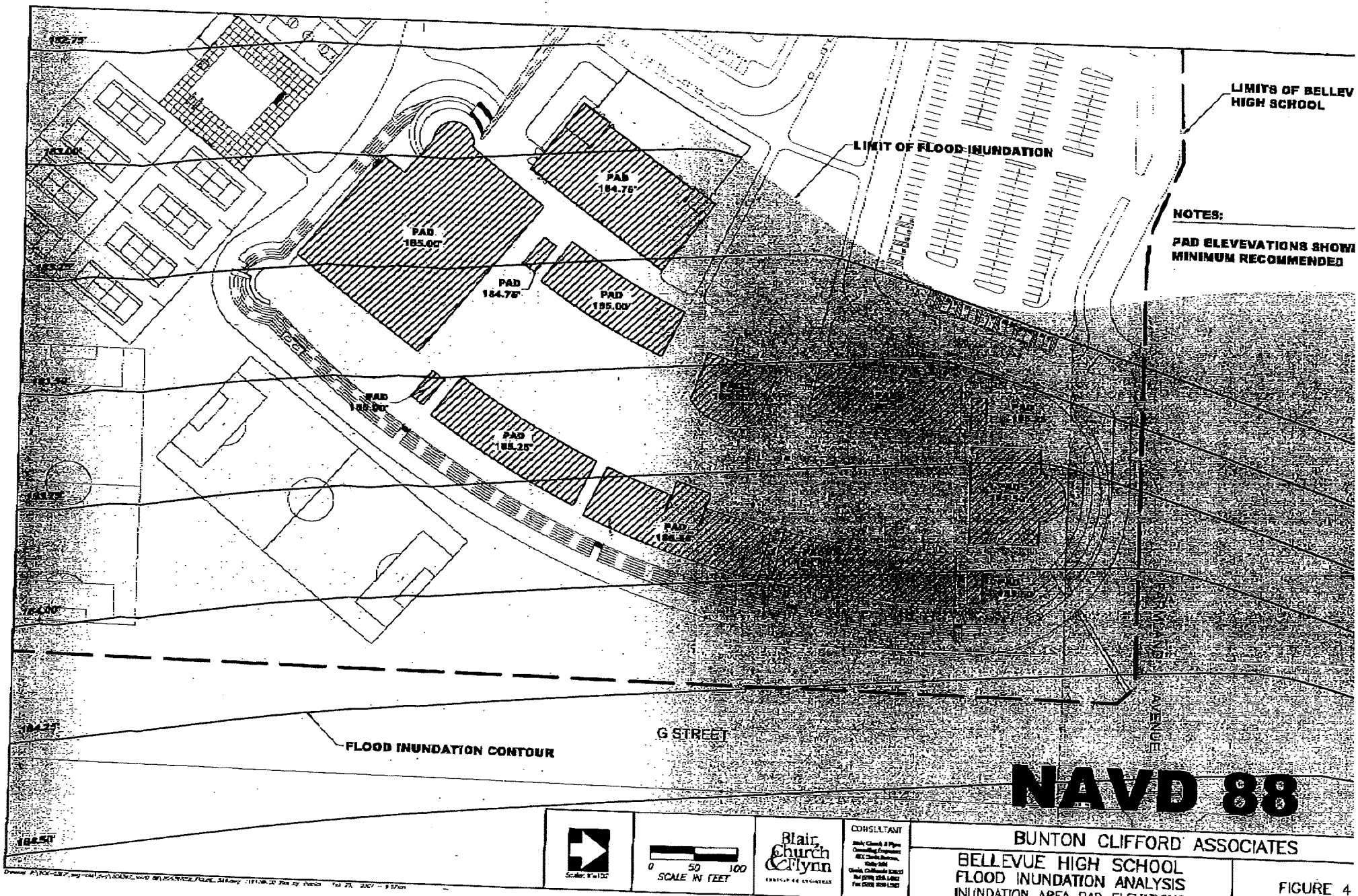
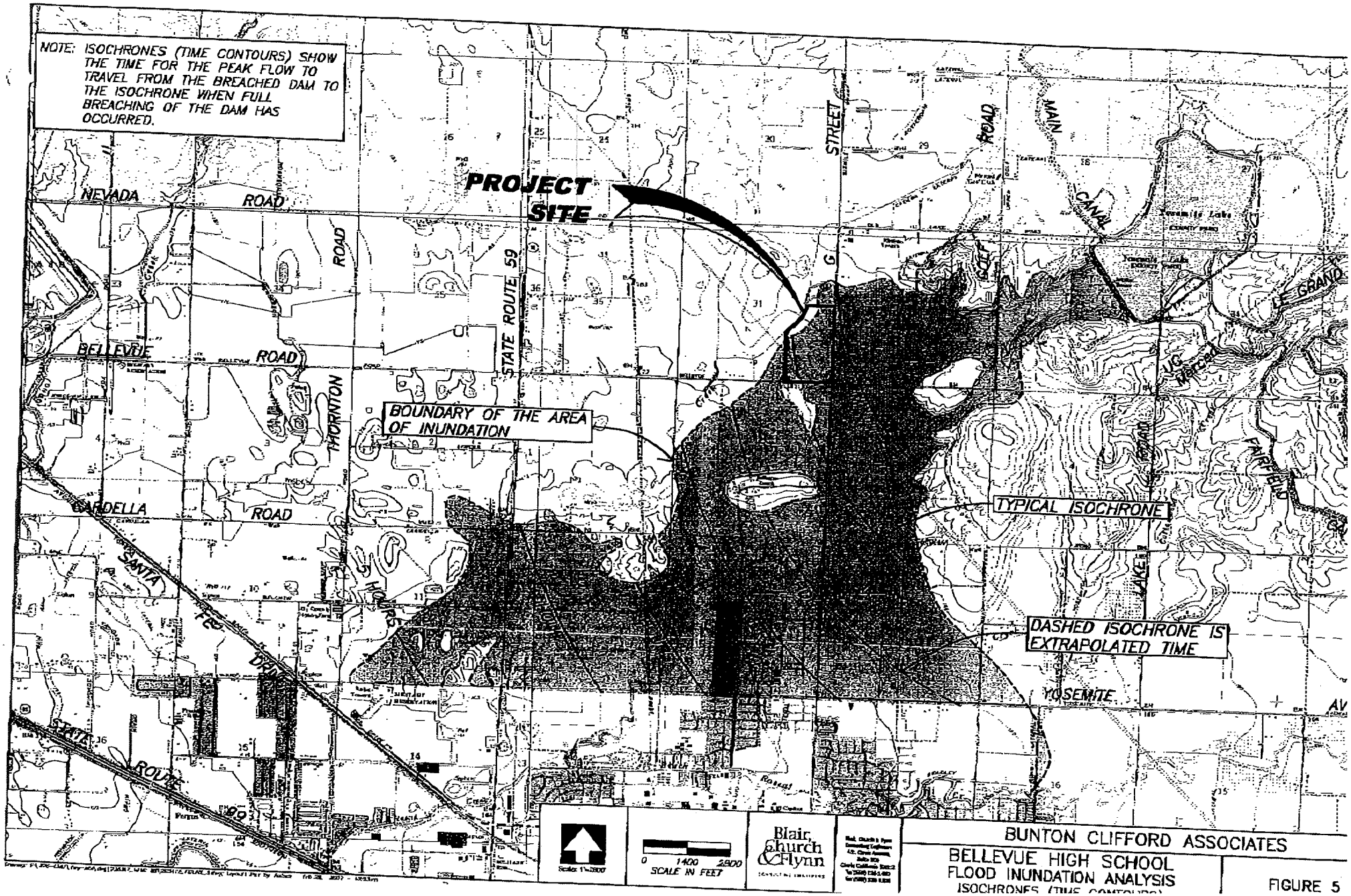
CONSULTANT
BUNTON CLIFFORD ASSOCIATES
BELLEVUE HIGH SCHOOL
FLOOD INUNDATION ANALYSIS
SITE SPECIFIC INUNDATION AREA
FIGURE 3


LIMITS OF BELLEV
HIGH SCHOOL
LIMIT OF FLOOD INUNDATION
NOTES:
PAD ELEVEVATIONS SHOWI
MINIMUM RECOMMENDED
PAD
185.00'
PAD
184.75'
PAD
184.75'
PAD
185.00'
PAD
185.25'
FLOOD INUNDATION CONTOUR
G STREET
NAVD 88
0 50 100
SCALE IN FEET
Blair, Church & Flynn
CONSULTANT
BUNTON CLIFFORD ASSOCIATES
BELLEVUE HIGH SCHOOL
FLOOD INUNDATION ANALYSIS
INUNDATION AREA PAD ELEVATIONS
FIGURE 4


NOTE: ISOCHRONES (TIME CONTOURS) SHOW THE TIME FOR THE PEAK FLOW TO TRAVEL FROM THE BREACHED DAM TO THE ISOCHRONE WHEN FULL BREACHING OF THE DAM HAS OCCURRED.
PROJECT SITE
NEVADA ROAD
ROAD
STATE ROUTE 59
BELLEVUE ROAD
THORNTON
BOUNDARY OF THE AREA OF INUNDATION
CARDELLA ROAD
SANTA FE DRIVE
STATE ROUTE 99
TYPICAL ISOCHRONE
DASHED ISOCHRONE IS EXTRAPOLATED TIME
YOSEMITE
LAKE
FAIRFIELD
MAIN
CANAL
LE GRAND
0 1400 2800
SCALE IN FEET
Blair, Church & Flynn
BUNTON CLIFFORD ASSOCIATES
BELLEVUE HIGH SCHOOL
FLOOD INUNDATION ANALYSIS
ISOCHRONES (TIME CONTOURS)
FIGURE 5

Appendix H

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------, *Final Environmental Impact Report for the Bellevue Ranch Master Development Plan,* February 1995, prepared for The City of Merced, California. (SCH# 92102055)

Appendix I

Agencies and Persons Contacted

Agencies and Persons Contacted

Agencies provided with the Notice of Preparation/Initial Study:

City of Merced – Planning Department

Merced Union High School District (MUHSD)

State of California
- State Clearing House
- Department of Fish and Game, Region 4
- Department of Water Resources
- Department of Transportation, District 10
- Resources Agency
- Office of Historic Preservation
- Department of Parks and Recreation
- Department of Health Services
- Native American Heritage Commission
- Highway Patrol
- Regional Water Quality Board, Region 5

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Appendix J

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