

FINAL
ENVIRONMENTAL IMPACT STATEMENT

NORTH FORK CASINO
NORTH FORK RANCHERIA OF MONO INDIANS
FEE-TO-TRUST AND CASINO/HOTEL PROJECT

FEBRUARY 2009

Lead Agency:

U.S. Department of the Interior, Bureau of Indian Affairs
Pacific Region, 2800 Cottage Way, Room W-2820
Sacramento, CA 95825-1846

Cooperating Agencies:

National Indian Gaming Commission
1441 L. Street NW Suite 9100
Washington DC 20005

U.S. Environmental Protection Agency - Region 9
75 Hawthorne Street
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City of Madera
5 East Yosemite Avenue
Madera, CA 93638

California Department of Transportation - District 6
1352 W. Olive Avenue
Fresno, CA 93728

Madera Irrigation District
12152 Road 28-1/4
Madera, CA 93637

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Appendix AA Paleontological Resource Assessment
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EXECUTIVE SUMMARY

***NORTH FORK RANCHERIA HOTEL AND CASINO
FINAL ENVIRONMENTAL IMPACT STATEMENT***

EXECUTIVE SUMMARY

NORTH FORK RANCHERIA CASINO AND HOTEL – FINAL ENVIRONMENTAL IMPACT STATEMENT

The environmental process was initiated through the Bureau of Indian Affairs' (BIA) publication of a Notice of Intent (NOI) in the *Federal Register* on October 27, 2004 (**Appendix B**), describing the Proposed Action, and announcing the BIA's intent to prepare an Environmental Impact Statement (EIS) for the Proposed Action. A scoping meeting was held by the BIA on November 15, 2004 at Hatfield Hall, Madera District Fairgrounds, in Madera, California, to solicit potential topics of environmental concern. The BIA published a Notice of Correction (NOC) in the *Federal Register* on April 6, 2005. The NOC amended the October 2004 NOI to include a description of possible project alternatives and also to further extend the scoping comment period to May 6, 2005. In July 2005, the BIA published a Scoping Report which summarized the comments received during the scoping period and outlined the expected scope of the EIS (AES, 2005).

The Notice of Availability (NOA) of the Draft EIS (DEIS) was published by the BIA on February 15, 2008, provided the time and location of the public hearing on March 12, 2008 to present the proposed project with alternatives and to accept comments. The Notice of Filing on February 15, 2008 with the United States Environmental Protection Agency (USEPA) initiated the distribution of the DEIS to federal, tribal, state, and local agencies and other interested parties for a 45-day review and comment period.

Appendix Y of this Final EIS (FEIS) includes a list of the public comments received during the public comment period. Responses have been provided for each substantive comment submitted during the public comment period of the DEIS. These responses are provided within the Response to Comments document included within **Appendix Y** and are reflected in appropriate modifications made through the text of the FEIS where necessary and appropriate.

The BIA will publish this FEIS and will file it with the USEPA. The USEPA will then publish a NOA for the FEIS in the *Federal Register* marking the beginning of the 30-day review period that the BIA, upon conclusion of which, may issue a Record of Decision (ROD).

ES.1 INTRODUCTION

This EIS assesses the environmental consequences of the North Fork Rancheria of Mono Indians' (Tribe) application to have the Bureau of Indian Affairs take 7 parcels totaling 305 acres into Federal trust and to develop a casino and hotel resort, parking structure, and associated facilities. In addition to the trust acquisition for gaming purposes, the proposed action includes approval by the National Indian Gaming Commission (NIGC) of a gaming management contract between SC Madera Management, LLC and the Tribe. The proposed site (Madera site) is located in southwest Madera County, just north of the City of Madera and adjacent to State Route 99. Other development alternatives include a reduced-size casino, non-gaming development, and a reduced-size casino on an alternative site (North Fork site). The 80-acre North Fork site is located east of the Madera site, approximately three miles west of the community of North Fork. The effects of these development alternatives and a No Action alternative are analyzed within this EIS.

ES.2 PURPOSE AND NEED

A lack of economic development opportunities exists for the Tribe primarily due to a lack of funds for project development and operation. The Tribe has no sustained revenue stream that could be used to fund programs and provide assistance to Tribal members. Among the Tribe's membership there is a high reliance upon the Federal and State governments for social services.

The acquisition of the Madera site into Tribal trust status would allow the Tribe to take advantage of the financial opportunities provided by Congress through the Indian Gaming Regulatory Act (IGRA), greatly enhancing the Tribe's economic development potential, which is the paramount objective of the Tribe. Implementation of the proposed action would assist the Tribe in meeting the following objectives:

- Improve the socioeconomic status of the Tribe by providing an augmented revenue source that could be used to strengthen the Tribal Government; fund a variety of social, housing, governmental, administrative, educational, health and welfare services to improve the quality of life of Tribal members; and provide capital for other economic development and investment opportunities.
- Provide employment opportunities to the Tribal and non-Tribal community.
- Make donations to charitable organizations and governmental operations, including local educational institutions.
- Fund local governmental agencies, programs, and services.
- Allow the Tribe to establish economic self-sufficiency.

ES.3 ALTERNATIVES

This document describes and analyzes four development alternatives plus the No Action alternative. Alternative A is the Tribe's Preferred Alternative. Three of the development alternatives include placing land into Federal trust. The remaining development alternative, Alternative D, would occur on the North Fork site, which is currently in Federal trust. The alternatives are described in detail in **Section 2.0** and are summarized below.

ALTERNATIVE A – PROPOSED PROJECT

The proposed project consists of placing the 305-acre Madera site into Federal trust status and approval of a gaming management contract by the NIGC. The Tribe proposed to develop the site for recreation/tourism by constructing a casino, hotel, and parking structure.

The casino and hotel resort would include a main gaming hall, food and beverage services, retail space, banquet/meeting space, administrative space, pool, and spa. Fifteen food and beverage facilities are planned, including a buffet, six bars, three restaurants, and a five-tenant food court. The resort would include a multi-story hotel with 200 rooms, a pool area, and a spa. Approximately 4,500 parking spaces would be provided for the casino/hotel resort, with 2,000 of those spaces within a multi-level parking structure.

ALTERNATIVE B – REDUCED INTENSITY

Alternative B consists of a smaller-scale version of Alternative A, but without hotel or pool components. The design would be similar to Alternative A with approximately 40 percent of the total square footage. As with Alternative A, development and operation of the casino would involve trust acquisition of the Madera site and approval of a gaming management contract.

ALTERNATIVE C – NON-GAMING USE

Alternative C consists of a mixed-use retail development, such as a commercial business park or "strip mall". This development would include two large "big box" retail stores, three restaurants, and smaller storefronts. The land would be taken into Federal trust but no gaming or hotel would be associated with this alternative.

ALTERNATIVE D – NORTH FORK LOCATION

Alternative D would consist of a smaller-scale version of Alternative A on the North Fork site. This alternative would not include retail, high limit gaming, entertainment, hotel, or pool components. Alternative D would require that the North Fork site be transferred from individual

trust to Tribal trust status or the approval of a lease agreement between the individual trust beneficiaries and the Tribe.

ALTERNATIVE E – NO ACTION

Under the No Action Alternative, neither the 305-acre Madera site nor the 80-acre North Fork site would be developed as described under any of the alternatives identified. The Madera site would not be taken into trust and would continue to be utilized for open space, agricultural, and rural residential uses. The North Fork site would continue to be utilized for open space and rural residential uses. Under this alternative, the Tribe would not attain its basic objective of economic self-sufficiency.

ES.4 AREAS OF CONTROVERSY

The EIS scoping process is an opportunity for public and Federal and State agencies to provide input on the scope of the EIS. The scoping process for this EIS is described in **Section 1.5**. A scoping report was published in July 2005, which summarized the comments that were received during the scoping period. The following is a summary of the common areas of controversy raised in the scoping process.

Commenters were concerned with the effects of a casino and hotel development on air quality. Some commenters requested that the EIS discuss the methodology used to calculate air quality impacts and what regulations would be analyzed for compliance.

Another area of concern in scoping comments was impacts to water supply and water quality. Commenters asked that the EIS estimate the water demand of the project. Water quality concerns included the impact on the water quality of nearby water bodies and cumulative impacts to water quality.

Concerns regarding traffic impacts from the project were also raised during the scoping process. Commenters were concerned with effects to traffic circulation and mitigation that would be required for impacts. Commenters requested that the EIS analyze the following roadways: State Route 99, primary and secondary roads in the project vicinity, and state and county roads. Commenters were concerned with cumulative and growth inducing effects, as they related to traffic impacts.

A major area of concern for commenters was the impact on agriculture. Some commenters inquired if the project would result in the reduction of agricultural land or conversion of prime farmland, unique farmland or farmland of statewide importance. Commenters requested that the EIS describe the agricultural value of the development site, including value of soils, and any past

or current agricultural uses of the property. Some commenters inquired as to the effects of the project on nearby agricultural properties.

ES.5 ENVIRONMENTAL CONSEQUENCES, MITIGATION, AND SIGNIFICANCE CONCLUSIONS SUMMARY

The environmental consequences of the alternatives analyzed within the Draft EIS are summarized in **Table ES-1**. Mitigation measures have been identified where feasible to address specific effects regardless of whether they are considered “significant.” Mitigation measures identified in the design process have been incorporated into the project description. In addition, measures have been identified to mitigate specific effects identified during the preparation of the Draft EIS. These measures and significance conclusions are summarized in **Table ES-1**. Abbreviations for alternatives and significance are identified at the bottom of the table.

Table ES-1 also serves to provide a brief, but comprehensive comparison of the environmental impacts of each Alternative. As shown, the No Action Alternative (Alternative E) does not result in most of the negative environmental effects that result from the development alternatives (Alternatives A-D). The No Action Alternative would also not result in the beneficial economic effects that would result from the development alternatives. The North Fork site is remote and environmentally and culturally sensitive when compared with the Madera site. Thus, although the development on the North Fork site proposed under Alternative D is much smaller than that proposed under the other alternatives (on the Madera site); many negative environmental effects are unique or more significant under Alternative D. For instance, development on the North Fork site would have much greater negative effects to special status species than development on the Madera site. Therefore, extensive mitigation measures are recommended for Alternative D to reduce these effects to a less than significant level. Potential airport-related impacts is one impact area that is present for the Madera site, but not the North Fork site, given the proximity of the Madera Municipal Airport to the Madera site. However, potential inconsistencies with airport operations can be mitigated to a less than significant level for all of the development alternatives occurring on the Madera site. Among development alternatives on the Madera site, Alternative A presents the most intensive development and generally results in greater environmental impacts, both positive and negative, when compared with the other alternatives.

TABLE ES-1
SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
4.2 LAND RESOURCES			
<i>Topography</i>			
A Development of Alternative A would result in localized alterations to the topographical characteristics of the Madera site. However, the overall topography of the Madera site would remain essentially unchanged.	LTS	No mitigation is recommended.	LTS
B Similar to Alternative A.	LTS	No mitigation is recommended.	LTS
C Buildout of the proposed project under Alternative C would entail similar topographical alterations as discussed for Alternatives A and B, although on a smaller scale.	LTS	No mitigation is recommended.	LTS
D Buildout of Alternative D would entail localized alteration and the general topographical character of the region would remain unchanged. Creation of soil stabilization areas with a slope of 2:1 would not lead to slope instability unless they are improperly designed without erosion control measures, in which case a potentially significant impact would result.	S	<ul style="list-style-type: none"> Creation of soil stabilization areas around the building pad shall be properly compacted and shall be subject to a geotechnical review prior to construction of the areas. Proper hydroseeding, use of straw fiber rolls, and other soil erosion protection measures shall be utilized as part of a comprehensive erosion control plan. 	LTS
E No development would take place on the Madera site or on the North Fork site.	NE	No mitigation is recommended.	NE
<i>Soil</i>			
A Soils at the Madera site range from poorly drained to excessively drained, with generally moderate erosion hazards. The development of a Grading and Drainage Plan (Appendix K) would address and reduce erosion hazards to a less than significant level.	LTS	No mitigation is recommended.	LTS

TABLE ES-1
SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
Since the Madera site is flat and level, no impact would occur associated with landslide hazards. Moreover, the BMPs outlined for erosion control would also diminish slide hazards localized around drainages and detention basins.			
B Similar to Alternative A.	LTS	No mitigation is recommended.	LTS
C Similar to Alternative A.	LTS	No mitigation is recommended.	LTS
D The soils on the North Fork Rancheria are subject to erosion. The Grading and Drainage plan outlines several Best Management Practices (BMPs), including the development of an erosion control plan, that would address and negate erosion hazards. While the North Fork site is surrounded by inclined ground surfaces, the Grading and Drainage Plan (Appendix K) includes the incorporation of BMPs for compaction and erosion control that would negate slide hazards around building and parking features, drainages and detention basins.	LTS	No mitigation is recommended.	LTS
E No development would take place on the Madera site or on the North Fork site.	NE	No mitigation is recommended.	NE
Seismicity			
A The nearest seismic hazard is the San Andreas Fault, located approximately 40 miles southwest of the Madera site. Thus, risk for soil liquefaction and seismically induced flooding is low. However, hazards to public safety related to seismically induced structural failure would be considered a potentially significant impact.	S	<ul style="list-style-type: none"> All structures shall be designed in compliance with the California Building Code (CBC) Building Code (Article VI Chapter 6.04) current at the start of construction such that risks to the health or safety of workers or members of the public from earthquake hazards are reduced to a less-than-significant level. 	LTS
B Similar to Alternative A.	S	Same as Alternative A.	LTS

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SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
C	Similar to Alternative A.	S	Same as Alternative A.	LTS
D	The North Fork Rancheria is approximately 80 miles northeast of the San Andreas Fault. Another fault system exists approximately six miles to the northeast of the North Fork site. Thus, risk for soil liquefaction and seismically induced flooding is low. The hazards to public safety associated with potential structural failure under these conditions would be considered a significant impact.	S	Same as Alternative A.	LTS
E	No development would take place on the Madera site or on the North Fork site.	NE	No mitigation is recommended.	NE
Mineral Resources				
A	Alteration in the land use under Alternative A would not result in a loss of economically viable aggregate rock or diminish the extraction of important ores or minerals.	NE	No mitigation is recommended.	NE
B	Same as Alternative A.	NE	No mitigation is recommended.	NE
C	Same as Alternative A.	NE	No mitigation is recommended.	NE
D	Same as Alternative A.	NE	No mitigation is recommended.	NE
E	No development would take place on the Madera site or on the North Fork site.	NE	No mitigation is recommended.	NE

4.3 WATER RESOURCES

Surface Water

A.	The Madera site is located almost completely within a Federal	LTS	<ul style="list-style-type: none"> To reduce the project's potential to increase surface runoff, 	LTS
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<p>Emergency Management Agency (FEMA) defined 100-year flood plain. The Grading and Drainage Plan (Appendix K) incorporates fill to elevate the finished floor of the proposed gaming facility at least one foot above the FEMA 100-year floodplain so that effects to building structure and patron safety during a flood event would be less than significant.</p> <p>Alternative A would create a loss of floodplain storage and increased storm runoff. The construction of a storm drainage system, grassy swales, and stormwater detention basins in the project design would mitigate the loss of flood storage and increased runoff. Since a loss of flood-storage would not occur and post-project runoff and flow rates would equal pre-project levels with detention basins, impacts to flooding would be less than significant. Nonetheless, mitigation measures are proposed that would further reduce impacts to flooding</p>		<p>impervious surfaces shall be minimized where feasible. Where feasible, all areas outside of buildings and roads will be kept as permeable surfaces, either as vegetation or high infiltration cover such as mulch, gravel, or turf block. Pedestrian pathways shall use a permeable surface where possible, such as crushed aggregate or stone with sufficient permeable joints (areas between stone or brick if used). Rooftops shall drain to vegetated driplines to maximize infiltration prior to concentrating runoff.</p> <ul style="list-style-type: none"> ▪ An erosion control plan will be developed with the primary intent to decrease pollutants entering the water columns, with a secondary intent of trapping pollutants before they exit the site. ▪ The Tribe shall comply with all provisions stated in the Clean Water Act (CWA). As required by the General Construction NPDES permit issued by the USEPA under the CWA, a Storm Water Pollution Prevention Plan (SWPPP) shall be prepared that will address water quality impacts associated with construction of the project. Water quality control measures identified in the Storm Water Pollution Prevention Plan shall include, but not be limited to, Best Management Practices (BMPs) described below: <ul style="list-style-type: none"> ○ Existing vegetation shall be retained where possible. To the extent feasible, grading activities shall be limited to the immediate area required for construction. ○ Temporary erosion control measures (such as silt fences, staked straw bales, and temporary revegetation) shall be employed for disturbed areas. ○ No disturbed surfaces shall be left without erosion control measures in place during the winter and spring months. 	

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		<ul style="list-style-type: none"> ○ Sediment shall be retained on-site by a system of sediment basins, traps, or other appropriate measures. ○ A spill prevention and countermeasure plan shall be developed, if necessary, which will identify proper storage, collection, and disposal measures for potential pollutants (such as fuel, fertilizers, pesticides, etc.) used on-site. ○ Petroleum products shall be stored, handled, used, and disposed of properly. ○ Construction materials, including topsoil and chemicals, shall be stored, covered, and isolated to prevent runoff losses and contamination of groundwater. ○ Fuel and vehicle maintenance areas shall be established away from all drainage courses and designed to control runoff. ○ Sanitary facilities shall be provided for construction workers. ○ Disposal facilities shall be provided for soil wastes, including excess asphalt produced during construction. ○ All workers and contractors shall be educated in the proper handling, use, cleanup, and disposal of all chemical materials used during construction activities. ○ All contractors involved in the project shall be educated on the potential environmental damages resulting from soil erosion prior to development by conducting a pre-construction conference. Copies of 	

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		<p>the project's erosion control plan shall be distributed at this time. All construction bid packages; contracts, plans and specifications shall contain language that requires adherence to the plan.</p> <ul style="list-style-type: none"> ○ Construction activities shall be scheduled to minimize land disturbance during peak runoff periods. Soil conservation practices shall be completed during the fall to reduce erosion during the rainy seasons. ○ Construction zones shall be created and only one part of a construction zone shall be graded at a time to minimize exposed areas. If possible, grading on a particular zone shall be delayed until protective cover is restored on the previously graded zone. ○ Utility installations shall be coordinated to limit the number of excavations. ○ Disturbed soils shall be protected from rainfall during construction by preserving as much natural cover, topography, and drainage as possible. Trees and shrubs shall not be removed unnecessarily. ○ Disturbed areas shall be stabilized as promptly as possible, especially on long or steep slopes. Recommended plant materials and mulches shall be used to establish protective ground cover. Vegetation such as fast growing annual and perennial grasses shall be used to shield and bind the soil. Mulches and artificial binders shall be used until vegetation is established. Where truck traffic is frequent, gravel approaches shall be used to reduce soil compaction and limit the tracking of sediment off site. ○ Surface water runoff shall be controlled by directing flowing water away from critical areas and by 	

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		<p>reducing runoff velocity. Diversion structures such as terraces, dikes, and ditches shall collect and direct runoff water around vulnerable areas to prepared drainage outlets. Surface roughening, berms, check dams, hay bales, or similar devices shall be used to reduce runoff velocity and erosion.</p> <ul style="list-style-type: none"> ○ Sediment shall be contained when conditions are too extreme for treatment by surface protection. Temporary sediment traps, filter fabric fences, inlet protectors, vegetative filters and buffers, or settling basins shall be used to detain runoff water long enough for sediment particles to settle out. ○ Topsoil removed during construction shall be carefully stored and treated as an important resource. Berms shall be placed around topsoil stockpiles to prevent runoff during storm events. ○ The disturbance of soils shall be avoided and minimized as fully as possible. <ul style="list-style-type: none"> ▪ Fertilizer use shall be limited to the minimum amount necessary, taking into account any nutrient levels in the recycled water source. Fertilizer shall not be applied prior to a rain event. ▪ Landscape irrigation shall be adjusted based on weather conditions and shall be reduced or eliminated during the wet portion of the year in order to prevent excessive runoff. ▪ The sprayfield shall be designed so that any wastewater runoff is captured and not allowed to run off the site or enter waters of the U.S. ▪ At least 15 percent of surface parking areas shall be constructed of pervious surfaces. 	

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B	Similar to Alternative A.	LTS	Same as Alternative A.	LTS
C	Similar to Alternative A.	LTS	Same as Alternative A.	LTS
D	<p>According to FEMA, the North Fork site is designated as being located within the Sierra National Forest Zone D where flood hazards are undetermined. Since the North Fork site is located in a mountainous, forested region with steep topography, flooding associated with a 100-year floodplain is very unlikely to occur.</p> <p>Construction of Alternative D would create new impervious surfaces which would prevent groundwater infiltration and increase surface runoff, potentially causing flooding. A Drainage Plan has been prepared that includes storm drainage improvements, including an overland drainage release and stormwater detention basin. A loss of flood-storage would not occur and post-project runoff and flow rates would equal pre-project levels with the detention basins. Nonetheless, mitigation measures are proposed that would further reduce impacts to flooding.</p> <p>It is unknown whether on-site surface waters are connected to groundwater. It is possible, although unlikely given the low levels of pumping that would occur under Alternative D that a significant affect to surface water flows would occur from project pumping.</p>	S	<p>Same as Alternative A, as well as:</p> <ul style="list-style-type: none"> ▪ The Tribe shall implement a stream flow monitoring program for all on-site streams as soon as is feasible after project approval and preferably at least one year before opening of the project facilities to the public (to allow for baseline monitoring). ▪ Should project pumping (considered separately from other new projects in the area and weather considerations) cause the reduction of on-site stream flows by 25 percent or more, the Tribe shall implement a program to reduce surface water flow impacts in consultation with the USEPA and Madera County. ▪ The sprayfield shall be designed so that any wastewater runoff is captured and not allowed to run off the site and enter waters of the U.S. ▪ At least 15 percent of surface parking areas shall be constructed of pervious surfaces. 	LTS
E	The No Action Alternative would not result in any site grading, construction, or new development. Thus, the existing drainage from the Madera site and North Fork site would continue to flow off-site unimpeded. Flooding at the Madera site would consist of inundation of present day, agricultural landforms.	NE	No mitigation is recommended.	NE

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Groundwater			
A On-site groundwater resources would be utilized under Alternative A. Groundwater recharge may not be sufficient to compensate for drawdown effects caused by pumping. Adjacent groundwater wells may also be impacted by a lowered water table, but impacts would remain less than significant. Nonetheless, mitigation measures are proposed that would reduce drawdown impacts to groundwater.	LTS	<ul style="list-style-type: none"> Stormwater BMPs that promote infiltration of water from stormwater runoff and on-site disposal of treated wastewater shall be implemented. BMPs for enhancing infiltration of stormwater runoff have the potential to increase the rate of natural recharge at the site, while on-site disposal of treated wastewater will return groundwater originating from the casino wells back to the aquifer. The effectiveness of these measures to reduce drawdown impacts is directly proportional to the rate of new recharge compared with the pumping rate (see Appendix L). Given the limited amount of rainfall received in Madera County, additional recharge from stormwater BMPs would have a minimal effect on the drawdown effects of on-site pumping, offsetting such effects by only 1.6 percent. Irrigating on-site landscaping combined with the use of on-site sprayfields and/or leachfields would have a far greater offsetting effect on the aquifer, reducing drawdown from 7 to 67 percent. Under each alternative, if treated wastewater is disposed via a leachfield, the recharge rate would be at the upper end of this range; whereas, if the treated wastewater is disposed in a sprayfield, the recharge rate would be in the lower end of the range (see Appendix L, Section 6.7.2 for a detailed breakdown of potential recharge rates for each disposal option).. If on-site groundwater resources are used for water supply, groundwater sampling and analysis shall be performed to determine if treatment is necessary. If treatment is necessary, an on-site water treatment plant shall be constructed to treat drinking water to USEPA standards. The Tribe shall adopt water conservation measures, such as electronic dispensing devices in faucets, low flow toilets, low 	LTS

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		<p>flow showerheads, and the use of native plants in landscaping, to reduce the consumption of groundwater as recommended by the regional groundwater management plan.</p> <ul style="list-style-type: none"> ▪ Effects to regional overdraft shall be reduced by Tribal contributions to a reserved water bank or groundwater recharge area in an amount at least equivalent to property pumping rates. Possible groundwater recharge areas include areas operated or proposed by the Madera Irrigation District (MID)(Appendix L). The Tribe has executed a Memorandum of Understanding (MOU) (Appendix C) with MID that provides for equivalent water contributions to a MID recharge area should development under Alternative A occur. Therefore this mitigation measure would not apply to Alternative ▪ The Tribe shall implement a groundwater monitoring program (described in Appendix L) as soon as is feasible after project approval and preferably at least one year before opening of the project facilities to the public (to allow for baseline monitoring). ▪ The Tribe shall implement a program to compensate neighboring well owners for impacts to well operation. The actual amount of interference drawdown associated with the project and the future rate of regional groundwater level decline shall be estimated from the groundwater monitoring program (Appendix L). At least one year of baseline data and one year of data after project pumping begins should be collected prior to implementation of the following well impact compensation program: <ul style="list-style-type: none"> a. Reduction in usable well life –The tribe shall reimburse the owners of wells that become unusable within 30 years of the onset of project pumping for a portion of the prevailing, customary cost for well replacement, rehabilitation or deepening. In order to be eligible, the well owner will need to provide the tribe with documentation of the well location and completion data, 	

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		<p>and prove that the well was constructed and usable before project pumping was initiated. The percentage of the cost reimbursed by the tribe shall depend upon the degree to which the well's usable life is shortened as determined from data gathered during the groundwater level monitoring program and water level data gathered by others. Specifically, the following approach shall be used:</p> <ul style="list-style-type: none"> i. Regional groundwater monitoring data for the period between the time that pumping for the project begins and the well becomes unusable will be analyzed using a best-fit line approach to determine the regional rate of groundwater level decline in feet per year; ii. Groundwater monitoring data for the project will be used to assess the amount of drawdown in feet experienced by the affected well for which the project is responsible; iii. The number of years by which the well's life is shortened due to the project will be calculated by dividing the amount of drawdown induced by the project by the calculated annual rate of regional water level decline; and iv. The Tribe shall reimburse the well owner for the cost of replacing or deepening the unusable well at a rate of 10 percent of the customary and prevailing cost for each year that the well life is shortened due to the project. <p>b. Groundwater level falling near or below pump intake – The concept of usable well life can also be applied to this impact, except that the well's usable life is extended</p>	

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		<p>by lowering the pump intake. The impact of project pumping on shortening this time period would be similar to the impact on shortening well life, and shall be determined using the same methodology described above. The tribe shall reimburse the owners of wells with pumps that require lowering within 30 years of the onset of project pumping for a portion of the prevailing, customary cost for this service. The percentage of the cost reimbursed by the tribe shall depend upon the degree to which the time period until a well's pump intakes require lowering at a rate of 10% of the cost of lowering the pump or pump intake for each year that the well's life with the pump at the original position is shortened. In order to be eligible, the well owner will need to provide the tribe with documentation of the well location and completion data, including pump intake depth, and prove that the well was constructed and usable before project pumping was initiated. The Tribe must be made aware of the cost reimbursement claim prior to lowering of the pump intake, so that the need for possible well deepening, replacement or rehabilitation can be assessed and inefficiencies can be avoided. At the Tribe's discretion, compensation may be paid toward well deepening, replacement or rehabilitation in lieu of toward lowering the pump intake.</p> <p>c. Increased Electrical and Maintenance Cost – The Tribe shall reimburse well owners pumping more than 100 AF/year for their additional annual electrical costs (for no longer than 30 years) at the prevailing electrical rate based on the following formula:</p> <p align="center">KW/hr/year = (gallons Pumped/year) x (feet of interference drawdown)</p> <p align="center">1621629</p>	
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		<p>In order to qualify for reimbursement, the well owner must provide proof of the actual annual volume of water pumped. As an alternative to annual payments, a one-time lump sum payment of a mutually agreeable amount could be made.</p> <p>d. No reimbursement would be made available for wells installed after operation of the project.</p> <p>e. For any of the above impacts, the Tribe may choose at its discretion to provide the well owner with a connection to a local public or private water supply system in lieu of the above mitigation measures, at a reduced cost in proportion to the extent the impact was caused by project pumping.</p> <p>f. The known owners of identified wells within two miles of the project pumping well shall be notified of the well impact compensation program outlined above before project pumping begins.</p> <p>g. The Tribe shall contract with a third party such as the County of Madera to oversee this well impact compensation program.</p>	
B Water would be supplied by privately operated wells on-site. Analysis of the drawdown curves shows that all of the known off-site wells located within a one-mile radius of the Madera site would experience some drawdown effects from proposed pumping on the site. A significant effect to neighboring wells from on-site groundwater pumping would not occur. Nonetheless, mitigation measures are proposed to reduce the impacts of drawdown.	LTS	Same as Alternative A, plus effects to regional overdraft shall be reduced by Tribal contributions to a reserved water bank or groundwater recharge area in an amount at least equivalent to property pumping rates.	LTS
C Similar to Alternative B, except lesser effects to drawdown.	LTS	Same as Alternative A, plus effects to regional overdraft shall be reduced by Tribal contributions to a reserved water bank or	LTS

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		groundwater recharge area in an amount at least equivalent to property pumping rates.	
D If on-site groundwater is utilized, new pumping wells on the North Fork site would be constructed. The proposed pumping rate is comparable to, or lower than, the tested sustainable pumping rates of existing wells in the area of the North Fork site; therefore, the aquifer would likely produce water at the proposed rate. Potentially significant effects to neighboring wells ranging from reduced pumping capacity to a well going dry could occur. Mitigation measures are included that would reduce drawdown impacts to a less than significant level.	S	Same as Alternative A.	LTS
E No impacts to groundwater would occur.	NE	No mitigation is recommended	NE
Water Quality			
A Discharges of pollutants to surface waters from construction activities associated with development of Alternative A would be subject to Clean Water Act permitting requirements. Compliance with USEPA requirements would ensure impacts to water quality during construction would be less than significant. Nonetheless, see Section 5.2.2 for a list of recommended mitigation measures, including recommended BMPs for incorporation into a SWPPP.	LTS	Same mitigation measures as listed for Surface Water Impacts (above).	LTS
Runoff from operation of project facilities, especially surface parking lots, could flush trash, debris, oil, sediments, and grease into downstream surface waters, impacting water quality. Site planning includes minimization of impermeable surfaces, stormwater detention basins, and sediment/grease traps to reduce and control impacts to downstream resources.			

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<p>Wastewater treatment may occur at the City of Madera wastewater treatment plant (WWTP), which is treated to State and Federal standards before disposal. Therefore, no significant impacts to surface water quality would occur from implementation of off-site wastewater treatment. Alternatively, wastewater may be treated at an on-site WWTP. The proposed treatment and disposal facility provides for the use of reclaimed water for specified uses. All water used for reclamation would be of a quality consistent with California Department of Health Services (DHS) regulations under Title 22, Division 4, Chapter 3, of the California Administrative Code. The water produced by this treatment system is highly treated, exceeds State and Federal standards, and poses no health risks for the intended uses. Disposal options for on-site treatment include surface water discharge, spray disposal, sub-surface disposal, or a combination of surface and sub-surface disposal. Surface water discharge requires acquisition of an NPDES permit. Due to the high quality of effluent, impacts to water quality from wastewater treatment would be less than significant.</p>				
B	Similar to Alternative A.	LTS	Same as Alternative A.	LTS
C	Similar to Alternative A.	LTS	Same as Alternative A.	LTS
D	<p>Discharges of sediment and pollutants to surface waters from construction activities and accidents are subject to Clean Water Act permitting requirements. Operational impacts of Alternative D stormwater runoff would be similar to those of Alternative A, except at a different location (the North Fork site).</p> <p>Options for wastewater treatment include off-site and on-site treatment. Each of these options would satisfy State and Federal standards. Wastewater treatment may occur at the</p>	LTS	<ul style="list-style-type: none"> ▪ Stormwater BMPs that promote infiltration of water from stormwater runoff and on-site disposal of treated wastewater shall be implemented. BMPs for enhancing infiltration of stormwater runoff have the potential to increase the rate of natural recharge at the site, while on-site disposal of treated wastewater will return groundwater originating from the casino wells back to the aquifer. ▪ If on-site groundwater resources are used for water supply, groundwater sampling and analysis shall be performed to 	LTS

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<p>County-operated WWTP that serves the Community of North Fork. Wastewater at the County WWTP is treated to State and Federal standards before disposal; therefore, less than significant impacts to surface water quality would occur from use of the off-site WWTP for disposal. Alternatively, wastewater may be treated at an on-site WWTP. All water used for reclamation would meet Title 22 standards of the California Code of Regulations.</p> <p>Disposal options for on-site treatment include, surface water discharge, spray disposal, sub-surface disposal, or a combination of surface and sub-surface disposal. Surface water discharge requires acquisition of an NPDES permit. Due to the high quality of effluent, impacts to water quality from wastewater treatment would be less than significant.</p>		<p>determine if treatment is necessary. If treatment is necessary, an on-site water treatment plant shall be constructed to treat drinking water to USEPA standards.</p> <ul style="list-style-type: none"> ▪ The Tribe shall adopt water conservation measures, such as electronic dispensing devices in faucets, low flow toilets, and the use of native plants in landscaping, to reduce the consumption of groundwater as recommended by the regional groundwater management plan. ▪ The Tribe shall implement a groundwater monitoring program (described in Appendix L) as soon as is feasible after project approval and preferably at least one year before opening of the project facilities to the public (to allow for baseline monitoring). ▪ The Tribe shall implement a program to compensate neighboring well owners for impacts to well operation. The actual amount of interference drawdown associated with the project and the future rate of regional groundwater level decline shall be estimated from the groundwater monitoring program (Appendix L). At least one year of baseline data and one year of data after project pumping begins should be collected prior to implementation of the following well impact compensation program: <ul style="list-style-type: none"> ○ Reduction in usable well life –The tribe shall reimburse the owners of wells that become unusable within 30 years of the onset of project pumping for a portion of the prevailing, customary cost for well replacement, rehabilitation or deepening. The percentage of the cost reimbursed by the tribe shall depend upon the degree to which the well's usable life is shortened: 5 % for one year, 10% for two years and 15 % for three years. In order to be eligible, the well owner 	

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		<p>will need to provide the tribe with documentation of the well location and completion data, and prove that the well was constructed and usable before project pumping was initiated.</p> <ul style="list-style-type: none"> Groundwater level falling near or below pump intake – The concept of usable well life can also be applied to this impact, except that the well's usable life is extended by lowering the pump intake. The impact of project pumping on shortening this time period would be similar to the impact on shortening well life, and shall be determined by dividing the amount of interference drawdown at the off-Site well by the regional rate of groundwater decline. The tribe shall reimburse the owners of wells with pumps that require lowering within 30 years of the onset of project pumping for a portion of the prevailing, customary cost for this service. The percentage of the cost reimbursed by the tribe shall depend upon the degree to which the time period until a well's pump intakes require lowering at a rate of 10% for each year. In order to be eligible, the well owner will need to provide the tribe with documentation of the well location and completion data, including pump intake depth, and prove that the well was constructed and usable before project pumping was initiated. The Tribe must be made aware of the cost reimbursement claim prior to lowering of the pump intake, so that the need for possible well deepening, replacement or rehabilitation can be assessed and inefficiencies can be avoided. At the Tribe's discretion, compensation may be paid toward well deepening, replacement or rehabilitation in lieu of toward lowering the pump intake. 	

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SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		<ul style="list-style-type: none"> ○ Increased Electrical and Maintenance Cost – The Tribe shall reimburse well owners pumping more than 100 AF/year for their additional annual electrical costs (for no longer than 30 years) at the prevailing electrical rate based on the following formula: 	
		<p style="text-align: center;">KWhr/year = (gallons Pumped/year) x (feet of interference drawdown)</p> <p style="text-align: center;">1621629</p>	
		<ul style="list-style-type: none"> ▪ In order to qualify for reimbursement, the well owner must provide proof of the actual annual volume of water pumped. As an alternative to annual payments, a one-time lump sum payment of a mutually agreeable amount could be made. <ul style="list-style-type: none"> ○ No reimbursement would be made available for wells installed after operation of the project. ○ For any of the above impacts, the Tribe may choose at its discretion to provide the well owner with a connection to a local public or private water supply system in lieu of the above mitigation measures, at a reduced cost in proportion to the extent the impact was caused by project pumping. ○ The known owners of identified wells within two miles of the project pumping well shall be notified of the well impact compensation program outlined above before project pumping begins. ○ The Tribe shall contract with a third party such as the County of Madera to oversee this well impact compensation program. 	

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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
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E Since existing land uses would persist and no wastewater would be generated, there would be no effect on current water quality.	NE	No mitigation is recommended.	NE
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4.4 AIR QUALITY

Construction-Related Impacts

A Alternative A would result in new construction activity, which would generate air pollutant emissions, primarily PM ₁₀ from entrainment of fugitive dust from land clearing, earth moving, and wind erosion of exposed soil. Construction activities such as grading, excavation and travel on unpaved surfaces can generate substantial amounts of dust, and can lead to elevated concentrations of PM ₁₀ . The generation of construction-related emissions is considered a short-term significant impact.	S	<ul style="list-style-type: none"> ▪ All construction mitigation measures shall be incorporated into a Construction Emissions Mitigation Plan. ▪ During construction, the Tribe shall comply with San Joaquin Valley Air Pollution Control District (SVAPCD) Regulation VIII (Fugitive Dust Rules). ▪ Prior to the start of any construction activity on the site, the Tribe shall create a Dust Control Plan pursuant to SVAPCD Rule 8021. Implementation of SVAPCD Rule 8021 would limit visible dust emissions to 20 percent opacity. ▪ In addition to full compliance with all applicable Regulation VIII requirements, the Tribe shall implement the following dust control practices, drawn from Tables 6-2 and 6-3 of SVAPCD's Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI), during construction: <ul style="list-style-type: none"> ○ All disturbed areas, including soil stockpiles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover. ○ All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical 	LTS
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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		<p>stabilizer/suppressant.</p> <ul style="list-style-type: none"> ○ All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking. ○ When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, or at least six inches of freeboard space from the top of the container shall be maintained. ○ All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.) ○ Following the addition of materials to, or the removal of materials from, the surface of outdoor soil stockpiles, piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant. ○ Limit traffic speeds on unpaved roads to 15 mph; and ○ Install erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent. <ul style="list-style-type: none"> ▪ The Tribe shall prepare an inventory of all equipment prior to construction and identify the suitability of add-on emission controls for each piece of equipment before 	

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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		<p>groundbreaking. Control technologies such as particle traps control approximately 80 percent of diesel particulate matter. Specialized catalytic converters (oxidation catalysts) control approximately 20 percent of diesel particulate matter, 40 percent of carbon monoxide emissions, and 50 percent of hydrocarbon emissions.</p> <ul style="list-style-type: none"> ▪ The Tribe shall ensure that diesel-powered construction equipment is properly tuned and maintained, and shut off when not in direct use. ▪ The Tribe shall prohibit engine tampering to increase horsepower, except when meeting manufacturer's recommendations. ▪ The Tribe shall locate diesel engines, motors, and equipment staging areas as far as possible from the closest residences. ▪ The Tribe shall require the use of low sulfur diesel fuel (<15 parts per million sulfur) for diesel construction equipment, if available. ▪ The Tribe shall reduce construction-related trips of workers and equipment, including trucks. A construction traffic and parking management plan shall be developed that minimizes traffic interference and maintains traffic flow. ▪ The Tribe shall lease or buy newer, cleaner equipment (1996 or newer model), using a minimum of 75 percent of the equipment's total horsepower. ▪ The Tribe shall use lower-emitting engines and fuels, including electric, liquefied gas, hydrogen fuel cells, and/or alternative diesel formulations. 	

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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
B Similar to Alternative A.	S	Same as Alternative A.	LTS
C Similar to Alternative A.	S	Same as Alternative A.	LTS
D Similar to Alternative A.	S	Same as Alternative A.	LTS
E The No Action Alternative would not result in construction activity. Therefore, this alternative would not result in the generation of emissions associated with construction.	NE	No mitigation is recommended.	NE
Operation-Related Impacts			
A Operation of Alternative A would result in the generation of ROG and NO _x emissions. Both ROG and NO _x emissions would be more than the 10-ton-per-year significance thresholds and would be a significant effect. The emissions associated with operation of Alternative A can be reduced <u>to a less than significant level</u> with implementation of mitigation measures, but not to a less than significant level.	S	<ul style="list-style-type: none"> ▪ The Tribe shall provide transportation (e.g., shuttles) to major transit stations and multi-modal centers. ▪ The Tribe shall provide transit amenities such as bus turnouts; shelter benches; street lighting, route signs, and displays in and around the transit shelter benches to encourage public use of the transit service. ▪ The Tribe shall contribute to dedication of land for off-site bicycle trails linking the project to designated bicycle commuting routes in accordance with the regional Bikeway Master Plan. ▪ The Tribe shall maximize the potential of passive solar design principles where feasible. ▪ The Tribe shall ensure the use of clean fuel vehicles in the vehicle fleet where practicable. ▪ The Tribe shall provide a parking lot design that includes clearly marked and shaded pedestrian pathways between transit facilities and building entrances. ▪ The Tribe shall provide amenities such as personal lockers and showers, bicycle lockers and racks, bus pass 	LTS

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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		<p>subsidies and flexible schedules for employees who walk, bike, or utilize public transit to work.</p> <ul style="list-style-type: none"> ▪ The Tribe shall provide electric vehicle charging facilities. ▪ The Tribe shall provide preferential parking for vanpools and carpools. ▪ The Tribe shall provide on-site pedestrian facility enhancements such as walkways, benches, proper lighting, vending machines, and building access, which are physically separated from parking lot traffic. ▪ If the parking structure includes mechanical ventilation and exhaust, the exhaust should be vented in a direction away from inhabited areas. ▪ The Tribe shall provide adequate ingress and egress at entrances to the Casino to minimize vehicle idling and traffic congestion. ▪ The Tribe shall contract only with commercial landscapers who operate equipment that complies with the most recent California Air Resources Board certification standards, or standards adopted no more than three years prior to date of use. ▪ The Tribe shall adopt an anti-idling ordinance for the facility. To help maintain compliance with this ordinance, the Tribe should consider creating a driver's lounge, where drivers can wait and occupy themselves comfortably instead of sitting in their buses or trucks. ▪ Adoption of the above mitigation will reduce the operational impacts of the alternatives on air quality, but not to a less than significant level. ▪ The Tribe shall implement or fund the implementation of one or more of the following measures to reduce NOx, 	

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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		<p>ROG, and PM10 emissions to less than the SJVAPCD thresholds, which would result in a less than significant impact to Alternatives A, B, and C. Table 5-1 shows the reductions necessary for each alternative.</p> <ul style="list-style-type: none"> ○ Pave or resurface unpaved roadway(s) or roadway(s) in a deteriorated state within the San Joaquin Valley Air Basin, which have a minimum daily vehicle count of 100 vehicles. ○ Contribute to a program to retrofit residential fireplaces that do not meet EPA certification standards within the San Joaquin Valley Air Basin. ○ Purchase low emission buses to replace older municipal or school buses used within the San Joaquin Valley Air Basin. ○ Purchase hybrid vehicles to replace existing governmental fleet vehicles within the San Joaquin Valley Air Basin. ○ Purchase and install on-site or within the San Joaquin Valley Air Basin; a photovoltaic array, wind powered energy, and/or other form(s) of renewable energy. ○ Contribute a fair share percentage to the synchronization of traffic signals within the San Joaquin Valley Air Basin. ○ Purchase Emission Reduction Credits that are available from sources within the San Joaquin Valley Air Basin. 	
B Similar to Alternative A, but lower emissions.	S	Same as Alternative A.	LTS

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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
C Similar to Alternative A, but lower emissions.	S	Same as Alternative A with the addition of the following: <ul style="list-style-type: none"> The Tribe shall encourage reduced setbacks for retail and employment land uses on streets with bus services consistent with zoning code requirements. The Tribe shall provide adequate ingress and egress at entrances to public facilities to minimize vehicle idling and traffic congestion. The Tribe shall encourage a development pattern that discourages auto-oriented uses in areas adjacent to bus stops and other transit facilities. 	LTS
D Operation of Alternative D would result in the generation of ROG and NO _x emissions. Both ROG and NO _x emissions would be less than the 10 tons per year significance thresholds.	LTS	<ul style="list-style-type: none"> The Tribe shall adopt an anti-idling ordinance for the facility. To help maintain compliance with this ordinance, the Tribe should consider creating a driver's lounge, where drivers can wait and occupy themselves comfortably instead of sitting in their buses or trucks. 	LTS
E The No Action Alternative would not result in the generation of emissions other than that minimal emissions currently generated by residential and/or agricultural activities.	LTS	No mitigation is recommended.	LTS

Carbon Monoxide Impacts

A As described in the traffic study, traffic operations at signalized study intersections would have a level of service (LOS) D or better under 2008 background conditions with Alternative A and incorporated traffic mitigation measures. Intersections operating at LOS D or better typically do not result in Carbon Monoxide (CO) concentrations that exceed State or Federal standards. This impact is significant, however with traffic mitigation would be reduced to less than significant.	S	Mitigation is the same as that listed for traffic impacts in Section 5.2.7.	LTS
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ENVIRONMENTAL EFFECT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
B	Similar to Alternative A.	S	Mitigation is the same as that listed for traffic impacts in Section 5.2.7.	LTS
C	Similar to Alternative A.	S	Mitigation is the same as that listed for traffic impacts in Section 5.2.7.	LTS
D	Similar to Alternative A.	S	Mitigation is the same as that listed for traffic impacts in Section 5.2.7.	LTS
E	Similar to Alternative A.	S	Mitigation is the same as that listed for traffic impacts in Section 5.2.7.	LTS
Odor Impacts				
A	There are no odor generators that might impact Alternative A and Alternative A itself would not contribute odors to the region. Unlike common open pond WWTPs, the proposed on-site WWTP would utilize Membrane Bioreactor (MBR) technology, would be fully enclosed, and would not produce odors. However, even a MBR WWTP, if not properly operated, could represent a potentially significant source of odors.	S	<ul style="list-style-type: none"> ▪ The WWTP shall be constructed with comprehensive odor control facilities, including the injection of odor control oxidants at the sewage lift station and construction of covered headworks with odor scrubber at the wastewater treatment plant. ▪ Spray drift from the WWTP or spray disposal field shall not migrate out of the disposal field boundaries. ▪ Spray field irrigation shall cease when winds exceed 30 mph. ▪ The WWTP shall be staffed with operators who are qualified to operate the plant safely, effectively, and in compliance with all permit requirements and regulations. The operators shall have qualifications similar to those required by the State Water Resources Control Board Operator Certification Program for municipal wastewater treatment plants. This program specifies that for tertiary level wastewater treatment plants with design capacities of 1.0 MGD or less, the chief plant operator must be 	LTS

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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		a Grade III operator. Supervisors and Shift Supervisors must be Grade II operators. An Operations and Maintenance Program must be followed by the plant operators. Emergency preparedness shall include all appropriate measures, including a high level of redundancy in the major systems.	
B Similar to Alternative A.	S	Same as Alternative A.	LTS
C Similar to Alternative A.	S	Same as Alternative A, as well as:	LTS
		<ul style="list-style-type: none"> Prior to construction, the Tribe shall obtain a letter from the SJVAPCD confirming that the proposed use will not create an objectionable odor. 	
D Similar to Alternative A.	S	Same as Alternative A.	LTS
E The No Action Alternative would not result in the generation of odors.	NE	No mitigation is recommended.	NE

Toxic Air Contaminant Impacts

A Proposed development under Alternative A would not contribute or generate toxic air contaminants. However, bus and diesel truck traffic to and from the development, especially in loading areas, would result in an increased concentration of diesel emissions in those areas, leading to a potentially significant effect. Application of mitigation measures associated with loading docks would result in a less than significant effect.	S	<ul style="list-style-type: none"> Air intakes associated with the heating and cooling system for buildings shall not be located next to potential TAC-emitting locations (e.g., loading docks) in accordance with the California Air Resources Board's (CARB) Air Quality and Land Use Handbook. 	LTS
B Similar to Alternative A.	S	Same as Alternative A.	LTS

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ENVIRONMENTAL EFFECT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
C	Similar to Alternative A.	S	Same as Alternative A.	LTS
D	Similar to Alternative A.	S	Same as Alternative A.	LTS
E	The No Action Alternative would not result in the generation of toxic air contaminants. Existing diesel emissions from agricultural operations on the Madera site would continue. These emissions would be temporary and relatively infrequent resulting in a less than significant effect.	LTS	No mitigation is recommended.	LTS
Asbestos Impacts				
A	Implementation of Alternative A could result in the demolition of existing structures on the Madera site. Airborne asbestos fibers pose a serious health threat if adequate control techniques are not carried out when the material is disturbed. Any demolition activity will be subject to the requirements of the Asbestos National Emission Standards for Hazardous Air Pollutants, 40 CFR sections 61.140 through 61.157. Strict compliance with these regulations will result in a less than significant impact. Based on the fact that Alternative A is located on the valley floor, no naturally occurring asbestos (NOA) would be expected. No off-site fill that could potentially contain NOA would be required because on-site grading would balance. Thus, a less than significant effect from NOA would result.	LTS	No mitigation is recommended.	LTS
B	Similar to Alternative A.	LTS	No mitigation is recommended.	LTS
C	Similar to Alternative A.	LTS	No mitigation is recommended.	LTS
D	Similar to Alternative A except that the North Fork site is in a candidate area for NOA, resulting in the potential for potentially	S	<ul style="list-style-type: none"> ▪ Prior to any grading at the site, the Tribe shall ensure that a geologic evaluation is conducted to determine if NOA is present within the construction area. Should NOA or evidence of NOA 	LTS

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ENVIRONMENTAL EFFECT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
significant asbestos emissions during construction.			be found on-site, the primary contractor shall be notified of and required to comply with construction standards equivalent to CARB's Asbestos Airborne Toxic Control Measure (ATCM) regulating serpentine and asbestos-bearing ultramafic rock materials used for surfacing applications subjected to vehicular, pedestrian, or non-pedestrian use, such as cycling and horse-back riding.	
E	No new development or ground disturbance would occur under Alternative E. Existing ground disturbance associated with agricultural activities would continue on the Madera site. However, given that the Madera site is not located in an area where NOA is expected to occur, a less than significant effect from asbestos emissions would occur under the No Action Alternative.	LTS	No mitigation is recommended.	LTS
Federal Class I Areas Impacts				
A	Yosemite National Park, Pinnacles National Monument, Ansel Adams Wilderness Area, Kaiser Wilderness Area, and John Muir Wilderness Area are the only federal Class I areas within 100 kilometers of the Madera site. Analysis of operational emissions associated with Alternative A show that Alternative A does not constitute a "major source" and therefore does not trigger need for preconstruction review and assessment of impacts. Thus, a less than significant effect to Class I areas would result.	LTS	No mitigation is recommended.	LTS
B	Similar to Alternative A.	LTS	No mitigation is recommended.	LTS
C	Similar to Alternative A.	LTS	No mitigation is recommended.	LTS
D	Similar to Alternative A.	LTS	No mitigation is recommended.	LTS

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ENVIRONMENTAL EFFECT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
E	Given that no new development would occur and existing emissions associated with residential and agricultural activities on the Madera and North Fork sites does not rise to the level of a "major source," the No Action Alternative would not result in significant impacts to federal Class I areas.	LTS	No mitigation is recommended.	LTS
Climate Change				
A	Implementation of Alternative A would generate greenhouse gases, which would contribute to global climate change impacts. Implementation of mitigation measures would reduce emissions of greenhouse gases and lessen impacts associated with climate change.	S	<ul style="list-style-type: none"> ▪ Buses and other commercial diesel-fueled vehicles shall comply with the California Air Resource Board's (CARB) Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling (California Code of Regulations, Title 13, Division 3, Article 1, Chapter 10, Section 2485), which requires that the driver of any diesel bus shall not idle for more than five minutes at any location, except in the case of passenger boarding where a ten minute limit is imposed, or when passengers are onboard. Furthermore, the Tribe will provide a "Drivers Lounge" for bus and truck drivers to discourage idling. ▪ The Tribe shall ensure the use of low-emitting building products pursuant to Integrated Waste Management Board's Section 01350 where feasible. ▪ The Tribe shall ensure use of low-emission, central, or tankless water heaters and install wall insulation that shall exceed Title 24 requirements. ▪ The Tribe shall use energy efficient appliances in the hotel and casino. ▪ Environmentally preferable materials shall be used to the extent practical for construction of facilities. ▪ Implementation of Mitigation Measures P, Q, U, and V. 	LTS

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			<ul style="list-style-type: none"> The Tribe shall maintain all vehicles to manufacturers' specifications. This mitigation measure would reduce emission that occurs when vehicles are not maintained. The Tribe shall ensure that the project will provide multiple and/or direct pedestrian access to adjacent, complementary land uses and throughout the project. This mitigation measure would encourage walking to destinations adjacent to the proposed project and thus, reduce vehicle trips. 	
B	Similar to Alternative A.	S	Same as Alternative A.	LTS
C	Similar to Alternative A.	S	Same as Alternative A.	LTS
D	Similar to Alternative A.	S	Same as Alternative A.	LTS
E	The No Action Alternative would not result in the generation of climate change impacts	NE	No mitigation is required.	NE
Indoor Air Quality				
A	Tobacco smoke contains carcinogens (including Polycyclic Organic Matter) and smoking would be permitted indoors at the casino, resulting in a potentially significant effect to public health.	S	<ul style="list-style-type: none"> The casino floor shall be ventilated to at least the standards of the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE), <i>Ventilation for Acceptable Indoor Air Quality</i>, ASHRAE Standard 62-2001. The Tribe shall ensure that comfort levels are acceptable to most occupants, and consistent with ASHRAE Standard 55-1992, under all operating conditions. The Tribe shall ensure that significant expected sources of pollutant emissions are isolated from occupants using physical barriers, exhausts, and pressure controls. 	LTS

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		<ul style="list-style-type: none"> A non-smoking gaming area shall be provided. <u>The Tribe shall ensure the use of low-emitting building products pursuant to Integrated Waste Management Board's Section 01350 where feasible.</u> Signage shall be displayed or brochures made available to casino patrons describing the health effects of second-hand smoke. The Tribe shall provide notice of the health effects of secondhand smoke exposure to employees upon hire. Outdoor air entering the building shall be protected from contamination from local outdoor sources, from building exhausts, and from sanitation vents. The Tribe shall ensure that provisions are made for easy access to heating, ventilation, and air conditioning (HVAC) equipment requiring periodic maintenance. The Tribe shall ensure the use of low-emitting building products. The Tribe shall ensure that occupant exposure to construction contaminants is minimized using protocols for material selection, preventive installation procedures, and special ventilation and pressure control isolation techniques The Tribe shall seek LEED certification for project components, where possible. 	
B Similar to Alternative A.	S	Same as Alternative A.	LTS
C The operation of Alternative C is in compliance with indoor air quality requirements, including environmental tobacco smoke (ETS). As smoking would be allowed in marked sections of restaurants, there are potentially significant secondhand	S	<ul style="list-style-type: none"> A non-smoking area shall be provided in restaurants. Signage shall be displayed or brochures made available to restaurant (that permit smoking) guests describing the health 	LTS

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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
tobacco smoke impacts, similar to those discussed for Alternative A.		<p>effects of second-hand smoke.</p> <ul style="list-style-type: none"> ▪ The Tribe shall provide notice of the health effects of secondhand smoke exposure to employees upon hire. ▪ The Tribe shall ensure that significant expected sources of pollutant emissions are isolated from occupants using physical barriers, exhausts, and pressure controls. ▪ The Tribe shall ensure that outdoor air entering the building is protected from contamination from local outdoor sources and from building exhausts and sanitation vents. ▪ The Tribe shall ensure that occupant exposure to construction contaminants is minimized using protocols for material selection, preventive installation procedures, and special ventilation and pressure control isolation techniques. ▪ The Tribe shall ensure that provisions are made for easy access to HVAC equipment requiring periodic maintenance. ▪ The Tribe shall seek LEED certification for project components, where possible. 	
D Similar to Alternative A.	S	Same as Alternative A.	LTS
E The No Action Alternative would not result in the generation of indoor air quality impacts.	NE	No mitigation is recommended.	NE

4.5 BIOLOGICAL RESOURCES

Less than Significant = LTS	Significant = S	No Effect = NE	Beneficial Effect = BE	
Alternative A = A	Alternative B = B	Alternative C = C	Alternative D = D	Alternative E = E
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TABLE ES-1
SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
<i>Potential Effects to Wildlife and Habitats</i>			
<p>A Development of Alternative A would affect habitats that are utilized by wildlife species. However, the affected habitat provides limited resources for wildlife due to frequent plowing and weed control measures associated with farming practices. Species found in cultivated habitats are typically widespread and accustomed to disturbances</p> <p>Potential impacts to Schmidt Creek, Dry Creek, and downstream aquatic habitat from the discharge of tertiary treated wastewater include changes in flow and vegetation characteristics of the waterways. The riparian vegetation within the Schmidt Creek ditch is not continuous and is primarily composed of herbaceous species, both upland and hydrophytic. The addition of a permanent water source in Schmidt Creek ditch would stimulate the growth of hydrophytic vegetation and create conditions for the growth of a diverse riparian habitat. The addition of high quality recycled water to Dry Creek would flush particulates, remove debris, increase low flows, and provide better habitat for anadromous fish by supplying more water for the development of shading riparian vegetation. Thus, a less than significant impact would occur.</p> <p><u>Discharge from the WWTP could potentially impact the aquatic habitat if the discharged effluent increases the water temperature of Dry Creek by more than five degrees Fahrenheit. This impact can be avoided by the implementation of mitigation measures.</u></p>	S	<ul style="list-style-type: none"> To prevent impacts to aquatic habitat due to a change in water temperature, the water temperature of Dry Creek above its confluence with Schmidt Creek shall be monitored. Measures such as a cooling pond or cooling tower shall be used if necessary to decrease the temperature of the effluent to within five degrees Fahrenheit of the temperature of the creek. In accordance with the RWQCB Basin Plan, at no time shall the temperature of the receiving body of water be altered more than five degrees Fahrenheit. 	LTS
B Similar to Alternative A.	LTS	Same as Alternative A.	LTS
C Similar to Alternative A.	LTS	Same as Alternative A.	LTS

Less than Significant = LTS

Significant = S

No Effect = NE

Beneficial Effect = BE

Alternative A = A

Alternative B = B

Alternative C = C

Alternative D = D

Alternative E = E

TABLE ES-1
SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
<p>D Development of Alternative D is within the Interior Live Oak Woodland utilized by a wide variety of fauna, and as such, would affect the vegetation community and the two streams located in the northwestern part of the property. Although there is an abundance of similar habitat within the area, the value lies in the mostly undisturbed nature of the site (intrinsic value). Wildlife, unaccustomed to human disturbance, would decrease in the immediate area and along the periphery of the development, being displaced by species adapted to human activity. This impact would be significant.</p> <p>Potential impacts to the on-site unnamed tributary of Willow Creek and downstream aquatic habitat from the discharge of tertiary treated wastewater include changes in flow and vegetation characteristics of the waterways. The addition a permanent water source would stimulate the growth of hydrophytic vegetation and create conditions for the growth of a diverse riparian habitat in the unnamed tributary. Willow Creek would benefit from increased flows of high quality recycled water by providing better habitat for resident rainbow trout. Thus, a less than significant impact would result. <u>However, if the discharged effluent increases the water temperature of Willow Creek by more than five degrees Fahrenheit, it could significantly impact aquatic species downstream of the confluence of Willow Creek and the unnamed tributary.</u></p>	S	<ul style="list-style-type: none"> To prevent impacts to aquatic habitat due to a change in water temperature, the water temperature of Willow Creek above its confluence with the unnamed stream shall be monitored. Measures such as a cooling pond or cooling tower shall be used if necessary to decrease the temperature of the effluent to within five degrees Fahrenheit of the temperature of the creek. In accordance with the RWQCB Basin Plan, at no time shall the temperature of the receiving body of water be altered more than five degrees Fahrenheit. Where appropriate, vegetation removed as a result of project activities shall be replaced with native species that are of value to local wildlife. Native plants have a significant cultural value, are generally more valuable as wildlife food sources and require less irrigation, fertilizers, and pesticides than exotic species. 	LTS
E The current agricultural and rural residential forms of land use for both the Madera site and North Fork site would remain unchanged; thus, no impacts to biological resources would occur.	NE	No mitigation is recommended.	NE

State Special Status Species

TABLE ES-1
SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
A Three state special status species have the potential to be impacted on the Madera site: Swainson's hawk, Burrowing Owl, and hoary bat. However, Alternative A would not significantly impact these species, which are not afforded protection under the Endangered Species Act.	LTS	<p>In addition to mitigation listed under Potential Effects to Wildlife and Habitats the following mitigation is recommended:</p> <ul style="list-style-type: none"> The pre-construction survey shall be conducted within 30 days prior to initiation of construction activity, and cover all potential nesting trees. If active nests are found, consultation with USFWS shall occur. Appropriate measures shall be adopted similar to California Department of Fish & Game (CDFG) mitigation guidelines, regarding losses of suitable foraging habitat. Impacts within 10 miles of a Swainson's hawk nest site shall be mitigated by protecting or creating equally suitable foraging habitat elsewhere within the territory's 10-mile radius (CDFG 1994). The acreage of Habitat Management (HM) lands provided shall be derived from the 1994 CDFG staff report. <p>Projects within five miles of an active nest tree but greater than one mile from the nest tree shall provide 0.75 acres of HM land for each acre of urban development planned (0.75:1 ratio). All HM lands protected under this requirement shall be protected through fee title acquisition or conservation easement (acceptable to the CDFG) on agricultural lands or other suitable habitats that provide foraging habitat for Swainson's hawks. Management Authorization holders/project sponsors shall provide for the long-term management of the HM lands by funding a management endowment (the interest on which shall be used for managing the HM lands).</p> <ul style="list-style-type: none"> Informal consultation with CDFG shall occur prior to construction activities to discuss potential on-site impacts to state special-status species. Within one month prior to tree removal, a qualified bat biologist shall conduct surveys to determine whether special-status bat species are roosting in the trees. If tree 	LTS

Less than Significant = LTS

Significant = S

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Beneficial Effect = BE

Alternative A = A

Alternative B = B

Alternative C = C

Alternative D = D

Alternative E = E

TABLE ES-1
SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
			removal activities are delayed or suspended for more than one month after the pre-construction survey, the trees shall be resurveyed. If special-status bat species are roosting in trees at the site, a qualified bat biologist will remove or relocate the bats.	
B	Similar to Alternative A.	LTS	Same as Alternative A.	LTS
C	Similar to Alternative A.	LTS	Same as Alternative A.	LTS
D	The pallid bat, a state special status species, has the potential to roost in buildings and tree cavities on the North Fork site. Removal of habitat, including several acres of woodland and existing structures on the North Fork site would constitute a potentially significant impact.	S	In addition to mitigation listed under Potential Effects to Wildlife and Habitats the following mitigation is recommended: <ul style="list-style-type: none"> Within one month prior to tree removal or building demolition, a qualified bat biologist shall conduct surveys to determine whether special-status bat species are roosting in the trees or buildings. If tree removal or building demolition activities are delayed or suspended for more than one month after the pre-construction survey, the trees or buildings shall be resurveyed. If special-status bat species are roosting in trees or buildings at the site, a qualified bat biologist will remove or relocate the bats. 	LTS
E	The current agricultural and rural residential forms of land use for both the Madera site and North Fork site would remain unchanged, thus no impacts to biological resources would occur.	NE	No mitigation is recommended.	NE
Federally Listed Species				
A	Biological field surveys showed the Madera site does not provide habitat for the Federally listed special-status	LTS	No mitigation is recommended.	LTS

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Significant = S

No Effect = NE

Beneficial Effect = BE

Alternative A = A

Alternative B = B

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Alternative D = D

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TABLE ES-1
SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
<p>invertebrates, fish, amphibians, reptiles, or plant species. Habitats on site are classified as ruderal and subject to constant human disturbances. The effects, therefore, will be less than significant.</p>				
B	Similar to Alternative A.	LTS	No mitigation is recommended.	LTS
C	Similar to Alternative A.	LTS	No mitigation is recommended.	LTS
D	<p>Potentially six species could be affected by the development of Alternative D. Of these species, two have the potential to occur on the site: Mariposa pussypaws (<i>Calyptidium pulchellum</i>) and valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>).</p> <p>The loss of Interior Live Oak Woodland could significantly affect the habitat of the Mariposa pussypaws; mitigation would decrease the impact to a less than significant level.</p> <p>Due to the presence of elderberry shrubs, development of the site could significantly impact valley elderberry longhorn beetle populations. Alternative D has the potential to impact 50 elderberry plants.</p>	S	<p>In addition to mitigation listed under Potential Effects to Wildlife and Habitats the following mitigation is recommended:</p> <ul style="list-style-type: none"> ▪ Protocol-level plant surveys for the Mariposa pussypaws, the Federally-listed plant species identified in Section 4.5 shall occur prior to development activities. Surveys shall be conducted within the blooming period for this species (April to August). If this species is not detected on site, no mitigation is necessary. However, if this species is detected and will be affected by the development of Alternative D, populations and/or individual plants of Mariposa pussypaws shall be flagged and a disturbance-free buffer of 50 feet surrounding each individual or population shall be established and demarcated with fencing or flagging. The project shall be redesigned to avoid all soil disturbance or other habitat impacts within the 50-foot buffer. <p>Two of the elderberry plants on the North Fork site shall be avoided using the following measures:</p> <ul style="list-style-type: none"> ▪ Two of the elderberry plants on the North Fork site (location eld7) shall be avoided using the following measures. <ul style="list-style-type: none"> ○ If feasible, the elderberry shrubs shall be completely avoided using a 100-foot buffer. This buffer shall be fenced using standard construction fencing material. Signs shall be placed every 50 feet along the fencing with the following 	LTS

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TABLE ES-1
SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		<p>information:</p> <p>“This area is habitat for the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment.”</p> <p>These signs shall be clearly readable from a distance of 20 feet and shall be maintained for the duration of the construction activity.</p> <ul style="list-style-type: none"> ○ If it is necessary to disturb areas within the 100-foot avoidance buffers, USFWS shall be consulted before any disturbance is begun. In areas where encroachment on the 100-foot avoidance buffer has been approved by the USFWS, a buffer at least 20 feet from the dripline of the shrubs shall be maintained. Any habitat within the 100-foot buffer that was damaged during construction shall be restored once the construction activities have been completed. This includes erosion control and re-vegetation with appropriate native plants. ○ Once the construction of the Alternative D facilities have been completed, permanent measures shall be taken to protect the elderberry shrubs from adverse impacts from the project. These measures can include fencing, signs, weeding, and trash removal. Additionally, no mowing shall take place within five feet of the driplines of the elderberry shrubs. <ul style="list-style-type: none"> ▪ Alternative D will impact 50 of the elderberry shrubs on the North Fork site. The following mitigation measures will ensure that the impacts to elderberry shrubs are less than significant: 	

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TABLE ES-1
SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		<ul style="list-style-type: none"> ○ All elderberry shrubs with at least one stem greater than one inch in diameter at ground level and are healthy enough to survive transplanting shall be transplanted to a USFWS-approved conservation area. The transplanting shall take place between November and January, when the shrubs will be dormant. Transplanting methods shall be in accordance with the USFWS' conservation guidelines (Appendix H). If it is not possible to transplant one or more of the elderberry shrubs, the USFWS may increase the minimization ratios shown in Table 5-1 to mitigate for the loss of the shrub. ○ For each elderberry stem at least one inch in diameter at ground level that is impacted by Alternative D (e.g. pruned, damaged, or transplanted), additional elderberry seedlings or cuttings shall be planted in a USFWS-approved conservation area at the ratios given in Table 5-2. These ratios are based upon the ratios given in Table 1 of the USFWS VELB conservation guidelines (Appendix E). Additionally, for each elderberry stem at least one inch in diameter at ground level impacted by Alternative D, a variety of associated species native to the conservation area shall be interspersed with the elderberry seedlings. The number of individual plants (of the associated species) required to mitigate for the impacts to the elderberry shrubs is listed in Table 5-2 of the FEIS. 	
<p>As shown in Table 5.2-2 of the FEIS, mitigation measures for impacts to VELB from Alternative D would require the transplanting of 50 elderberry shrubs from the North Fork site and the additional planting of 241 elderberry seedlings or cuttings in a USFWS-approved conservation area. The mitigation measures would also require the planting of 146 native plants of various species that are</p>			

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SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
			associated with elderberry shrubs.	
E	The current agricultural and rural residential forms of land use for both the Madera site and North Fork site would remain unchanged; thus, no impacts to biological resources would occur.	NE	No mitigation is recommended.	NE
<i>Migratory Birds and Other Special-Status Species</i>				
A	Alternative A could adversely affect active migratory bird nests if vegetation removal activities associated with project construction occur during the nesting season. This is a potentially significant impact.	S	<ul style="list-style-type: none"> ▪ If feasible, vegetation removal activities shall occur outside of the nesting season (approximately March through September) for migratory birds. If vegetation removal activities are to be conducted during the nesting season, a qualified biologist shall conduct a pre-construction survey for active migratory bird nests in and around proposed disturbance areas within one month prior to vegetation removal. If vegetation removal activities are delayed or suspended for more than one month after the pre-construction survey, the site shall be resurveyed. If a migratory bird nest is present, consultation with USFWS shall occur. A disturbance-free buffer of 250 feet shall be established around the nest and demarcated with fencing or flagging. No project-related construction activities, including vegetation removal, shall occur within the buffer zone until a qualified biologist determines the young have fledged and are independent of the nest. ▪ A pre-construction survey for Western burrowing owls shall be conducted to ensure that impacts to burrowing owls, if present, do not occur during the nesting season. The pre-construction survey shall be conducted within 30 days prior to initiation of construction activity. If active burrows are found prior to the nesting season, consultation with USFWS shall occur. If feasible, passive relocation measures shall be provided for each burrow in the area of the Madera Site that is rendered biologically unsuitable. Passive relocation measures shall 	LTS

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SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		<p>include the creation of two natural or artificial burrows for each burrow rendered biologically unsuitable. Daily monitoring will be implemented until the owls have been relocated to the new burrows. This measure will reduce potential impacts to burrowing owl species.</p> <ul style="list-style-type: none"> ▪ The following measures shall be implemented to minimize the effects of lighting and glare: <ul style="list-style-type: none"> ○ Install downcast lights with top and side shields to reduce upward and sideways illumination. This shall reduce potential disorientation affects from non-directed shine to birds and wildlife species. ○ Turn off as many exterior and interior lights as possible during the peak bird migration hours of midnight to dawn to reduce potential building collisions with migratory birds. 	
B Similar to Alternative A.	S	Same as Alternative A.	LTS
C Similar to Alternative A.	S	Same as Alternative A.	LTS
D Similar to Alternative A.	S	<ul style="list-style-type: none"> ▪ If feasible, vegetation removal shall occur outside of the nesting season (the nesting season is approximately March through September) for migratory birds. If vegetation removal activities are to be conducted during the nesting season, a pre-construction survey for active migratory bird nests in and around proposed disturbance areas shall be conducted by a qualified biologist within one month prior to vegetation removal. If vegetation removal activities are delayed or suspended for more than one month after the pre-construction survey, the site shall be resurveyed. If a migratory bird nest is present, a disturbance-free buffer of 250 feet shall be established around the nest and demarcated with fencing or flagging. This distance may be reduced, depending on the sensitivity of the species 	LTS

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SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
E The current agricultural and rural residential forms of land use for both the Madera site and North Fork site would remain unchanged; thus, no impacts to biological resources would occur.	NE	and nest location, in consultation with CDFG. No project-related construction activities, including vegetation removal, shall occur within the buffer zone until a qualified biologist determines the young have fledged and are independent of the nest. No mitigation is recommended.	NE
<i>Waters of the U.S.</i>			
A A delineation of waters of the U.S. occurring within the site identified the Schmidt Creek realignment ditch and other seasonal wetlands totaling 8.51 acres. These features are subject to U.S. Army Corps of Engineers (USACE) jurisdiction under the Clean Water Act. The construction of facilities will have no direct effects to jurisdictional waters of the U.S. because the proposed casino and associated facilities are all located elsewhere on the Madera site. A clear-span bridge is proposed over the Airport ditch to connect the access road to Road 23, thereby avoiding any impact to the creek. All other potentially jurisdictional waters of the U.S. have been avoided in the design phase and protected from indirect effects by a 50-foot buffer.	LTS	<ul style="list-style-type: none"> ▪ Permanent fencing shall be installed around areas of wetlands and identified jurisdictional waters of the U.S., as shown on the USACE verified, waters of the U.S. map. Fencing shall be located no closer than a minimum of 50 feet in accordance with the USACE. Fencing shall be installed prior to any construction to protect water quality and shall remain in place after construction to maintain the wetlands and waters of the U.S. ▪ Construction staging areas shall be located at least 50 feet away from the wetlands and identified jurisdictional waters of the U.S. Temporary stockpiling of excavated or imported material shall occur only in approved construction staging areas. Excess excavated soil shall be used on site or disposed of at a regional landfill or other appropriate facility. Stockpiles that are to remain on the site through the wet season shall be protected to prevent erosion (e.g. seeding and silt fences or straw bales). 	LTS
B Similar to Alternative A.	LTS	Same as Alternative A.	LTS
C Similar to Alternative A.	LTS	Same as Alternative A.	LTS

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Significant = S

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SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
D Approximately 1.19 acres of potential jurisdictional waters of the U.S. have been identified within the project area. Potential project-related impacts to these waters include the loss of three streams located in the northwestern portion of the property, totaling approximately 0.2 acres. Other potential effects include dewatering, increased turbidity, increased temperature, and an increase in pollutant loads of downstream habitats. These impacts are potentially significant.	S	<ul style="list-style-type: none"> USACE verification of identified waters of the U.S shall be obtained and a Clean Water Act,404 permit shall be obtained from USACE prior to any discharge of dredged or fill material into “waters of the U.S.” The Tribe shall comply with all the terms and conditions of the permit and compensatory mitigation shall be in place prior to any direct effects to “waters of the U.S.” A wetland mitigation plan to mitigate impacts to jurisdictional wetlands shall be developed as part of the USACE permit process. Wetland mitigation shall be accomplished through creation/restoration of seasonal wetlands within an open space preserve subject to conservation easements. This creation/restoration shall provide an increase in the inventory of seasonal wetlands for the area. The scale of seasonal wetland restoration (proposed 2:1 ratio) shall be sufficient to satisfy the ratio of replacement acreage to impacted acreage required by regulatory agencies based on wetland functions and values present on the North Fork site. A detailed mitigation plan shall be designed that shall include monitoring and reporting requirements, responsibilities, performance success criteria, reporting procedures and contingency requirements. A Clean Water Act NPDES permit shall be obtained from the USEPA prior to the discharge of tertiary-treated effluent into any of the drainages on the site. The Tribe shall comply with all the terms and conditions of the permit as mitigation for all impacts to downstream habitat and fish species. 	LTS
E The current agricultural and rural residential forms of land use for both the Madera site and North Fork site would remain unchanged; thus, no impacts to biological resources would occur.	NE	No mitigation is recommended.	NE

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SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
4.6 CULTURAL RESOURCES			
<i>Cultural Resources</i>			
A Alternative A would not have a significant effect on known cultural resources. One site, remnants of a historic farm complex, has been evaluated as not eligible for the National Register of Historic Places and is located outside the proposed developed area of the Madera site. There is a possibility that previously unknown archaeological resources will be encountered during construction. This would be a potentially significant effect.	S	<ul style="list-style-type: none"> Any inadvertent discovery of archaeological resources, shall be subject to Section 106 of the National Historic Preservation Act as amended (36 CFR 800), the Native American Graves Protection and Repatriation Act (25 USC 3001 et seq.), and the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa-mm). Specifically, procedures for post review discoveries without prior planning pursuant to 36 CFR 800.13 shall be followed. <p>All work within 50 feet of the find shall be halted until a professional archaeologist, can assess the significance of the find. If any find is determined to be significant by the archaeologist then representatives of the Tribe, the NIGC and the BIA shall meet with the archaeologist to determine the appropriate course of action, including the development of a Treatment Plan, if necessary. All significant cultural materials recovered shall be subject to scientific analysis, professional curation, and a report prepared by the professional archaeologist, according to current professional standards.</p> <ul style="list-style-type: none"> If human remains are encountered during ground-disturbing activities on Tribal lands, work shall halt in the vicinity, the Madera County Coroner should be notified immediately, and pursuant to the Native American Graves Protection and Repatriation Act (NAGPRA), Section 10.4 Inadvertent Discoveries, a Tribal Official and BIA representative will be contacted immediately. No further disturbance shall occur until the Tribal Official and BIA representative have examined the findings and agreed on the appropriate course of action. 	LTS

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SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
B	Similar to Alternative A.	S	Same as Alternative A.	LTS
C	Similar to Alternative A.	S	Same as Alternative A.	LTS
D	Although seven archaeological sites have been previously identified on the North Fork site, only one site is located within the immediate vicinity of the proposed development area of the North Fork site. The site may be impacted by slope stabilization activities. Additionally, there is a possibility that previously unknown archaeological resources will be encountered during construction.	S	In addition to mitigation measures listed for Alternative A, the following mitigation measure is recommended: <ul style="list-style-type: none"> Temporary protective construction fencing shall be placed around site P-20-2358, including a 5-foot buffer, to prevent damage to the resource from slope stabilization activities. If the site cannot be avoided during construction, a professional archaeologist will consult with the Tribe and the BIA to determine the appropriate action. 	LTS
E	As change in existing land use is proposed, no significant effects to cultural or paleontological resources are expected.	NE	No mitigation is recommended.	NE
<i>Paleontological Resources</i>				
A	No known paleontological or unique geological resources exist on the Madera site. Given disturbance over time, primarily due to grading from agricultural operations, the upper layer of soils underlying the Madera site are not known to contain paleontological resources. However, discoveries at the Fairmead Landfill site suggest that there is potential for significant paleontological resources to be present beneath the ground surface. Discovery of previously unknown paleontological resources during construction activities could be a potentially significant effect.	S	<ul style="list-style-type: none"> Monitoring of construction activities by a qualified paleontologist shall occur during any trenching or excavation associated with development under the Alternatives. Should paleontological resources be unearthed, a paleontological resource impact mitigation plan (PRIMP) shall be created prior to further earthmoving in the vicinity of the find. The PRIMP shall detail the procedures for collecting and preserving the discovered fossils. Any fossils discovered during construction shall be accessioned in an accredited scientific institution for future study. 	LTS

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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
B Similar to Alternative A.	S	Same as Alternative A.	LTS
C Similar to Alternative A.	S	Same as Alternative A.	LTS
D No known paleontological or unique geological resources are known to exist in the project area. Geologic formations that underlie the North Fork site have a low probability of containing paleontological resources.	LTS	No mitigation is recommended.	LTS
E As change in existing land use is proposed, no significant effects to cultural or paleontological resources are expected.	NE	No mitigation is recommended.	NE

4.7 SOCIOECONOMIC CONDITIONS

Employment and Population

A Alternative A's effect on employment would come in both the construction and operational phases. The impacts of construction would be felt for the duration of construction spending. The operational effects would be felt for as long as the casino/hotel/resort was in operation. Direct employment includes those employees who are directly employed at the facility either during construction or during operation. Indirect employment includes those employees who provide services and are employed at least in part due to the facility but are not directly employed at the facility. Induced employment includes jobs that are created due to the ripple effect of spending throughout the economy as a whole. Alternative A would result in the creation of 2,441 temporary construction-related positions. Alternative A facilities would employ 1,461 full time equivalent employees. Indirect or induced job would total 2,319 permanent positions within Madera County, which would	BE	No mitigation is recommended.	BE
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SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
<p>result in a beneficial effect on the region's unemployment rate and the local economy as a whole.</p> <p>A total of 836 new residents are expected to move into Madera County as a result of Alternative A.</p>				
B	<p>Alternative B impacts are similar to Alternative A although reduced in size. This alternative would increase employment by approximately 1,802 temporary positions and 1,485 permanent positions.</p> <p>Using the same employee per household ratio used for Alternative A, a total of 534 new County residents would be expected under Alternative B, increasing the population from 141,007 to 141,541.</p>	BE	No mitigation is recommended.	BE
C	<p>Alternative C's beneficial effects on construction and operation employment would be much lower given that Alternative C does not include a casino or hotel component. This alternative would increase employment by approximately 271 temporary positions and 995 permanent positions.</p> <p>Approximately 194 new County residents are expected under Alternative C, with 97 expected to settle in the City of Madera, increasing the City population from 50,842 to 50,939.</p>	BE	No mitigation is recommended.	BE
D	<p>Alternative D's effects on construction and operation employment would be substantially reduced given that Alternative D does not include a hotel component, and would be located in a competitively disadvantaged area. This alternative would increase employment by approximately 351 temporary positions and 167 permanent positions.</p> <p>Using the same employee per household ratio used for Alternative A, a total of 32 new County residents would be</p>	BE	No mitigation is recommended.	BE

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expected under Alternative D, increasing the population from 141,007 to 141,039.			
E As both the Madera site and North Fork site would remain undeveloped, potential socioeconomic effects resulting from development would not occur, including beneficial effects to employment and the economy and negative effects to local services.	NE	No mitigation is recommended.	NE
Social Effects			
A <u>Negative social effects, such as crime and problem gambling, have the potential to occur through the development of Alternative A.</u> After surveying similar California casino communities and reviewing relevant literature, no definitive link between casinos and regional crime rates was found. Therefore, although an increase in calls for service is expected, an increase in regional crime rates would not result from Alternative A. Thus, Alternative A's impact to crime would be less than significant. However, it is assumed that Alternative A would result in an increase in the number of problem gamblers. Although the County MOU provides \$50,000 per year to compensate for problem gambling treatment programs, this may be short of the amount needed to accommodate the increased demand for problem gambling related services, <u>and is therefore deemed a significant impact.</u>	S	The following mitigation measures are recommended: <ul style="list-style-type: none"> ▪ The Tribe shall contract with a gambling treatment professional to train management and staff to develop strategies for recognizing and addressing customers whose gambling behavior may strongly suggest they are experiencing serious to severe difficulties. ▪ The Tribe shall refuse service to any customer whose gambling behavior convincingly exhibits indications of problem or pathological gambling. ▪ The Tribe shall respectfully and confidentially provide the customer (as described above) with written information that includes a list of professional gambling treatment programs and self-help groups. ▪ The Tribe shall implement procedures to allow for voluntary self-exclusion, enabling gamblers to ban themselves from a gambling establishment for a specified period of time. ▪ The Tribe shall prominently display (including on any automatic 	LTS

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		<p>teller machines (ATMs) located on-site) materials describing the risk and signs of problem and pathological gambling behaviors. Materials shall also be prominently displayed (including on any ATMs located on-site) that provide available programs for those seeking treatment for problem and pathological gambling disorders, including, but not limited to a toll-free hotline telephone number.</p> <ul style="list-style-type: none"> The Tribe shall offer insurance coverage for problem/pathological gambling treatment programs to its casino employees. <p>Alternative A only:</p> <ul style="list-style-type: none"> The Tribe shall reimburse Madera County in the following amounts: \$835,110 (one-time, prior to the opening of the Alternative A developments to the public) and \$1,038,310 (annually) for fiscal impacts. 	
B Effects to regional crime rates would be similar to Alternative A. Although the Alternative B casino would be reduced in size when compared to Alternative A, the effects to problem gambling are conservatively not assumed to differ. Under Alternative B, the County MOU funding may not apply and annual funds would not be provided for problem gambling services. Thus, a potentially significant effect would result.	S	<p>Same as Alternative A, as well as:</p> <ul style="list-style-type: none"> The Tribe shall reimburse Madera County in the following amounts: \$1,988,560 (one-time, prior to the opening of the Alternative B developments to the public) and \$2,089,317 (annually) for fiscal impacts. The Tribe shall pay the City of Madera \$110,656 annually for fiscal impacts. 	LTS
C The potential concerns regarding effects to crime and problem gambling that are associated with operation of a casino would not be present with the retail development proposed for	LTS	<ul style="list-style-type: none"> The Tribe shall reimburse Madera County in the following amounts: \$2,083,251 (one-time, prior to the opening of the Alternative C developments to the public) and \$1,470,885 	LTS

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Alternative C. Commercial uses associated with a shopping center and restaurants are not expected to characteristically result in increased crime rates in the region. Thus, Alternative C's impact to crimes would be less than significant.		(annually) for fiscal impacts. <ul style="list-style-type: none"> The Tribe shall reimburse the City of Madera \$40,095 annually for fiscal impacts. 	
D Effects to regional crime rates would be similar to Alternative A. Although the Alternative D casino would be reduced in size when compared to Alternative A, the effects to problem gambling are conservatively not assumed to differ. Under Alternative D, the County MOU would not apply and annual funds would not be provided for problem gambling services. Thus, a potentially significant effect would result.	S	Same as Alternative A, as well as: <ul style="list-style-type: none"> The Tribe shall reimburse Madera County in the following amounts: \$756,298 (one-time, prior to the opening of the Alternative D developments to the public) and \$2,436,264 (annually) for fiscal impacts. The tribe shall reimburse the City of Madera for \$4,834 annually for fiscal impacts. 	LTS
E As both the Madera site and North Fork site would remain undeveloped, no social effects resulting from development would occur.	NE	No mitigation is recommended.	NE
Surrounding Property Values			
A Agricultural, industrial, and average-value rural residential uses predominate the project area. Despite public perception, property values tend to increase on land surrounding casino properties. This is assumed to occur due to the attraction of such land to speculators and possibly the preference to live near such amenities. Therefore, land values in the region and in the vicinity of the Madera site are not expected to be significantly impacted by Alternative A	LTS	No mitigation is recommended.	LTS
B Similar to Alternative A.	LTS	No mitigation is recommended.	LTS

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ENVIRONMENTAL EFFECT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
C	Some of the same concerns with lowering property values may be present with respect to Alternative C, given that it proposes a large retail development. However, some of the same assumptions to increasing property values due to speculation would also apply. Therefore, land values in the region and in the vicinity of the Madera site would not be significantly affected by Alternative C.	LTS	No mitigation is recommended.	LTS
D	As with Alternative A, high-value residential properties are not present in the immediate vicinity of the North Fork site and nuisance effects would be minimized because of the heavy tree cover and varied terrain within and surrounding the North Fork site. Thus, land values in the region and in the vicinity of the North Fork Site would not be significantly affected by Alternative D.	LTS	No mitigation is recommended.	LTS
E	As both the Madera site and North Fork site would remain undeveloped, no effects to property values resulting from development would occur.	NE	No mitigation is recommended.	NE
<i>Economic Effects to Local Government</i>				
A	The project would impact government services through the demand that the casino/hotel resort itself would create and through the demand created by the new residents who would move to Madera County to work in the casino. The casino/hotel resort is anticipated to increase demands on fire protection services, law enforcement services, judicial services, prison services, behavioral health services, and resource management services. New residents would increase costs to Madera County and the City of Madera. Costs to the County from the introduction of new residents, based on the present County budget and services provided,	S	See Social Effects mitigation.	LTS

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<p>include costs to administrative services, fire protection services, law enforcement services, judicial services, prison services, behavioral health services, social services, educational services, and resource management services. Costs to the City of Madera from the introduction of new residents, based on the present City budget and services provided, include costs to City administration, the finance department, the City attorney, public works, law enforcement services, fire protection services, community development, parks and recreation, and grant oversight.</p> <p>There are two main sources of revenue the County and the City of Madera can expect under Alternative A: payments under the Memorandum of Understanding (MOU) between the County and the Tribe, and indirect tax revenue. Alternative A would negatively affect County revenue received from property taxes on the Madera site after it is taken into trust by the Federal Government.</p> <p>Overall, MOU contributions and tax revenues generated by Alternative A by far outweigh any negative fiscal impacts to either the County and the City of Madera, however impacts would result to Madera County.</p>	S	See Social Effects mitigation.	LTS
<p>B Although the demands on County and City services are similar to those of Alternative A, they are generally smaller, given the reduced intensity size and scope of the Alternative B casino.</p> <p>The terms of the MOU negotiated between the County and Tribe apply only to Alternative A. Thus, MOU revenues are not expected under Alternative B unless the County and the Tribe renegotiate the existing MOU. Only one source of revenue is expected under Alternative B: indirect tax revenue. Alternative B would negatively affect County revenue received from property taxes on the Madera site after it is taken into</p>			
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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
<p>trust by the Federal Government.</p> <p>Overall, annual and one-time County costs exceed revenues for Alternative B. City of Madera annual costs would exceed revenues generated by Alternative B. These additional costs would require either that the City and County raise taxes or provide a lower quality of services to the casino (where applicable) and its residents.</p>			
<p>C Alternative C would impact government services through the demand for services that the Alternative C developments would create and the demand created by the new residents who would move to Madera County to work in the Alternative C developments. The development itself is anticipated to increase demands on fire protection services, law enforcement services, prison services, and resource management services. Services affected by the introduction of new residents are similar to those described for Alternative A.</p> <p>The terms of the MOU negotiated between the County and Tribe apply only to Alternative A. Thus, MOU revenues are not expected under Alternative C unless the County and the Tribe were to renegotiate the existing MOU. Thus, only one source of revenue is expected under Alternative C: indirect tax revenue. Alternative C would negatively affect County revenue received from property taxes on the Madera site after it is taken into trust by the Federal Government.</p> <p>Overall, County one-time and annual costs exceed revenues. For the City of Madera annual costs exceed revenues. These additional costs would require that the City and County raise taxes or provide a lower quality of services to the Madera site and its residents.</p>	S	See Social Effects mitigation.	LTS

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D	<p>Although the demands on County and City services are similar to those of Alternative A, they are smaller, given the reduced intensity size and scope of Alternative D.</p> <p>MOU revenues are not expected under Alternative D unless the County and the Tribe were to renegotiate the existing MOU. Thus, only one source of revenue is expected under Alternative D: indirect tax revenue. As the North Fork site is already held in trust by the Federal Government and not subject to property tax, Alternative D would not negatively affect County revenue received from property taxes.</p> <p>Overall, County one-time and annual costs exceed revenues from Alternative D. In addition, City of Madera annual costs exceed revenues from Alternative D. These additional costs would require either that the City and County raise taxes or provide a lower quality of services to the casino (where applicable) and its residents.</p>	S	See Social Effects mitigation.	LTS
E	As both the Madera site and North Fork site would remain undeveloped, no potential economic effects resulting from development would occur.	NE	No mitigation is recommended.	NE
<i>Economic Effects to the Madera Irrigation District (MID)</i>				
A	<p>If the Madera site is taken into trust, local taxes and assessments would no longer apply. The seven parcels comprising the Madera site are currently within the Madera Irrigation District (MID) service area and are therefore subject to various assessments which MID uses to fund its operations. MID assessments of the Madera site currently total approximately \$6,800. However, the Madera site would no longer be within the MID service area and MID would not accrue costs related to the site. Therefore, this would be a less than significant effect. Nonetheless, the Tribe has</p>	LTS	No mitigation is recommended.	LTS
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negotiated a MOU with MID to compensate for economic effects to the district.				
B	Similar to Alternative A, except the terms of the MID MOU would not apply.	LTS	<ul style="list-style-type: none"> ▪ The Tribe shall reimburse the MID in the amount of \$6,800 (annually) for fiscal impacts. ▪ The Tribe shall implement groundwater mitigation measures discussed in Section 5.2.2. 	LTS
C	Similar to Alternative A, except the terms of the MID MOU would not apply.	LTS	Same as Alternative B	LTS
D	Development of the North Fork Site would have no impact on the MID.	NE	No mitigation is recommended.	NE
The potential impacts of groundwater pumping on neighboring well owners, including the proposed mitigation measures outlined in Section 5.2.2 are provided below.				
E	As both the Madera site and North Fork site would remain undeveloped, no potential effects to the MID resulting from development would occur.	NE	No mitigation is recommended.	NE
Increased Pumping Costs for Neighboring Wells				
A	On-site groundwater pumping would result in effects to neighboring wells, potentially including increased pumping and maintenance costs. However, significant increases in costs would not occur.	LTS	The Tribe shall implement groundwater mitigation measures discussed in Section 5.2.2.	LTS
B	Fiscal effects to the MID would be the similar to Alternative A given that the Madera site would be taken into trust under Alternative B. A less than significant effect would result.	LTS	Same as Alternative A.	LTS

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C	Fiscal effects to the MID would be the similar to Alternative A given that the same Madera site would be taken into trust under Alternative C. A less than significant effect would result.	LTS	Same as Alternative A.	LTS
D	Given the uncertainties of the groundwater characteristics under the North Fork site, economic effects to neighboring well owners from on-site pumping are unknown and therefore potentially significant.	S	Same as Alternative A.	LTS
E	As both the Madera site and North Fork site would remain undeveloped, no potential effects increased pumping costs at neighboring wells resulting from development would occur.	NE	No mitigation is recommended.	NE
Environmental Justice				
A	Potential environmental justice impacts would occur if Alternative A resulted in any disproportionately high and/or adverse effects to local minority populations in the vicinity of the Madera site, including competition-related effects to area tribal casinos. No low-income communities were identified in the vicinity of the Alternative A development, nor were any disproportionately high or adverse effects to minority communities identified.	LTS	No mitigation is recommended.	LTS

The Alternative A casino component would compete with nearby existing and proposed tribal casinos. The proposed project would compete most directly with the Chukchansi, Table Mountain and the proposed Big Sandy facilities. While actual revenues are proprietary it is projected that a revenue decline would be felt at Chukchansi, Table Mountain, and Big Sandy facilities. The Palace and Tuolumne Black Oak would also be impacted, though the revenue declines at both of those facilities would be much lower. The effect on revenues ultimately depends on many factors, including the saturation level of the market and the ability of individual casinos to add

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features and effectively market their facilities. Even with estimated revenue declines, all of the facilities are expected to remain open and to continue to generate profits for their tribal owners. The effect is therefore less than significant.			
B Similar to Alternative A.	LTS	No mitigation is recommended.	LTS
C Under Alternative C, all localized environmental effects would be less than significant after mitigation and no impacts specific to identified minority communities were identified. Alternative C does not have a casino component and therefore would not represent potential competition to nearby tribal casinos. The effect is therefore less than significant.	LTS	No mitigation is recommended.	LTS
D No minority communities are present in the vicinity of the North Fork site. Effects to existing tribal casinos are similar to Alternative A although reduced in scale. The effect is therefore less than significant.	LTS	No mitigation is recommended.	LTS
E As no development is proposed, there would be no disproportionate effects to low-income or minority populations.	NE	No mitigation is recommended.	NE

4.8 RESOURCE USE PATTERNS

Transportation

A With the addition of project traffic under Alternative A, five freeway segments, one roadway segment, and ten study intersections are shown to operate at an unacceptable LOS. Alternative A's contribution to unacceptable traffic operations represents a significant impact.	S	<ul style="list-style-type: none"> Roadway segment and intersection improvements recommended under each alternative are listed in Section 5.2.7. Mitigation measures for each roadway segment and intersection are identified in the year of need. <p>Where roadway segments and intersections are shown as having an acceptable LOS with the addition of traffic from the project alternatives the Tribe shall pay for a proportionate share</p>	LTS
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			of costs for the recommended mitigation.	
B	With the addition of project traffic under Alternative B, five freeway segments, one roadway segment, and ten study intersections are shown to operate at an unacceptable LOS. Alternative B's contribution to unacceptable traffic operations represents a significant impact.	S	Same as Alternative A.	LTS
C	With the addition of project traffic under Alternative C, five freeway segments, one roadway segment, and ten study intersections are shown to operate at an unacceptable LOS. Alternative C's contribution to unacceptable traffic operations represents a significant impact.	S	Same as Alternative A.	LTS
D	With the addition of project traffic under Alternative D one study intersection is forecast to operate at an unacceptable LOS.	S	Same as Alternative A.	LTS
E	The traffic conditions under the No Action Alternative would be the same as the baseline conditions for each target year. No new traffic would be added to the local roadways or State Route 99.	NE	No mitigation is recommended.	NE
Traffic Construction				
A.	Traffic impacts resulting from the construction of Alternative A would be temporary in nature with significantly less trips generated during construction than operation of Alternative A.	LTS	<ul style="list-style-type: none"> A Traffic Management Plan (TMP) shall be prepared to identify which lanes require closure, where night construction is proposed, and other standards set forth in the Manual on Uniform Traffic Control Devices for Streets and Highways (US DOT FHWA, 2003). The TMP shall be submitted to each affected local jurisdiction and/or agency. Also prior to the finalization of construction plans, the Tribe shall work with emergency service providers to avoid restricting emergency response service. Police, fire, ambulance, and other emergency response providers shall be notified in advance of 	LTS

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			<p>the construction schedule, exact location of construction activities, duration of construction period, and any access restrictions that could impact emergency response services. Traffic Management Plans shall include details regarding emergency service coordination. Copies of the TMPs shall be provided to all affected emergency service providers.</p> <ul style="list-style-type: none"> Importation of construction material shall be scheduled outside of the area wide commute peak hours. Where feasible, lane closures or obstructions associated with the construction of the project shall be limited to off-peak hours to reduce traffic congestion and delays. Prior to construction, the Tribe shall work to notify all potentially affected parties in the immediate vicinity of the North Fork, or the Madera sites, as appropriate. Notification shall include a construction schedule, location of construction activities, the duration of construction period, and alternative access provisions. Debris along construction vehicle routes shall be monitored daily during construction and the roadways cleaned as necessary. 	
B.	Traffic impacts resulting from the construction of Alternative B would be temporary in nature with significantly less trips generated during construction than operation of Alternative B.	LTS	Same as Alternative A.	LTS
C.	Traffic impacts resulting from the construction of Alternative C would be temporary in nature with significantly less trips generated during construction than operation of Alternative C.	LTS	Same as Alternative A.	LTS
D.	Traffic impacts resulting from the construction of Alternative D would be temporary in nature with significantly less trips	LTS	Same as Alternative A.	LTS

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generated during construction than operation of Alternative D.				
E.	Construction traffic would not be impacted as no development would occur.	NE	No mitigation is recommended	NE
Land Use				
A	<p>Alternative A would involve commercial development on land that is currently outside Madera city limits but within the City's area of influence. Alternative A would be consistent with most goals, objectives, and policies of Madera County and the City of Madera, including those outlined in the Madera County General Plan. It should be noted, however, that Madera County or City of Madera land use regulations would not apply to the Madera site once the land is taken into trust. The only applicable land use regulations would be Tribal, as the Madera site would become reservation land. The Tribe has entered into an MOU with Madera County, with terms relevant to land use including a commitment by the Tribe to not develop a golf course or water park on the Trust property, except under conditions specified in the MOU.</p> <p>The Madera site is within the influence of the Madera Municipal Airport. Distracting lights, which could be mistaken for airport lights or runways, are considered a hazard and a potentially significant impact. Other possible conflicts could occur between airport operations and Alternative A, including nuisance effects on the Madera site from aircraft overflights; blocking airspace over the Madera site with tall trees, buildings, or other objects; and electrical interference. Potential conflicts represent a potentially significant effect to airport operations. The proposed wastewater and stormwater detention ponds may attract birds, especially during spring and fall migrations. However, wildlife is only considered a hazard if it blocks the direct flight path. The detention basins would be</p>	S	<ul style="list-style-type: none"> ▪ In order to reduce the amount of light that would otherwise escape from the Madera site, the Tribe shall provide nighttime lighting for the parking areas that shines only on the parking areas and not surrounding areas. This can be achieved by employing down pointing lighting fixtures and low-pressure sodium bulbs. ▪ The Tribe shall either maintain current aviation easements within Zones A, B1, and B2 on the Madera site or shall enter into an agreement with the City of Madera to allow for the actions contained in the current aviation easement. This will prevent impacts to human safety or to airport operations. The easement or agreement shall address: <ul style="list-style-type: none"> ○ Overflight: A right-of-way for free and unobstructed passage of aircraft through the airspace of the property at any altitude above a surface specified in the easement (set in accordance with Federal Aviation Regulations Part 77 and/or criteria for terminal instrument approaches). ○ Impacts: A right to subject the property to noise, vibration, fumes, dust, and fuel particle emissions associated with normal airport activity. ○ Height Limits: A right to prohibit the construction or growth of any structure, tree, or other object that 	LTS

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<p>approximately 0.5 miles away from the landing zone and outside of the flight path.</p> <p>No significant effects, such as precluding existing or planned land uses or disruption of access or conflicts with existing land uses, would occur. Placing the casino near the middle of the Madera site leaves a buffer between the casino/hotel and surrounding rural residences. The buffer would minimize effects of noise and light on nearby residences as well as conflicts with surrounding agricultural land uses.</p>		<p>would enter the acquired airspace.</p> <ul style="list-style-type: none"> ○ Access and Abatement: A right-of-entry onto the property, with appropriate advance notice, for the purpose of removing, marking, or lighting any structure or other object that enters the acquired airspace. ○ Other Restrictions: A right to prohibit electrical interference, glare, misleading light sources, visual impairments, and other hazards to aircraft from being created in the property. 	
<p>Due to the proximity of the proposed project to the Madera Municipal Airport, the temporary use of a crane to construct the proposed project features may impact navigable airspace. This is a potentially significant impact.</p>	S	<ul style="list-style-type: none"> ▪ The Tribe shall submit a “Notice of Proposed Construction or Alteration” to the Federal Aviation Administration (FAA) due to the temporary use of a crane to construct the projects on the Madera site prior to construction. Cranes shall not operate unless the FAA determines that their operation will not cause a hazard to air navigation. 	LTS
<p>B Similar to A, although light emissions and other potential conflicts would be slightly lessened due to the less intensive development planned for Alternative B.</p>	S	<p>Same as Alternative A.</p>	LTS
<p>C Similar to A, although light emissions and other potential conflicts would be slightly lessened due to the less intensive development planned for Alternative C.</p>	S	<p>Same as Alternative A.</p>	LTS
<p>D Alternative D would result in commercial development on land that is currently held in trust by the Federal Government. Alternative D would be consistent with most goals, objectives,</p>	LTS	<ul style="list-style-type: none"> ▪ In order to reduce the amount of light that would otherwise escape from the North Fork site, the Tribe shall provide nighttime lighting for the parking areas that shines only on the 	LTS

Less than Significant = LTS

Significant = S

No Effect = NE

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Alternative A = A

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TABLE ES-1
SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
and policies of Madera County. Alternative D is outside the influence of an airport and thus would not affect airport function.		parking areas and not surrounding areas. This can be achieved by employing down pointing lighting fixtures and low-pressure sodium bulbs.	
No significant effects, such as precluding existing or planned land uses or disruption of access or conflicts with existing land uses, would occur. Placing the casino near the middle of the North Fork site would create a buffer between the casino and surrounding rural residential properties. The buffer would minimize effects of noise and light on nearby residences.			
E All current land uses would be retained.	NE	No mitigation is recommended.	NE
Agriculture			
A Alternative A would impact some locally important farmlands, though the site is not currently used for high-value agricultural crops. Since the area is shown to have poor quality agricultural soils and a large portion of the Madera Site would remain as open space that could be used for agricultural purposes, Alternative A would have a less than significant impact to agriculture. Nonetheless, mitigation measures have been included that would further reduce impacts to agriculture.	LTS	<ul style="list-style-type: none"> If feasible within the first year of operation, an agricultural conservation easement shall be purchased (either directly or through an organization or agency whose purpose includes the acquisition and stewardship of agricultural conservation easements) that is at least as large as the area of agricultural land converted on the Madera site (approximately 85 acres). At least a portion of the agricultural conservation easement site shall be designed as prime farmland, unique farmland, farmland of statewide importance, or farmland of local importance. 	LTS
B Similar to Alternative A.	LTS	Same as Alternative A.	LTS
C Similar to Alternative A.	LTS	Same as Alternative A.	LTS
D Based on the location and topography of the North Fork site and the lack of agricultural activity on the site and surrounding properties, it is concluded that the North Fork site does not contain important farmland. Alternative D would therefore	LTS	No mitigation is recommended	LTS

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ENVIRONMENTAL EFFECT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
have a less than significant impact on agriculture				
E	Land zoned for agricultural uses would not be altered and present uses would continue.	NE	No mitigation is recommended.	NE

4.9 PUBLIC SERVICES

Water Supply

A	Since water would be supplied either wholly from on-site wells or from an on-site well in combination with City of Madera Domestic Water Service Well No. 26 (which would continue to be used solely for redundancy or fire flow), a reduction in available capacity of the City's water facilities would not occur.	LTS	No mitigation is recommended.	LTS
B	Similar to Alternative A.	LTS	No mitigation is recommended.	LTS
C	Similar to Alternative A.	LTS	No mitigation is recommended.	LTS
D	Water to supply Alternative D would be provided by either well water or the Madera County Maintenance District 8A. Development of an off-site water supply source would require the construction of water conveyance infrastructure from the North Fork site to the nearest County facilities. While the District has capacity to serve the project, the addition of Alternative D would introduce an unplanned water demand to the overall water supply system. Because adequate water is available from the County, and the Tribe would pay for all infrastructure upgrades required to serve the site, there would be no significant impact to water supply services.	LTS	No mitigation is recommended.	LTS
E	Under the No Action Alternative water supply to the Madera site would not be necessary.	NE	No mitigation is recommended.	NE

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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
Wastewater			
A Wastewater treatment and disposal would occur through an independent on-site system or through connection to the City of Madera WWTP. The on-site treatment options would have no effect on local public service providers because they would be fully paid for and operated by the Tribe. Obtaining City of Madera sewer service would require connection to the City sewer lines. While the City has available capacity to accept wastewater from the casino-hotel, obtaining City of Madera sewer service would require connection to the City sewer lines. Additional sewer line would be needed as well as potential expansion of existing lift stations. This impact is considered significant and mitigation is provided.	S	<p>The following mitigation measure is recommended if off-site wastewater service is utilized:</p> <ul style="list-style-type: none"> The Tribe would form an agreement with the City of Madera to pay the fair share cost of improvements and upgrades to connect to the City of Madera sewer line. The Tribe would also pay the fair share cost of future expansion/improvements to increase wastewater capacity of the City of Madera wastewater treatment plant (see below). 	LTS
B Similar to Alternative A.	S	Same as Alternative A.	LTS
C Similar to Alternative A.	S	Same as Alternative A.	LTS
D Wastewater treatment and disposal would occur through an independent on-site system or connection to the Madera County WWTP for the community of North Fork. The on-site treatment and disposal options would have no effect on local public service providers because they would be fully paid for and operated by the Tribe on-site. Obtaining Madera County sewer service would require connection to the County sewer lines. By adding the Alternative D wastewater flows to the expanded WWTP, the plant would be near capacity.	S	<p>The following mitigation measure is recommended if off-site wastewater service is selected.</p> <ul style="list-style-type: none"> The Tribe would form an agreement with the County of Madera to pay the fair share cost of improvements and upgrades to connect to the County of Madera sewer line. The Tribe would also pay the fair share cost of future expansion/improvements to increase wastewater capacity of the County of Madera wastewater treatment plant (see below). 	LTS
E No wastewater treatment or discharge would be necessary under the No Action Alternative.	NE	No mitigation is recommended.	NE

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ENVIRONMENTAL EFFECT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
Solid Waste				
A	Construction of Alternative A would result in a temporary and therefore insignificant increase in waste generation. The waste generation resulting from operation of Alternative A's various components is estimated to be 7.6 tons per day. Though the impact is not considered significant, additional mitigation measures are proposed under Alternative A, which would further reduce the affects to the landfill.	LTS	<ul style="list-style-type: none"> ▪ Construction waste shall be recycled to the fullest extent practicable by diverting green waste and recyclable building materials from the solid waste stream. ▪ Environmentally preferable materials shall be acquired to the extent practical for construction of facilities. ▪ Installation of a trash compactor for cardboard and paper products. ▪ Solid waste shall be recycled to the fullest extent practicable by diverting green waste and recyclable materials from the solid waste stream. ▪ Installation of recycling bins throughout the facilities for glass, cans and paper products. ▪ A solid waste management plan shall be adopted by the Tribe that addresses recycling and solid waste reduction on-site. The plan shall have a goal of at least 50% diversion of materials from disposal, which includes reduction, recycling, and reuse measures. 	LTS
B	Construction of Alternative B would result in a temporary and therefore insignificant increase in waste generation. The waste generation resulting from operation of Alternative B's various components is estimated to be 5.2 tons per day.	LTS	Same as Alternative A.	LTS
C	Construction of Alternative C would result in a temporary and therefore insignificant increase in waste generation. The	LTS	Same as Alternative A.	LTS

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SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
waste generation resulting from operation of Alternative C's various components is estimated to be 1.3 tons per day.				
D	Construction of Alternative D would result in a temporary and therefore insignificant increase in waste generation. The waste generation resulting from operation of Alternative D's various components is estimated to be 0.79 tons per day.	LTS	Same as Alternative A.	LTS
E	No development would take place under this alternative. Thus, the No Action Alternative would not result in solid waste production.	NE	No mitigation is recommended.	NE
<i>Electric and Natural Gas Services</i>				
A	The Madera site would be served from the existing overhead PG&E electric facilities extending east/west along Avenue 17. Additionally, PG&E could provide natural gas service via the distribution pressure gas lines stepped down from the transmission gas facilities, located adjacent to the Madera site. PG&E has adequate facilities and is willing to serve the Madera site, thus the impact to electric facilities is less than significant.	LTS	No mitigation is recommended.	LTS
B	Similar to Alternative A.	LTS	No mitigation is recommended.	LTS
C	Similar to Alternative A.	LTS	No mitigation is recommended.	LTS
D	The North Fork site would be served by the existing PG&E overhead electric 12-kilovolt line near Road 225 and Rainbow Road. PG&E has indicated that they have adequate facilities and would provide service to the site upon acceptance of application and the required site plans. As there are no natural gas facilities in the vicinity of the North Fork site, the project would utilize solely electric appliances or propane.	LTS	No mitigation is recommended.	LTS
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Significant = S		Alternative B = B	Alternative E = E	

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ENVIRONMENTAL EFFECT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
E	No development would take place under this alternative. Thus, the No Action Alternative would not result in effects to electric or natural gas services.	NE	No mitigation is recommended.	NE
Telecommunications				
A	AT&T is responsible for providing service connection to the property line. The developer is responsible for any on-site infrastructure required to meet the AT&T connection at the property boundary. There are no capacity issues with telecommunications services in the area, thus the impact would be less than significant.	LTS	No mitigation is recommended.	LTS
B	Similar to Alternative A.	LTS	No mitigation is recommended.	LTS
C	Similar to Alternative A.	LTS	No mitigation is recommended.	LTS
D	Ponderosa Telephone Company could provide service to the North Fork Site. Service would require an extension of fiber cable from Road 225 along Rainbow Drive plus a cabinet on site. The Tribe would be required to pay for this extension.	LTS	No mitigation is recommended.	LTS
E	No development would take place under this alternative. Thus, the No Action Alternative would not result in effects to telecommunication services.	NE	No mitigation is recommended.	NE
Law Enforcement				
A	Development of Alternative A would increase demands on law enforcement, judicial, and correctional services due to the new resident population created by new employees moving to Madera County and the City of Madera. Annual costs to the	S	<ul style="list-style-type: none"> The Tribe shall make one-time and annual payments as discussed previously under the mitigation measures for Socioeconomic Conditions, Section 5.2.6. These payments would fund increased demands on City and County law 	LTS

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ENVIRONMENTAL EFFECT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
County would exceed revenues from Alternative A.			enforcement services.	
B	Development of Alternative B would increase demands on law enforcement, judicial, and correctional services due to the new resident population created by new employees moving to Madera County and the City of Madera. Annual costs to the City and County would exceed revenues from Alternative B. Additionally, operation of Alternative B would require the hiring of five deputies and one-half sergeant. The Tribe does not currently have an agreement to pay for these services under Alternative B.	S	Same as Alternative A.	LTS
C	Development of Alternative C would increase demands on law enforcement, judicial, and correctional services due to the new resident population created by new employees moving to Madera County and the City of Madera. Annual costs to the City and County would exceed revenues from Alternative C. Additionally, operation of Alternative C would require the hiring of five deputies and one-half sergeant. The Tribe does not currently have an agreement to pay for these services under Alternative C.	S	Same as Alternative A.	LTS
D	Development of Alternative D would increase demands on law enforcement, judicial, and correctional services due to the new resident population created by new employees moving to Madera County and the City of Madera. Annual costs to the City and County would exceed revenues from Alternative D. Additionally, operation of Alternative D would require the hiring of three deputies and one-half sergeant. Tribe does not currently have an agreement to pay for these services under Alternative C.	S	Same as Alternative A.	LTS

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ENVIRONMENTAL EFFECT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
E	No development would take place under this alternative. Thus, the No Action Alternative would not result in effects to law enforcement.	NE	No mitigation is recommended.	NE
<i>Fire Protection/ Emergency Medical Services</i>				
A	Construction may introduce potential sources of fire to the Madera site. This would pose potentially significant impacts to nearby fire departments that could be called to respond. Development of Alternative A would increase calls for service to fire protection services due to the new resident population created by new employees moving to Madera County and the City of Madera. Operations of Alternative A would also increase calls for service due to the increased patron/employee population at the Madera site. Costs to the County to serve this new population and Alternative A facilities would exceed revenues.	S	<ul style="list-style-type: none"> Any construction equipment that normally includes a spark arrester will be equipped with an arrester in good working order. This includes, but is not limited to, vehicles, heavy equipment, and chainsaws. During construction, staging areas, wilding areas, or areas slated for development using spark-producing equipment will be cleared of dried vegetation or other materials that could serve as fire fuel. To the extent feasible, the contractor will keep these areas clear of combustible materials in order to maintain a firebreak. The Tribe shall make one-time and annual payments as discussed above under the mitigation measures for Socioeconomic Conditions, Section 5.2.6. <u>These payments would fund increased demands on City and County fire protection and emergency medical services.</u> 	LTS
B	Construction of Alternative B may introduce potential sources of fire to the Madera site as described under Alternative A, but smaller in scale due to less developed acreage. Alternative B would increase calls for service to fire protection services due to the new resident population and an increased population of employees and patrons on site. Costs to the City and County to serve this new population and Alternative B facilities would exceed revenues.	S	Same as Alternative A.	LTS
C	Similar to Alternative B.	S	Same as Alternative A.	LTS

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TABLE ES-1
SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
D	<p>Construction of Alternative D may introduce potential sources of fire to the North Fork site as described under Alternative A, but smaller in scale due to less developed acreage. The risk of a serious wildfire would be greater than Alternative A due to the density of vegetation and rural residential developments surrounding the North Fork site.</p> <p>Alternative D would increase calls for service to fire protection services due to the new resident population and an increased population of employees and patrons on site. Costs to the City and County to serve this new population and Alternative D facilities would exceed revenues.</p>	S	Same as Alternative A.	LTS
E	<p>No development would take place under this alternative. Thus, an increased need for fire protection and emergency medical services would not result.</p>	NE	No mitigation is recommended.	NE
<i>Food and Water Supply</i>				
A	<p>Once land is taken into trust, state and local laws and ordinances pertaining to food and water safety for employees and customers would not be applicable, though all recent Tribal-State Compacts have required that tribes “adopt and comply with standards no less stringent than state public health standards for food and beverage handling.” It is assumed that the Tribe’s compact will include similar provisions. The Tribe has additionally assured Madera County in its MOU with the County that it would adopt appropriate food and beverage handling provisions and safe drinking water standards. It should also be noted that the federal Safe Drinking Water Act (SDWA) would be applied to the public water supply at the casino/hotel resort to ensure that public safety is projected. No significant effect to public health and safety due to inadequate food and water safety precautions</p>	LTS	No mitigation is recommended.	LTS

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SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
would occur with operation of Alternative A.				
B	Similar to Alternative A. Though the terms of the MOU would not apply, the Tribe would adhere to State Compact and SDWA standards for food and water safety.	LTS	No mitigation is recommended.	LTS
C	Once land is taken into trust, state and local laws and ordinances pertaining to food and water safety for employees and customers would not be applicable to activities on the Madera site. Therefore, there is a concern that food and water safety would be neglected, impacting the health and safety of employees and customers. Unlike Alternatives A, B, and D, a Tribal-State Compact would not be required for Alternative C. Thus, if a MOU with food and beverage safety provisions was not renegotiated, the SDWA would apply but Compact food safety provisions would not, resulting in a potentially significant effect to public health. Mitigation measures contained in Section 5.2.8 would reduce this effect to a less than significant level.	S	<ul style="list-style-type: none"> The Tribe shall adopt and comply with standards no less stringent than state public health standards for food and beverage handling. The Tribe shall allow inspection of food and beverage services by state or county health inspectors, during normal hours of operation, to assess compliance with these standards, unless inspections are routinely made by an agency of the United States government to ensure compliance with equivalent standards of the United States Public Health Services. 	LTS
D	Similar to Alternative B.	LTS	No mitigation is recommended.	LTS
E	No development would take place under this alternative. Thus, food and water safety issues would not apply.	NE	No mitigation is recommended.	NE
Schools				
A	Schools are located away from the primary areas of project-generated traffic and mitigation measures for traffic would ensure that roads and intersections operate at an acceptable service level. Alternative A would result in an increase of 175 new students. This growth is not substantially larger than current expected growth, thus the development of a new school would not be warranted, and the impact would be less	LTS	<ul style="list-style-type: none"> The Tribe shall make annual payments to Madera County as discussed previously under the mitigation measures for Socioeconomic Conditions, Section 5.2.6. These payments would fund increased demands on County educational services. 	LTS

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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
than significant.			
B Schools are located away from the primary areas of project-generated traffic and mitigation measures for traffic would ensure that roads and intersections operate at an acceptable service level. Alternative B would result in an increase of 112 new students. This growth rate is not substantially larger than current expected growth. Costs to the County, including the cost for educational services, exceed revenues from Alternative B, as shown in Section 4.7.1 .	S	Same as Alternative A	LTS
C Schools are located away from the primary areas of project-generated traffic and mitigation measures for traffic would ensure that roads and intersections operate at an acceptable service level. Alternative C would result in an increase of 81 new students. This growth rate is not substantially larger than current expected growth. Costs to the County, including the cost for educational services, exceed revenues from Alternative C, as shown in Section 4.7.1 .	S	Same as Alternative A.	LTS
D Operation of Alternative D would increase traffic in the vicinity of the North Fork site including roads near North Fork Elementary School. Three intersections within a mile of the school were analyzed in the traffic study for increased traffic due to development of Alternative D. These three intersections would continue to operate at the same service levels. Alternative D would result in an increase of 7 new students. This growth rate is not substantially larger than current expected growth. Costs to the County, including the cost for educational services, exceed revenues from Alternative D, as shown in Section 4.7.1 .	S	Same as Alternative A.	LTS

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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
E No development would take place under this alternative. There would be no increased traffic related hazards to school children. An increased demand on school services would not occur.	NE	No mitigation is recommended.	NE
4.10 OTHER VALUES			
Noise			
A Truck delivery, loading dock, parking lot, on-site traffic flow, and off-site traffic noises are expected to be less than significant based on the distance to the nearest sensitive receptor and noise level generated in comparison to the FHWA 67 dB threshold of significance. Construction activities will result in short-term increases in the local ambient noise environment in excess of the FHWA 67 dB threshold of significance. Due to highly variable mechanical equipment noise levels, mechanical equipment may exceed the significance criteria.	S	<ul style="list-style-type: none"> Construction Noise Consequences - Where feasible, construction activities shall be restricted to weekdays and normal daytime hours (7:00 a.m. to 7:00 p.m.). Mechanical Equipment Noise Consequences - All mechanical equipment shall be designed, installed, and screened where feasible; so as to generate average noise levels of 52 dBA or less at the property lines of existing sensitive receptors. This sound level reduction can be achieved through the use of sound walls and berms, noise attenuating building materials, and vegetative screening as well as through regular monitoring of noise generating equipment. 	LTS
B Similar to Alternative A.	S	Same as Alternative A.	LTS
C Similar to Alternative A.	S	Same as Alternative A.	LTS
D Similar to Alternative A.	S	Same as Alternative A.	LTS
E The No Action Alternative would result in a continuation of existing uses on the Madera and North Fork site. As such, the No Action Alternative would not increase the ambient noise environment through construction or operation of facilities.	NE	No mitigation is recommended.	NE

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Hazardous Materials			
<p>A The potential for discovery of stained soil potentially occurs on the Madera Site. RECs identified in the Phase Is have been removed. Mitigation is incorporated in the scenario where additional stained soil is discovered.</p> <p>Although not anticipated, construction personnel could encounter contamination during construction-related earth moving activities. This could pose a risk to human health and/or the environment. During grading and construction the use of hazardous materials would include substances such as gasoline, diesel fuel, motor oil, hydraulic fluid, solvents, cleaners, sealants, welding flux, various lubricants, paint, and paint thinner. The most likely possible hazardous materials releases would involve the dripping of fuels, oil, and grease from construction equipment, which would occur in relatively low toxicity and concentration. No long-term effects to the soil or groundwater would occur and typical construction management practices limit and often eliminate the effect of such accidental releases. An accident involving a service or refueling truck could pose a hazard to construction employees as well as to the environment.</p> <p>Should on-site wastewater treatment occur, the wastewater treatment plant would require the delivery, storage, and use of hazardous materials, particularly the use of sodium hypochlorite (bleach) and citric acid. Diesel fuel storage tanks will be needed for the operation of four emergency generators provided for the casino. Improper storage of diesel fuels could create a potentially significant risk of soil and groundwater contamination. During operation of the facilities under Alternative A, the majority of waste produced would be non-hazardous. The small quantities of hazardous materials that would be utilized would include motor oil, hydraulic fluid,</p>	LTS	<ul style="list-style-type: none"> ▪ In the event that contaminated soil and/or groundwater are encountered during construction related earth-moving activities, all work shall be halted until a professional hazardous materials specialist or a qualified individual can assess the extent of contamination. If contamination is determined to be significant representatives of the Tribe shall consult with USEPA and BIA to determine the appropriate course of action, exceed USEPA preliminary remediation goals for residential land use, representatives of the Tribe shall consult with the USEPA and BIA to determine the appropriate course of action, including the development of a Sampling Plan and Remediation Plan if necessary. ▪ In the event that suspected hazardous materials are encountered during construction-related earth-moving activities, all work shall be halted until a professional hazardous materials specialist or an equivalent qualified individual can identify the material. If the material is determined to be hazardous a representative from the Tribe shall meet with USEPA and BIA to determine the appropriate course of action, including the appropriate disposal of the material according to State and Federal regulations. ▪ To reduce the potential for accidental releases, fuel, oil, and hydraulic fluids shall be transferred directly from a service truck to construction equipment tanks and shall not otherwise be stored on-site. Paint, thinner, solvents, cleaners, sealants, and lubricants used during construction shall be stored in a locked utility building, handled per the manufacturers' directions, and replenished as needed. ▪ Personnel shall follow written standard operating procedures (SOPs) for filling and servicing construction equipment and 	LTS

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SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
solvents, cleaners, lubricants, paint, and paint thinner. The amount and type of hazardous materials that would be generated are common to commercial sites and do not pose unusual storage, handling or disposal issues. A hazardous materials release could occur that would pose a hazard to human health or the environment if these materials are not stored, handled, or disposed of according to State, Federal, and manufacturer's guidelines. The amount and types of hazardous materials that would be stored, used, and generated during the operation of Alternative A could have a potentially significant impact to the environment and public.		<p>vehicles. The SOPs, which are designed to reduce the potential for incidents involving the hazardous materials, shall include the following:</p> <ul style="list-style-type: none"> ○ Refueling shall be conducted only with approved pumps, hoses, and nozzles. ○ Catch-pans shall be placed under equipment to catch potential spills during servicing. ○ All disconnected hoses shall be placed in containers to collect residual fuel from the hose. ○ Vehicle engines shall be shut down during refueling. ○ No smoking, open flame, or welding shall be allowed in refueling or service areas. ○ Refueling shall be performed away from bodies of water to prevent contamination of water in the event of a leak or spill. ○ Service trucks shall be provided with fire extinguishers and spill containment equipment, such as absorbents. ○ Should a spill contaminate soil, the soil shall be put into containers and disposed of in accordance with local, state, and federal regulations. ○ All containers used to store hazardous materials shall be inspected at least once per week for signs of leaking or failure. All maintenance and refueling areas shall be inspected monthly. Results of inspections shall be 	

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SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		<p>recorded in a logbook that would be maintained on-site.</p> <ul style="list-style-type: none"> ▪ The amount of hazardous materials used in project construction and operation shall be consistently kept at the lowest volumes needed. ▪ The least toxic material capable of achieving the intended result shall consistently be used to the extent practicable. ▪ A hazardous materials and hazardous waste minimization program shall be developed, implemented, and reviewed annually by the Tribe to determine if additional opportunities for hazardous materials and hazardous waste minimization are feasible, for both project construction and operation. ▪ The contractor shall be requested to avoid and minimize the use of hazardous materials during the project's construction to the fullest extent practicable. ▪ The use of pesticides and toxic chemicals shall be minimized or less toxic alternatives shall be used to the greatest extent feasible in landscaping. ▪ If secondary diesel tanks are necessary for the emergency generators, the tanks shall have double walls with integrated leak detection systems. If a leak occurs within the inner tank, the outer tank shall contain the leak, while a pressure sensor signals the leak on the indicator panel of the generator unit. Security personnel and casino managers, trained in emergency response procedures, shall regularly monitor the generator units to ensure they are functioning as intended and no leaks are present. ▪ Excavation and proper disposal of stained soils shall occur on 	

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ENVIRONMENTAL EFFECT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
			the Madera site as recommended in Appendix P.	
B	Existing environmental conditions are the same as those described for Alternative A. Potentially significant construction and operation effects are similar to those described under Alternative A although on a smaller scale due to the reduced size of Alternative B.	S	Same as Alternative A.	LTS
C	Existing environmental conditions are the same as those described for Alternative A. Potentially significant construction and operation effects are similar to those described under Alternative A although on a smaller scale due to the reduced size of Alternative C.	S	Same as Alternative A.	LTS
D	<p>The Phase I ESA conducted by AES identified one site that was listed on several regulatory agency databases for hazardous materials releases. The site is located down gradient with respect to the anticipated groundwater flow direction from the North Fork Rancheria. Implementation of this Alternative will not cause the environment or public to be affected by known hazardous materials currently on the North Fork site.</p> <p>Water from one domestic well on the North Fork site has been reported to have an unpleasant taste and odor and a visible oily sheen on the surface that could signify an existing environmental condition on the North Fork site.</p> <p>Potentially significant construction and operation effects are similar to those described under Alternative A. Under Alternative D, substantially less construction would take place and potential for impacts would be lessened.</p>	S	<p>In addition to the general mitigation measures listed for Alternative A, the following mitigation specific to the North Fork site is recommended:</p> <ul style="list-style-type: none"> Before site development work begins groundwater and soil samples shall be collected in the area of the domestic well located on the site. Soil samples, groundwater samples, and water from the well shall be analyzed for total petroleum hydrocarbons and volatile organic compounds. In the event that contaminated soil and/or groundwater are encountered a professional hazardous materials specialist or a qualified individual shall assess the potential risk in conjunction with USEPA and BIA. The risk would be based on laboratory analysis of soils and/or groundwater if detectable levels are present. If risks are determined to be significant representatives of the Tribe shall consult with USEPA and BIA to determine the appropriate course of action, including the development of a Sampling Plan and Remediation Plan if necessary. 	LTS
E	There is no reportable hazardous materials contamination in or near the North Fork or Madera sites. Existing uses on the	NE	No mitigation is recommended.	NE

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ENVIRONMENTAL EFFECT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
sites would continue under the No Action Alternative and no effects from hazardous materials would result.				
Visual Resources				
A	An area of urban development amidst the primarily undeveloped agricultural lands of the Madera site would represent a change to the viewshed and be visible from several public vantage points. However, existing commercial/industrial development in the area would serve to reduce the intensity of the casino/hotel resort's visual impact. Further, the casino/hotel resort has also been designed to reduce visual effects. Finally, no local or State-designated scenic corridors would be affected by the implementation of Alternative A.	LTS	No mitigation is recommended.	LTS
B	The impacts on the viewshed by Alternative B would be similar, although lessened due to the reduced intensity program and absence of a hotel, when compared with Alternative A. The removal of the hotel, in particular, would lessen the visual impact of the developments when viewed from a distance.	LTS	No mitigation is recommended.	LTS
C	The impacts on the viewshed by Alternative C would be similar, but lessened when compared with Alternative A due largely to the absence of a hotel. The design of the commercial developments would be attractive but probably less architecturally elaborate when compared with Alternative A.	LTS	No mitigation is recommended.	LTS
D	An area of urban development in the otherwise undeveloped rural residential lands of the North Fork site would represent a change to the viewshed, but would not be visible from any public vantage points. In addition, no local or State-designated scenic corridors would be affected by the implementation of	LTS	No mitigation is recommended.	LTS
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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
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Alternative D.

E	No urban transformation of the Madera site or North Fork site would take place under Alternative E. Existing land uses would continue into the foreseeable future.	NE	No mitigation is recommended.	NE
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4.11 CUMULATIVE

Land Resources

A	The principal effects to Land Resources associated with Countywide development would be localized topographical changes and soil attrition. Local permitting requirements for construction would address regional stormwater, geotechnical, seismic and mining hazards; therefore, no cumulative impacts related to Land Resources would occur.	LTS	No mitigation is recommended.	LTS
B	Similar to Alternative A.	LTS	No mitigation is recommended.	LTS
C	Similar to Alternative A.	LTS	No mitigation is recommended.	LTS
D	As with Alternative A, local permitting requirements for construction would address regional stormwater, geotechnical, seismic and mining hazards; therefore, no significant cumulative impacts related to land resources would occur.	LTS	No mitigation is recommended.	LTS
E	Under Alternative E, no project-related activities would occur. Therefore, cumulative trends would continue, but the No Action Alternative would not result in significant contributions to cumulative effects.	NE	No mitigation is recommended.	NE

Water Resources

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February 2009		lxxv		North Fork Rancheria Casino and Hotel Final Environmental Impact Statement

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<p>A As described in Section 4.3, all of the known off-site wells located within a one-mile radius of the Madera site would experience minor drawdown effects from proposed pumping for Alternative A. Cumulative developments would increase use of the underground aquifer, and could result in a reduced water supply. However, Alternative A would not result in a significant cumulative contribution to regional groundwater overdraft based on provisions for recharge in the MID MOU.</p> <p>Cumulative effects to water quality may take place as the result of future developments in combination with Alternative A. Alternative A could contribute to changes in runoff characteristics and water quality located near the Madera site as a result of project development. However, the Tribe has made appropriate design allowances which would reduce the project's contribution to cumulative effects to a less than significant level. Other development projects incorporate similar or identical measures as required by local regulations and Federal law. With the incorporation of these features, Alternative A would not result in cumulative water quality effects.</p>	LTS	Same as mitigation listed above for Section 4.3 , Water Resources.	LTS
<p>B Similar to Alternative A, but slightly lessened due to the smaller scale of the facilities proposed by Alternative B. Also the terms of the MID MOU would not apply to Alternative B, resulting in a potentially significant contribution to regional groundwater overdraft conditions.</p>	S	Same as mitigation listed above for Section 4.3 , Water Resources.	LTS
<p>C Similar to Alternative A, but slightly lessened due to the smaller scale of the facilities proposed by Alternative C. Also the terms of the MID MOU would not apply to Alternative C, resulting in a potentially significant contribution to regional groundwater overdraft conditions.</p>	S	Same as mitigation listed above for Section 4.3 , Water Resources.	LTS

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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
D Similar to Alternative A, but lessened due to the smaller scale of the facilities proposed by Alternative D. Additionally, impacts would be located near the North Fork Site. Also, the proposed pumping rate for Alternative D is relatively small and is not expected to result in noticeable regional impacts. Thus, a less than significant cumulative impact to groundwater resources would result.	LTS	Same as mitigation listed above for Section 4.3 , Water Resources.	LTS
E Under Alternative E, no project-related activities would occur. Therefore, cumulative trends would continue, but the No Action Alternative would not result in significant contributions to cumulative effects.	NE	No mitigation is recommended.	NE

Air Quality

A Ozone and PM Emissions - Alternative A, along with other cumulative development would exacerbate the regional trend towards higher PM ₁₀ emissions but to a less than significant level, because of dust control measures being successfully implemented throughout the air basin. In 2020, both ROG and NO _x unmitigated emissions generated by Alternative A would still exceed the 10-tpy significance thresholds.	S	Same as mitigation listed above for Section 4.4 , Air Quality and Section 4.8 , Resource Use Patterns. Mitigation could potentially reduce the cumulative effects of Alternative A to a less than significant level, but without empirical data to generate a repeatable reduction rate, it is conservatively assumed that substantial reductions would not occur and that a significant cumulative effect on air quality remains after mitigation.	S
Carbon Monoxide Concentrations - Traffic operations at signalized study intersections would be LOS D or better with Alternative A under 2030 long-term future cumulative background conditions and traffic mitigation measures. Intersections operating at LOS D or better typically do not result in CO concentrations that exceed State or Federal standards. This impact is significant and with traffic mitigation would be reduced to less than significant.			
Odor Effects - Several commercial centers are planned in the area around the intersection of Avenue 17 and State Route 99. The SJVAPCD's list of common types of facilities that have			

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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
<p>been known to produce odors in the SJV occur mostly in manufacturing/industrial zones and no industrial areas are projected for the area, therefore Alternative A, in combination with cumulative development, would have a less than significant odor effect.</p> <p>Toxic Air Contaminants - Several commercial centers are planned in the area around the intersection of Avenue 17 and State Route 99. Potential toxic air contaminant sources such as gasoline dispensing facilities and dry cleaners could be located in these commercial areas. The SJVAPCD permit process, City permitting processes, and future environmental review processes will combine to ensure that Alternative A, in combination with cumulative development, would have a less than significant effect from toxic air contaminants.</p> <p>Climate Change - Construction and Operation of Alternative A would result in the generation of greenhouse gas (GHG) emissions. GHG emissions may have a significant impact on climate change. The emissions associated with construction and operation of Alternative A can be reduced to a less than significant level with implementation of mitigation measures</p>			
<p>B Ozone and PM Emissions - Alternative B, along with other cumulative development, would exacerbate the regional trend towards higher PM₁₀ emissions but to a less than significant level because of dust control measures being successfully implemented throughout the air basin. In 2020, ROG unmitigated emissions generated by Alternative B would still exceed the 10-tpy significance thresholds.</p> <p>Carbon Monoxide Concentrations - Traffic operations at signalized study intersections would be LOS D or better with Alternative B under 2030 long-term future cumulative background conditions and traffic mitigation measures.</p>	S	<p>Same as mitigation listed above for Section 4.4, Air Quality and Section 4.8, Resource Use Patterns. Mitigation could potentially reduce the cumulative effects of Alternative B to a less than significant level, but without empirical data to generate a repeatable reduction rate, it is conservatively assumed that substantial reductions would not occur and that a significant cumulative effect on air quality remains after mitigation.</p>	S

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ENVIRONMENTAL EFFECT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
<p>Intersections operating at LOS D or better typically do not result in CO concentrations that exceed State or Federal standards. This impact is significant and with traffic mitigation would be reduced to less than significant.</p> <p>Cumulative impacts from odors, toxic air contaminants, and climate change are similar to Alternative A.</p>				
C	<p>Ozone and PM Emissions – As with Alternative A, both ROG and NO_x unmitigated emissions generated by Alternative C would still exceed the 10-tpy significance thresholds in 2020.</p> <p>Carbon Monoxide Concentrations - Traffic operations at signalized study intersections would be LOS D or better with Alternative C under 2030 long-term future cumulative background conditions and traffic mitigation measures. Intersections operating at LOS D or better typically do not result in CO concentrations that exceed State or Federal standards. This impact is significant and with traffic mitigation would be reduced to less than significant.</p> <p>Cumulative impacts from odors, climate change, and toxic air contaminants are similar to Alternative A.</p>	S	<p>Same as mitigation listed above for Section 4.4, Air Quality and Section 4.8, Resource Use Patterns. Mitigation could potentially reduce the cumulative effects of Alternative C to a less than significant level, but without empirical data to generate a repeatable reduction rate, it is conservatively assumed that substantial reductions would not occur and that a significant cumulative effect on air quality remains after mitigation.</p>	S
D	<p>Ozone and PM Emissions - Alternative D, along with other cumulative development, would exacerbate the regional trend towards higher PM₁₀ emissions but to a less than significant level, because of dust control measures being successfully implemented throughout the air basin.</p> <p>Carbon Monoxide Concentrations - Traffic operations at signalized study intersections would be LOS D or better with Alternative D under 2030 long-term future cumulative background conditions and traffic mitigation measures. Intersections operating at LOS D or better typically do not</p>	S	<p>Same as mitigation listed above for Section 4.8, Resource Use Patterns.</p>	LTS

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ENVIRONMENTAL EFFECT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
<p>result in CO concentrations that exceed State or Federal standards. This impact is significant and with traffic mitigation would be reduced to less than significant.</p> <p>Odor Effects - The SJVAPCD's list of common types of facilities that have been known to produce odors in the SJV occur mostly in manufacturing/industrial zones and no industrial areas are projected for the area, therefore Alternative D in combination with any cumulative development would have a less than significant odor effect.</p> <p>Toxic Air Contaminants - No industrial or commercial areas are projected for the area; therefore Alternative D in combination with cumulative development would have a less than significant effect from toxic air contaminants.</p> <p>Climate Change - Cumulative impacts are similar to Alternative A but reduced due to the reduced level of development and reduced traffic generated by Alternative D.</p>				
E	Under Alternative E, no project-related activities would occur. Therefore, the No Action Alternative would not result in significant contributions to cumulative effects.	NE	No mitigation is recommended.	NE
Biological Resources				
A	Wildlife and Habitats - Disturbance to habitats and increases in human activity within the vicinity from other proposed projects could incrementally contribute to past, present and future effects to wildlife and habitats. The habitat on the Madera site that would be disturbed by Alternative A is presently disturbed agricultural land, which is of relatively little biological value. In addition, sensitive wetland habitat on the Madera site would be avoided. Thus, Alternative A's contribution to the cumulative effects to wildlife and habitats in the region would be less than	S	Same as mitigation listed above for Section 4.5 , Biological Resources.	LTS
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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
<p>significant.</p> <p>Federally Listed Species - Disturbance to vernal pools, burrowing owl habitat, San Joaquin pocket mouse habitat, San Joaquin kit fox habitat, and California tiger salamander habitat and increases in human activity within the vicinity from other proposed projects, including the Caltrans SR-99 freeway improvement projects and local planned development projects, could cumulatively affect Federally listed species. This is a potentially significant cumulative impact to threatened and/or endangered species. Other projects in the area will comply with local and Federal laws regulating threatened and/or endangered species to avoid impacts to such species, and unavoidable impacts will be adequately mitigated through the US Fish and Wildlife Service (USFWS). Therefore, a less than significant cumulative effect to Federally listed species would result.</p> <p>Migratory Birds - Alternative A and other projects, when considered cumulatively, could result in potentially significant impacts to nesting migratory birds. Other projects in the area will avoid and/or adequately mitigate for migratory birds by following the regulations set forth in the Migratory Bird Treaty Act.</p> <p>Waters of the U.S. - Any adverse indirect effects to waters of the U.S. would be avoided by the implementation of project features designed to prevent increased erosion and sedimentation and increase flood storage on the site. Other projects in the area will follow the provisions set forth in the Clean Water Act to reduce project impacts to a less than significant level.</p>			
B The impacts of Alternative B to biological resources are similar, but lessened due to the smaller scope of Alternative B	S	Same as mitigation listed above for Section 4.5 , Biological	LTS

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facilities, when compared with those of Alternative A.			Resources.	
C	The impacts of Alternative C to biological resources are similar, but lessened due to the smaller scope of Alternative C facilities, when compared with those of Alternative A.	S	Same as mitigation listed above for Section 4.5 , Biological Resources.	LTS
D	Wildlife and Habitats - Disturbance to habitats and increases in human activity within the vicinity from other proposed projects could incrementally contribute to past, present and future effects to wildlife and habitats. The habitat on the Madera site that would be disturbed by Alternative A is presently used for rural residential purposes and open space. However, over 50 percent of the North Fork site would remain in its present state. In addition, most of the sensitive wetland habitat on the North Fork site would be avoided. Thus, Alternative D's contribution to the cumulative effects to wildlife and habitats in the region would be less than significant.	S	Same as mitigation listed above for Section 4.5 , Biological Resources.	LTS
<p>Federally Listed Species - An increase in human activity within the vicinity of the North Fork site from Alternative D and other proposed projects in the area could cumulatively and adversely affect Federally listed species. It is assumed, that other projects in the area will comply with Federal laws regulating threatened and/or endangered species to avoid impacts to such species and unavoidable impacts will be adequately mitigated through the USFWS. Therefore, a less than significant cumulative effect to threatened and/or endangered species would result.</p> <p>Migratory Birds - Alternative D and other projects, when considered cumulatively, could result in significant impacts to nesting migratory birds. This is potentially a significant impact. Other projects in the area will avoid and/or adequately mitigate for migratory birds by following the regulations set forth in the</p>				

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Migratory Bird Treaty Act.			
Waters of the U.S. - Alternative D would directly affect approximately 0.1 acres of "waters of the U.S." Other projects in the area will follow the provisions set forth in the Clean Water Act to reduce project impacts to a less than significant level of impact. Alternative D could result in significant cumulative effects to waters of the U.S.			
E Under Alternative E, no project-related activities would occur. Therefore, cumulative trends would continue, but the No Action Alternative would not result in significant contributions to cumulative effects.	NE	No mitigation is recommended.	NE
Cultural Resources			
A Cumulative effects to cultural resources typically occur when sites that contain cultural features or artifacts are disturbed by development. Impacts to these cultural resources are likely to occur as residential and commercial growth occurs in Madera County, including near the community of Madera and its surrounding cities.	S	Same as mitigation listed above for Section 4.6 , Cultural Resources.	LTS
The records search and archival research indicate that the study area is in a region sensitive for both prehistoric/pre-contact resources and historic-period resources. Significant cumulative impacts to cultural resources could occur if sites continued to be lost, damaged, or destroyed without appropriate recordation, preservation, or data recovery.			
B Potential cumulative impacts for cultural resources issues would be similar to those of Alternative A.	S	Same as mitigation listed above for Section 4.6 , Cultural Resources.	LTS
C Potential cumulative impacts for cultural resources issues	S	Same as mitigation listed above for Section 4.6 , Cultural	LTS

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would be similar to those of Alternative A.		Resources.	
D Significant cumulative impacts to cultural resources could occur if sites were lost, damaged, or destroyed without appropriate recordation or data recovery. The North Fork site is located in a more culturally sensitive location than the Madera site. However, less development is also planned during the cumulative time period in the vicinity of the North Fork site. Since no known cultural resources would be affected by Alternative D, and limited cumulative development is planned in the area, a less than significant cumulative effect to known resources would occur.	LTS	Same as mitigation listed above for Section 4.6 , Cultural Resources.	LTS
E Under Alternative E, no project-related activities would occur. Therefore, cumulative trends would continue, but the No Action Alternative would not result in significant contributions to cumulative effects.	NE	No mitigation is recommended.	NE
Socioeconomic Conditions			
A Alternative A would introduce a substantial new source of economic activity to Madera County. The creation of jobs would serve the growing County population. Alternative A would add to the diversification of the local economy.	LTS	No mitigation is recommended.	LTS
As population growth occurs in the region, fiscal demands on local governments will increase for necessary services. The local governments in the region address increased service demand from new developments by requiring various development fees and assessments. Alternative A would not be subject to development fees. However, the Tribe has entered into a MOU with Madera County, by which the Tribe agrees to pay fees equivalent to development fees, ensuring that Alternative A's impact to the cumulative fiscal demands on			

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local government is less than significant.				
B	Cumulative socioeconomic effects of Alternative B would be similar to those of Alternative A, except that the MOU with the County would not apply. Thus, costs would potentially be incurred by the County, resulting in a potentially significant cumulative effect.	S	Same as mitigation listed above for Section 4.7 , Socioeconomic Conditions.	LTS
C	Cumulative socioeconomic effects of Alternative C would be similar to those of Alternative A, except that potential economic beneficial effects would be lessened, the concerns with gaming on the site would not apply, and the MOU with the County would not apply. A number of cumulative retail projects are currently planned in the vicinity of the Madera site. As with Alternative B, costs would potentially be incurred by the County, resulting in a potentially significant cumulative effect.	S	Same as mitigation listed above for Section 4.7 , Socioeconomic Conditions.	LTS
D	Cumulative socioeconomic effects of Alternative D would be similar to those of Alternative A, except that beneficial effects to the regional economy and the Tribe would be substantially lessened and the MOU with the County would not apply. Thus, costs could potentially be incurred by the County, resulting in a potentially significant cumulative effect.	S	Same as mitigation listed above for Section 4.7 , Socioeconomic Conditions.	LTS
E	Under Alternative E, no project-related activities would occur. Therefore, cumulative trends would continue, but the No Action Alternative would not result in significant contributions to cumulative effects.	NE	No mitigation is recommended.	NE
Resource Use Patterns				
A	Transportation/Circulation – In 2030, 6 freeway segments, 1 roadway segment, and 13 intersections are shown to operate at an unacceptable LOS without the addition of project traffic.	S	Same as mitigation listed above for Section 4.8 , Resource Use Patterns.	LTS

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<p>With the addition of project traffic under Alternative A, 6 freeway segments, 1 roadway segment, and 17 intersections are shown to operate at an unacceptable LOS, resulting in a significant impact.</p> <p>Land Use - Although Alternative A would not be entirely consistent with the Madera County General Plan, no significant effects have been identified. Since no other tribal projects are planned on the Madera site and all other development occurring around the Madera site would be required to comply fully with local planning guidelines, no significant cumulative land use effects would occur.</p> <p>Agriculture - The development projects in the area would lead to a loss of agricultural land. Assuming this trend continues due to the future population increase expected in Madera County, tens of thousands of acres of farmland would be lost during the next several decades. Given that Alternative A would not induce further development in the region and would develop less than half of the Madera site, the loss of farmland is not considered a significant contribution to the cumulative loss of agricultural land. Nonetheless, mitigation is included that would reduce cumulative impacts to the loss of agricultural land.</p>			
<p>B Transportation/Circulation – The cumulative impact is similar to Alternative A. With the addition of project traffic under Alternative B, 6 freeway and 2 roadway segments, 18 intersections are shown to operate at an unacceptable LOS, resulting in a significant impact.</p> <p>Land Use - Cumulative land use effects would be similar to those of Alternative A, given the similar, although reduced intensity, land use.</p>	S	Same as mitigation listed above for Section 4.8 , Resource Use Patterns.	LTS
Less than Significant = LTS	Significant = S	No Effect = NE	Beneficial Effect = BE
Alternative A = A	Alternative B = B	Alternative C = C	Alternative D = D
Alternative E = E			

TABLE ES-1
SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
<p>Agriculture - Cumulative effects to agriculture would be similar to those of Alternative A, but reduced due to the reduced intensity development. Nonetheless, mitigation is included that would reduce cumulative impacts to the loss of agricultural land.</p>			
<p>C Transportation/Circulation - The cumulative impact is similar to Alternative A. With the addition of project traffic under Alternative C, 6 freeway segments, 1 roadway segment, and 18 intersections are shown to operate at an unacceptable LOS, resulting in a significant impact.</p>	S	Same as mitigation listed above for Section 4.8 , Resource Use Patterns.	LTS
<p>Land Use - Cumulative land use effects would be lessened when compared to those of Alternative A. Although Alternative C would also not be entirely consistent with many local land use plans, it would represent a more typical type of development than a casino. As with Alternative A, a less than significant cumulative land use effect would result.</p>			
<p>Agriculture - Cumulative effects to agriculture would be similar to those of Alternative A, but reduced due to the reduced intensity of development. Nonetheless, mitigation is included that would reduce cumulative impacts to the loss of agricultural land.</p>			
<p>D Transportation/Circulation - With or without the addition of project traffic, four study intersections are forecast to operate at an unacceptable LOS, resulting in a significant impact.</p>	S	Same as mitigation listed above for Section 4.8 , Resource Use Patterns.	LTS
<p>Land Use - Although Alternative D would not be entirely consistent with the Madera County General Plan, the General Plan would not apply to the North Fork site, as it is currently trust property. No significant effects have been identified. Since no other tribal projects are planned and all other development occurring around the North Fork site would be</p>			

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SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
<p>required to comply fully with local planning guidelines, no significant cumulative land use effects would occur.</p> <p>Agriculture - Soils within the site have not been designated according to their farming potential. Based on the location and topography of the North Fork site, it is unlikely that the North Fork site contains important farmland. Due to the inferior quality of land available for farming purposes on the North Fork site and in the area of cumulative rural residential development in the vicinity of the North Fork site, cumulative impacts to agriculture from the development of Alternative D are considered less than significant.</p>			
E Under Alternative E, no project-related activities would occur. Therefore, cumulative trends would continue, but the No Action Alternative would not result in significant contributions to cumulative effects.	NE	No mitigation is recommended.	NE
Public Services			
A Public Water Utilities - Alternative A would not cause a loss of capacity with any public water utility. Thus, the cumulative effects of cumulative development on public water systems would be affected by Alternative A.	LTS	No mitigation is recommended.	LTS
<p>Wastewater Service - Since the Madera site is outside of the City's service area, the Tribe would be required to develop an agreement with the City to receive off-site service. The agreement would ensure that the City has the desire and capacity to accept wastewater for Alternative A and will require that the Tribe pay all costs to develop wastewater service lines to the property and the continuing costs of service. With the negotiation of such an agreement, no significant cumulative effects to wastewater service would occur.</p>			

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SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
<p>Given the high quality of effluent that would be discharged from an on-site WWTP, no significant water quality degradation would occur and thus indirect cumulative effects to downstream public water users and dischargers would be less than significant, even considering future development and expansion of public wastewater treatment facilities.</p>			
<p>Solid Waste - Alternative A would represent 0.69% of the landfill's daily intake. The remaining 500 tons is ample daily capacity for Alternative A and housing and business development expected in Madera County and the City of Madera. The expected closure date of the landfill is 2032. Due to County planning and landfill capacity, the cumulative impacts to solid waste services would be less than significant.</p>			
<p>Electricity, Natural Gas, and Telecommunications - PG&E has confirmed that it can provide service for Alternative A. The electrical demands of the anticipated cumulative projects are unknown. PG&E planning departments work with city and county planners to ensure that adequate capacity is available for future development. Individual projects would be responsible for paying development or user fees to receive electrical, natural gas, cable, and telephone services. Thus, the cumulative effects would be less than significant.</p>			
<p>Law Enforcement - Both commercial and housing projects generate calls for service and patrol needs. Adverse effects could include an insufficient number of patrolling officers and inadequate facilities. The local governments in the region address increased service demand from new developments, such as law enforcement services, by requiring various development fees and assessments, and through increased property tax increments. Alternative A would generate a need for additional officers, and through the MOU, the Tribe is funding 5.5 additional County officers and funding for the City</p>			

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SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
<p>of Madera. Additionally, the positions and funding that the Tribe is funding would be beneficial in providing additional officers for expected growth. Thus, the cumulative effect would be less than significant.</p> <p>Fire Protection and Emergency Medical Services - Alternative A would be primarily served by the Madera County Fire Department; thus no significant cumulative effects would occur to the City of Madera Fire Department. Through the MOU the Tribe would provide funding for County fire protection services to serve Alternative A. Cumulative developments in unincorporated Madera County may generate a need for additional fire protection and emergency medical services. The local governments in the region address increased service demand from new developments, such as fire protection services, by requiring various development fees and assessments, and through increased property tax increments. Additionally, the positions that the Tribe is funding would be beneficial in providing additional firefighters and equipment for expected growth. Thus, the cumulative effect to fire protection services would be less than significant.</p> <p>Emergency medical services would be provided through a private service provider. These services are primarily funded by the individuals requiring service, through that individual's health insurance provider. The ambulance company's fee structure would account for any additional equipment or staff needed to serve the needs of Alternative A in combination with cumulative population growth. Thus, significant cumulative effects to emergency medical services would not occur.</p> <p>School Services – Alternative A, in combination with other planned development, would result in an increase in students that would need to be accommodated by local school districts. However, this increase in students can be accommodated by</p>			

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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
existing capacity and planned development of school facilities, which is ongoing due to population growth in Madera County. Thus, a significant cumulative effect to school services would not occur.			
B Effects to public services would be similar to those of Alternative A, except that the MOU with the County would not apply, resulting in potentially significant impacts to public services.	S	Same as mitigation listed above for Section 4.9 , Public Services.	LTS
C Effects to public services would be similar to those of Alternative A, except that the MOU with the County would not apply, resulting in potentially significant impacts to public services.	S	Same as mitigation listed above for Section 4.9 , Public Services.	LTS
D Cumulative effects to public services would be lessened when compared to those of Alternative A, given the much smaller development planned under Alternative D. However, under Alternative D, the MOU with the County would not apply, resulting in potentially significant impacts to public services.	S	Same as mitigation listed above for Section 4.9 , Public Services.	LTS
E Under Alternative E, no project-related activities would occur. Therefore, cumulative trends would continue, but the No Action Alternative would not result in significant contributions to cumulative effects.	NE	No mitigation is recommended.	NE
Other Values			
A Noise - Cumulative project-related traffic noise level increases are only predicted to increase by 1.4 dBA at the nearest receptor. The predicted cumulative increase in noise is below the FICON significance criteria. Therefore, there are no significant cumulative noise effects issues associated with this alternative.	S	Same as mitigation recommended above for Section 4.10 .	LTS

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SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
<p>Hazardous Materials - Cumulative hazardous materials involvement has the potential to occur as a result of continuing development occurring in the region. This involvement could result from the use of hazardous materials in the construction process or the disturbance of existing hazardous materials present on a construction site. There are no existing known hazardous materials on the Madera site.</p> <p>Visual Resources - Development of Alternative A would not be consistent with all local land use regulations and would contribute to cumulative visual impacts. However, the Madera site is not located in a scenic corridor or an area of high aesthetic value. Substantial development is present in all directions from the Madera site, except to the west. The proposed project would be attractively designed as a resort facility and, in combination with other nearby development, would not constitute a significant cumulative visual effect.</p>			
<p>B Noise - Cumulative project-related traffic noise level increases are only predicted to increase by 0.1 dBA at the site and 1.5 dBA at the nearest receptor. The predicted cumulative increase in noise is below the FICON significance criteria, therefore, a less than significant cumulative impact would result.</p> <p>Hazardous Materials - Cumulative hazardous materials impacts would be similar to Alternative A, given the similar scope of construction that would occur on the Madera site and the identical cumulative development that would occur in the County.</p> <p>Visual Resources - Cumulative visual resources effects would be similar to those of Alternative A, except reduced in intensity given that Alternative B would not include the development of</p>	S	Same as mitigation recommended above for Section 4.10.	LTS

TABLE ES-1
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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
a hotel.			
<p>C Noise - Cumulative project-related traffic noise level increases are only predicted to increase by 0.1 dBA at the site and 1.5 dBA at the nearest receptor. The predicted cumulative increase in noise is below the FICON significance criteria, therefore, a less than significant cumulative impact would result.</p> <p>Hazardous Materials - Cumulative hazardous materials impacts would be similar to Alternative A, given the similar scope of construction that would occur on the Madera site and the identical cumulative development that would occur in the County.</p> <p>Visual Resources - Cumulative visual resources effects would be similar to those of Alternative A. Although the Alternative C development would be a more typical kind of development and smaller in height, it may not be considered as aesthetically attractive as the Alternative A development, although such assessments are subjective. As with Alternative A, a less than significant cumulative visual resources effect would result.</p>	S	Same as mitigation recommended above for Section 4.10.	LTS
<p>D Noise - Cumulative project-related traffic noise level increases are only predicted to increase on average by 3.1 dBA. The predicted cumulative increase in noise is below the FICON significance criteria. Therefore, there are no significant cumulative noise effects.</p> <p>Hazardous Materials - Cumulative hazardous materials involvement has the potential to occur as a result of continuing development occurring in the region. However, the primarily rural residential development occurring in the vicinity of the North Fork site does not typically result in significant use or storage of hazardous materials. There are no existing known</p>	S	Same as mitigation recommended above for Section 4.10.	LTS

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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
<p>hazardous materials on the North Fork site. Although, the amount and types of hazardous materials that would be stored, used, and generated during the construction and operation of Alternative D could have a potentially significant impact to the environment and public. Mitigation would reduce the impacts from construction and operation to a less than significant level.</p> <p>Visual Resources - Cumulative development is limited in the area of the North Fork site. In addition, the North Fork site is not easily visible from public vantage points. Thus, the development proposed by Alternative D, in combination with other nearby rural residential development, would not represent a significant cumulative effect to visual resources.</p>			
E Under Alternative E, no project-related activities would occur. Therefore, cumulative trends would continue, but the No Action Alternative would not result in significant contributions to cumulative effects.	NE	No mitigation is recommended.	NE

4.12.2 INDIRECT EFFECTS FROM OFF-SITE TRAFFIC MITIGATION

Land Resources

<p>The construction of roadway improvements would require grading and the introduction of fill material to extend the existing shoulders and roadbed. The increase of impervious surfaces and additional earthwork could result in erosion of soils. Local jurisdictions would require the use of stable fill material, engineered embankments, and erosion control features to reduce the potential for slope instability, subsidence and erosion. With standard construction practices and specifications required by the NPDES permit program, the roadway improvements identified under the project alternatives are expected to result in less than significant indirect effects to land resources. The roadway improvements would not</p>	LTS	No mitigation is recommended.	LTS
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SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
significantly affect the ability to extract minerals.			
Water Resources			
The development of roadway improvements at the locations identified could affect water resources due to grading and construction activities and an increase in impervious surfaces. Potential effects include an increase of surface runoff and increased erosion that could adversely affect surface water quality due to increases in sediment and roadway pollutants such as grease and oil.	LTS	No mitigation is recommended.	LTS
The effects to runoff volumes resulting from the increase in impervious roadways are expected to be minimal due to the limited extent of the improvements in comparison to the existing roadways. With incorporation of drainage features and compliance with the soil erosion and sediment control practices identified in the SWPPP, for construction projects resulting in over one acre of disturbance, effects to water resources would be less than significant.			
Air Quality			
Development of the roadway improvements would result in short-term construction-related air pollution emissions. The construction phase would produce exhaust emissions from construction equipment and fugitive dust generated as a result of demolition and soil movement. Construction of improvements would be limited in scope and duration. Thus a less than significant indirect effect would result. In addition, mitigation measures are typically required by local jurisdictions to reduce construction emissions, often in conjunction with required CEQA review.	LTS	No mitigation is recommended.	LTS
Long-term effects from roadway improvements could result if the roadway improvements resulted in localized increases in carbon			

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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
<p>monoxide (CO) concentrations and/or if the improvements contributed to traffic congestion at large intersections. The construction of improvements would not result in adverse changes or redistribution in traffic volumes and vehicle trips. Conversely, it is expected that the improvements would reduce congestion and improve traffic flow, reducing emissions from idling vehicles. Long-term effects would therefore be less than significant.</p>			
Biological Resources			
<p>Construction of the roadway improvements would result in the loss of some existing vegetation and modification of drainage channels. Removal of sensitive native vegetation and vegetation that provides habitat for special-status species or supports migratory birds could result in potentially significant effects. The modification of intermittent drainages and the direct loss or harm to sensitive animal species are also considered potentially significant effects.</p>	LTS	No mitigation is recommended.	LTS
<p>Most of the habitat that exists in the areas of roadway improvements is highly disturbed roadsides. Due to the degraded condition of the roadside areas, habitat quality is generally low and it is unlikely that expansion of the existing facilities would result in a significant effect to sensitive species. In addition, there are no mapped wetlands in the areas of traffic improvements. Due to the limited nature of the improvements along existing roadways, the degraded condition of existing habitat, and the requirements of CEQA to address impacts to biological resources, the effects of the roadway improvements would be less than significant.</p>			
Cultural Resources			
<p>Grading roadsides to add traffic lanes or expanding intersections may disturb previously unknown sites. Due to prior grading of the existing roadways and occasional traffic on roadsides it is likely that resources remaining in these areas are highly disturbed and lack</p>	LTS	No mitigation is recommended.	LTS
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Alternative E = E			

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SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
<p>integrity, thus diminishing the significance of the remaining resources.</p> <p>To address potential impacts to cultural resources, cultural surveys may be required to comply with CEQA. The lead agency under CEQA would be required to mitigate potential impacts to a less than significant level or to issue a finding of fact and statement of overriding considerations if significant impacts could not be mitigated. Therefore, a less than significant indirect effect to cultural resources would result.</p> <p>Socioeconomic Conditions</p> <p>Construction of roadway improvements would result in short-term inconveniences and minor delays due to constricted traffic movements and possible temporary detouring of traffic. The intersection improvements are not expected to result in long-term disruption of access to surrounding land uses or to minority or low-income populations.</p> <p>The realignment and expansion of roadways would result in impacts to surrounding properties. In order to implement some improvements, land acquisition may be required. In most cases no additional property will be required (e.g. intersection signalization) or the amount of additional property required will be minimal. Should land acquisition be required, the owner of the property acquired is entitled to be compensated for the fair market value of the property, as required by the Fifth Amendment of the U.S. Constitution; Article I, Section 19 of the California Constitution; and Sections 1263.010 to 1263.330 of the California Code of Civil Procedure. A potentially significant impact would result should local jurisdictions be left to pay the full cost of such land acquisition.</p>	S	<ul style="list-style-type: none"> The Tribe would pay the fair-share cost of traffic mitigation, including the cost of any required land acquisition. 	LTS
Less than Significant = LTS	Significant = S	No Effect = NE	Beneficial Effect = BE
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SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE

ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
Resource Use Patterns			
Transportation - Traffic mitigation measures are meant to improve transportation facilities. Impacts to traffic operations would be temporary and necessary consequences of construction in order to facilitate long-term improvements. A less than significant effect would therefore result.	LTS	No mitigation is recommended.	LTS
Land Use - Construction of roadway improvements with no or minimal additional property requirements is not expected to cause a long-term disruption of surrounding land uses. Improvements that require land acquisition, could convert land from its current use. However, the amount of land required would be a narrow strip on the end of the property and should not affect the land use for the remaining property. Therefore, a less than significant indirect effect would result.			
Agriculture - Construction of roadway improvements that require additional property, such as realignment and expansion of roadways, could permanently convert land from agricultural use. However, the amount of land converted would be small compared with the amount of arable land in Madera County. Therefore, a less than significant indirect effect to agriculture would result.			
Public Services			
Traffic improvements may require relocation of utilities near existing roadways. However, because these effects are common when upgrading and maintaining utility services, and because potential service breaks would be temporary, these effects are considered to be less than significant. No significant effects to police, fire, or emergency medical services are expected as access to homes and businesses would be maintained during the construction period.	LTS	No mitigation is recommended.	LTS
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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
Other Values			
Construction activities would result in short-term increases in the local ambient noise environments. However, because construction activities would be temporary in nature and are expected to occur during normal daytime hours, a less than significant effect is expected.	LTS	No mitigation is recommended.	LTS
<p>The accidental release of hazardous materials used during grading and construction activities could pose a hazard to construction employees and the environment. Additionally, equipment used during grading and construction activities could ignite dry grasses and weeds in construction areas. However, these hazards, which are common to construction activities, would be minimized with adherence to standard operating procedures. Such procedures are commonly required by local agencies as part of the CEQA review for roadway improvements. These potential hazards are therefore considered to be less than significant.</p> <p>Visual effects would occur as the result of modification and expansion of existing roadways. However, because the intersections would conform to modern design standards and are expected to be landscaped to suit the settings, a less than significant effect would occur.</p>			
4.12.3 INDIRECT EFFECTS FROM OFF-SITE PIPELINE CONSTRUCTION			
Land Resources			
The construction of off-site pipelines would occur primarily along existing roadways and would require trenching and backfilling/re-paving in order to install the pipelines within the roadway.	LTS	No mitigation is recommended.	LTS

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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
<p>Therefore, effects to land resources would be similar to those discussed above under off-site roadway improvements, except the effects would be somewhat lessened. Disturbances would occur largely within currently disturbed roadways. A less than significant indirect effect to land resources would result.</p>			
Water Resources			
Effects to water resources would be similar to those discussed under off-site roadway improvements, except the effects would be lessened. Disturbances would occur largely within currently disturbed roadways. New impervious surfaces and therefore additional pollutant runoff would not occur. Thus, a less than significant indirect effect to water resources would result.	LTS	No mitigation is recommended.	LTS
Air Quality			
Installation of water and wastewater pipelines would result in short-term construction-related air pollution emissions. The construction phase would produce two types of air contaminants: exhaust emissions from construction equipment and fugitive dust generated as a result of demolition and soil movement. Construction of improvements would be limited in scope and duration. Thus a less than significant indirect effect would result. In addition, mitigation measures are typically required by local jurisdictions to reduce construction emissions, often in conjunction with CEQA review.	LTS	No mitigation is recommended.	LTS
Biological Resources			
Most of the habitat that exists in the areas of the pipeline alignment is highly disturbed roadsides or totally disturbed roadways. Due to the degraded condition of the roadway/roadside areas, habitat quality is generally low and it is unlikely that extending the existing pipeline facilities would result in a significant effect to sensitive species. The pipelines would not occur on mapped wetland areas	LTS	No mitigation is recommended.	LTS

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<p>except for stream crossings, which would potentially require California Department of Fish and Game (CDFG) Section 1600 permit and a USACE Section 404 permits. Due to the limited nature of the pipeline alignment along existing roadways, the degraded condition of existing habitat, and the requirements of CEQA, the CDFG, and the USACE to address impacts to biological resources, the effects of extending existing pipelines would be less than significant.</p> <p>Cultural Resources</p> <p>Grading roadways/roadsides and trenching to add pipeline may disturb previously unknown sites. Due to prior grading of the existing roadways and occasional traffic on roadsides, it is likely that resources remaining in these areas are highly disturbed and lack integrity, thus diminishing the significance of the remaining resources.</p> <p>To address potential impacts to cultural resources, cultural surveys may be required to comply with CEQA. The lead agency under CEQA would be required to mitigate potential impacts to a less than significant level or to issue a finding of fact and statement of overriding considerations if significant impacts could not be mitigated. Therefore, a less than significant indirect effect to cultural resources would result.</p> <p>Socioeconomic Conditions</p> <p>Effects to socioeconomic conditions from construction of pipelines would be very similar to the effects noted above to construction of roadway improvements. These effects are primarily limited to temporary inconvenience due to construction and would not result in a significant indirect effect.</p>	LTS	No mitigation is recommended.	LTS
	LTS	No mitigation is recommended.	LTS

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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
Resource Use Patterns			
Transportation – Construction of the pipelines could occur along roadways, impacting traffic flow. However, since the construction and traffic effects would be temporary, a less than significant effect to transportation would result.	LTS	No mitigation is recommended.	LTS
Land Use - Construction of the pipelines would require utility easements, which would limit future construction. Underground utility easements typically prohibit the construction of building improvements, but may permit the construction of non-structural improvements, such as paved surface parking or landscaping. The pipelines would be constructed to follow public roads and would not be in an area where a building would normally be built or where an agricultural field would be plowed. Therefore, less than significant indirect impacts to land uses would occur.			
Agriculture – Agricultural fields usually include a buffer between the crops and public throughways. The pipelines are not expected to extend past this buffer area, and would therefore not affect agricultural practices. Therefore, no significant indirect impact to agriculture would occur.			
Public Services			
As with traffic improvements, the extension of water and wastewater lines could result in a temporary break in public services to some homes and businesses in the area. However, because these effects are common when upgrading and maintaining utility services, and because potential service breaks would be temporary, these effects are considered to be less than significant. Access to homes and businesses would be maintained	LTS	No mitigation is recommended	LTS

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ENVIRONMENTAL EFFECT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
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during the construction period.

Other Values

Construction of the proposed water and wastewater lines could potentially result in noise and hazardous materials effects. However, because construction activities would be temporary in nature and are expected to occur during normal daytime hours, a less than significant effect would occur.

LTS

No mitigation is recommended.

LTS

The accidental release of hazardous materials used during construction activities could pose a hazard to construction employees and the environment. Additionally, equipment used during construction activities could ignite dry grasses and weeds in construction areas. However, these hazards, which are common to construction activities, would be minimized with adherence to standard operating procedures, such as refueling in designated areas, storing hazardous materials in approved containers, and clearing dried vegetation. These potential hazards are therefore considered to be less than significant.

Because the proposed water and wastewater lines would be constructed below ground, visual indirect effects would be less than significant.

SECTION 1.0

PURPOSE AND NEED

SECTION 1.0

PURPOSE AND NEED

1.1 INTRODUCTION

This Environmental Impact Statement (EIS) has been prepared by the Department of the Interior, Bureau of Indian Affairs (BIA) to address the potential environmental effects of a proposed 305-acre fee-to-trust land acquisition in unincorporated Madera County, California for the North Fork Rancheria of Mono Indians (Tribe). The BIA is the federal agency that is charged with reviewing and approving Tribal applications pursuant to 25 CFR Part 151 to take land into federal trust status. The proposed action includes a trust acquisition for gaming purposes and the approval by the National Indian Gaming Commission (NIGC) of a gaming management contract between SC Madera Management LLC and the Tribe. The NIGC is the Federal agency that is charged with regulating gaming on Native American lands as mandated by the Indian Gaming Regulatory Act (IGRA), 25 U.S.C. § 2701 et seq. As part of its regulatory authority under IGRA, the NIGC reviews and approves all management contracts between tribal governments and outside management companies. The foreseeable consequence of these actions will be the development of a hotel and casino complex with associated support facilities on the subject property. The purpose of the proposed action is to help provide for the economic development of the Tribe and other benefits for the Tribe discussed in detail in **Section 1.4** below.

For the purpose of this EIS, the BIA serves as the Lead Agency for compliance with the National Environmental Policy Act (NEPA) (42 U.S.C. § 4321 et seq.), with the Tribe, the NIGC, the California Department of Transportation (Caltrans), the Madera Irrigation District (MID), the U.S. Environmental Protection Agency (USEPA), and the City of Madera serving as Cooperating Agencies. **Appendix A** contains correspondence from the BIA seeking the participation of various federal and non-federal agencies as Cooperating Agencies under NEPA. **Appendix A** also contains correspondence from those agencies agreeing to serve as Cooperating Agencies.

This document has been completed in accordance with the requirements set forth in NEPA (42 U.S.C. 4321 et seq.); the President's Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 C.F.R. Parts 1500-1508); and the BIA NEPA Handbook (59 IAM 3-H). This EIS provides a detailed description of the proposed action and alternatives to the proposed action, including the No Action Alternative. NEPA requires that the BIA review and analyze the potential environmental consequences associated with the proposed action and alternatives. This document also includes a discussion of effect avoidance and mitigation measures.

1.2 ALTERNATIVE SITE LOCATIONS

1.2.1 MADERA SITE

The Madera site is located in southwest Madera County, just north of the City of Madera and adjacent to State Route 99 (SR-99). The site is bounded on the north by Avenue 18, rural residential land, light industrial land, and vacant land; on the east by Golden State Boulevard and SR-99; on the south by agricultural and residential land; and on the west by Road 23 and agricultural land (**Figure 1-1**). Regional access to the Madera site is via SR-99. Road 23, Avenue 18, and Golden State Boulevard would provide direct access to the Madera site. **Figure 1-2** shows the vicinity of the Madera site. **Figure 1-3** shows an aerial photo of the Madera site. The Madera site currently consists of seven parcels, totaling approximately 305 acres (**Table 1-1**; **Figure 1-4**).

TABLE 1-1
MADERA SITE PARCELS

Number	Assessor's Parcel Number (APN)	Approximate Size (acres)
1	033-030-010-000	36.01
2	033-030-011-000	40.66
3	033-030-012-000	38.26
4	033-030-013-000	42.23
5	033-030-014-000	38.92
6	033-030-015-000	56.44
7	033-030-017-000	52.97
Total		305.49

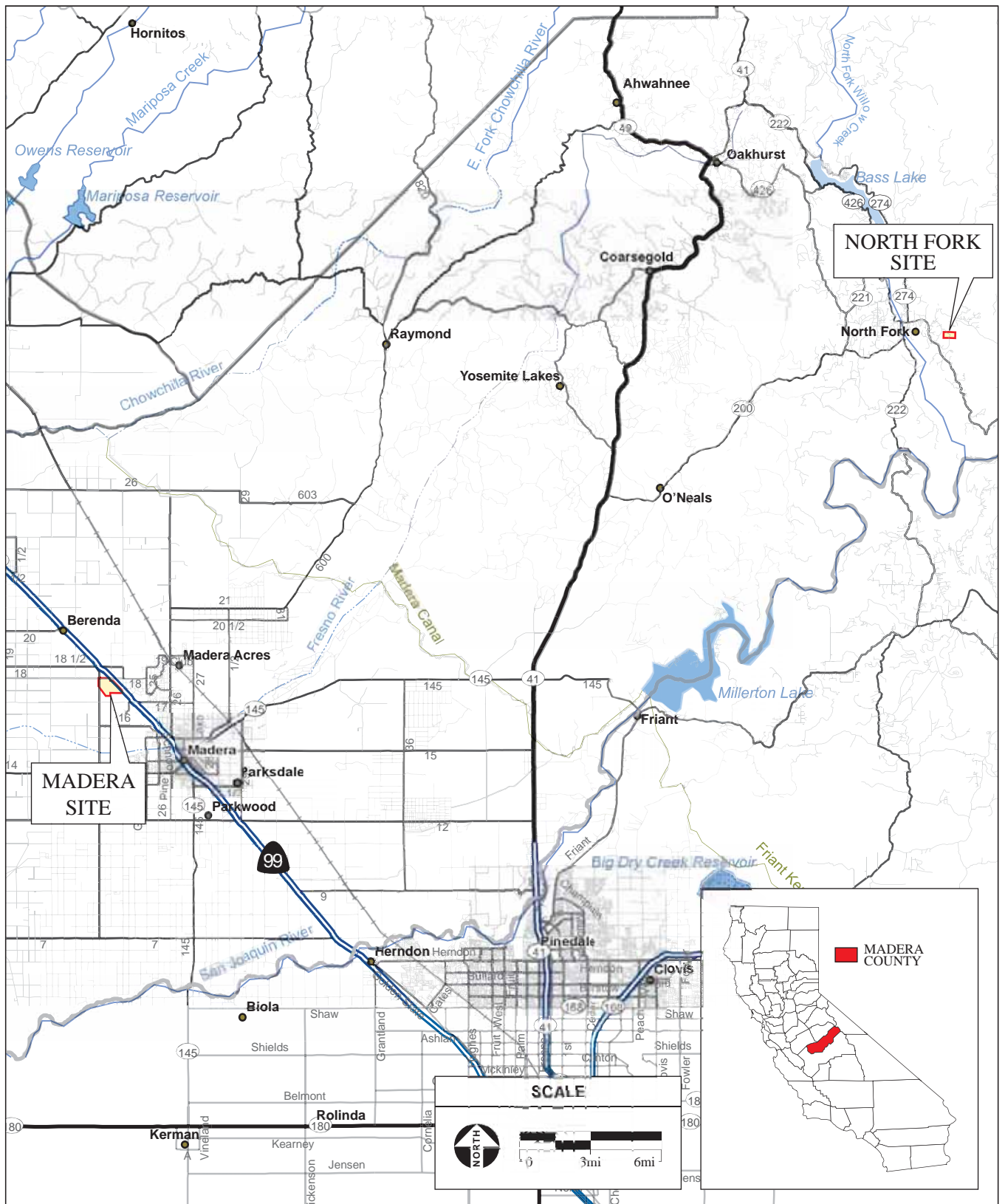
SOURCE: Analytical Environmental Services, 2005.

1.2.2 NORTH FORK SITE

The 80-acre North Fork site is located east of the Madera site, approximately three miles east of the community of North Fork, east of Mammoth Pool Road, and 0.5 miles southwest of Hill 3954 (1.5 miles southwest of Cascadel), in portions of sections 17, 20, and 21 in Township 8 South, Range 23 East, Mount Diablo Base Line and Meridian, Madera County, California (see **Figure 1-1**). The North Fork site is situated at an elevation of 2800 to 3400 feet. The North Fork site is currently held in trust by the Federal Government. Thus, the North Fork site is not divided into parcels for local taxation purposes. **Figure 1-5** shows the vicinity of the North Fork site. **Figure 1-6** shows an aerial photo of the North Fork site.

1.3 SUMMARY OF THE PROPOSED ACTION AND ALTERNATIVES

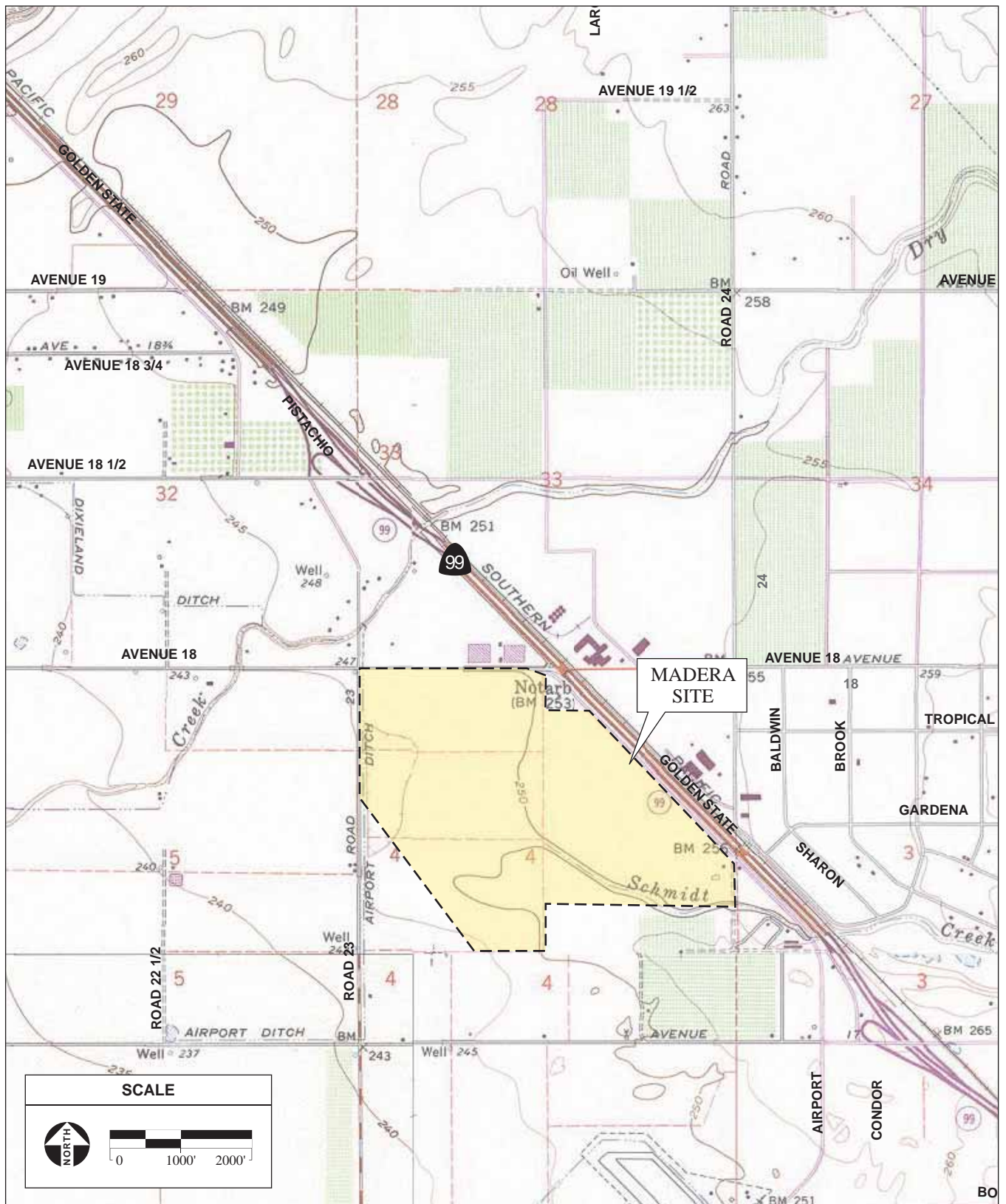
The proposed action analyzed in this EIS is the fee-to-trust acquisition and subsequent approval of a gaming management contract by the NIGC. The foreseeable consequence of this action will



SOURCE: ESRI Data, 2005; AES, 2006

North Fork Casino EIS / 204502 ■

Figure 1-1
Regional Location Map



SOURCE: "Berenda, CA" & "Kismet, CA" USGS 7.5 Minute Topographic Quadrangles, Sections 32 & 33, T10S, R17E and Section 4, T11S, R17E, Mt. Diablo Baseline and Meridian; AES, 2006

North Fork Casino EIS / 204502 ■

Figure 1-2
Madera Site – Site and Vicinity Map

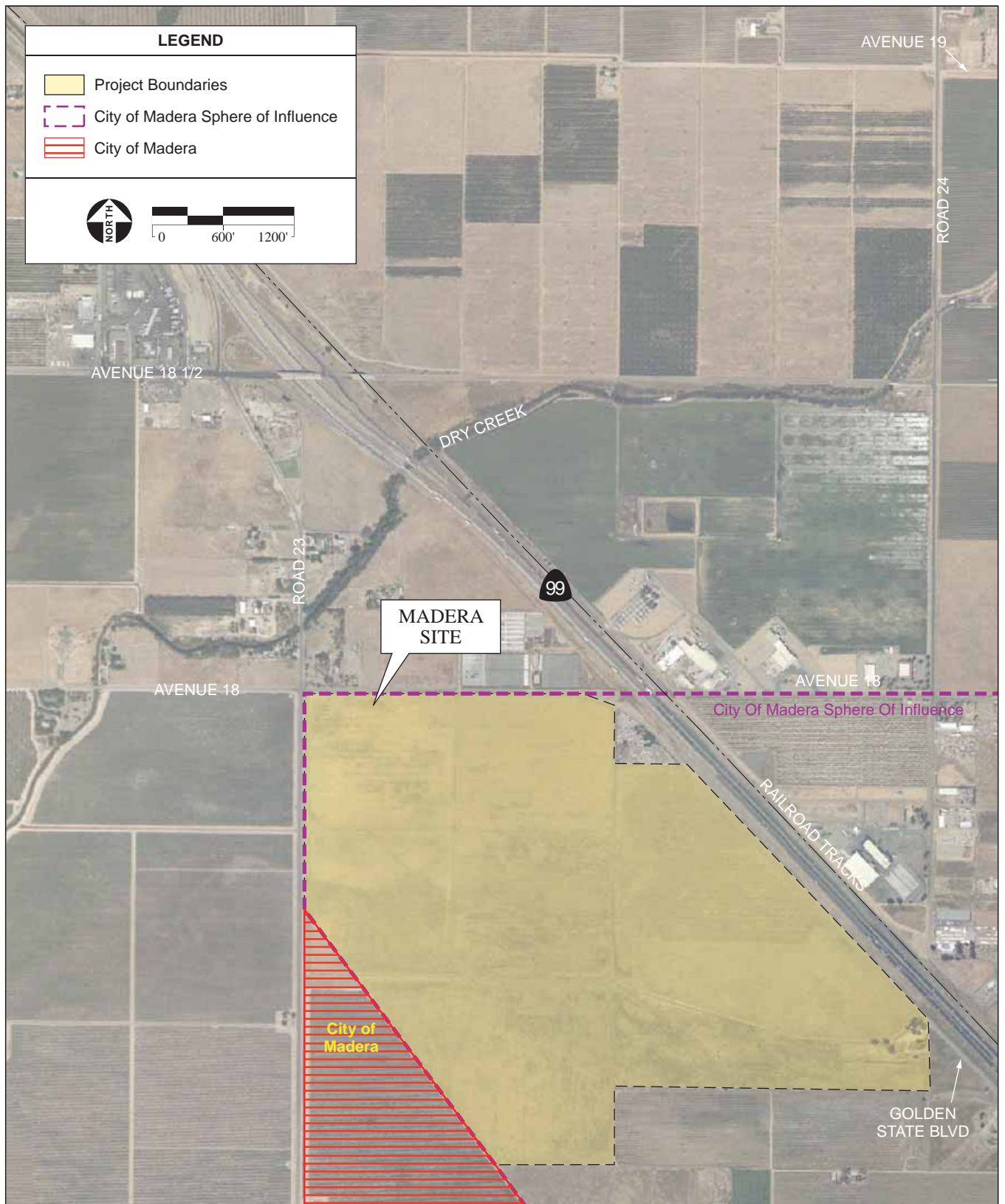


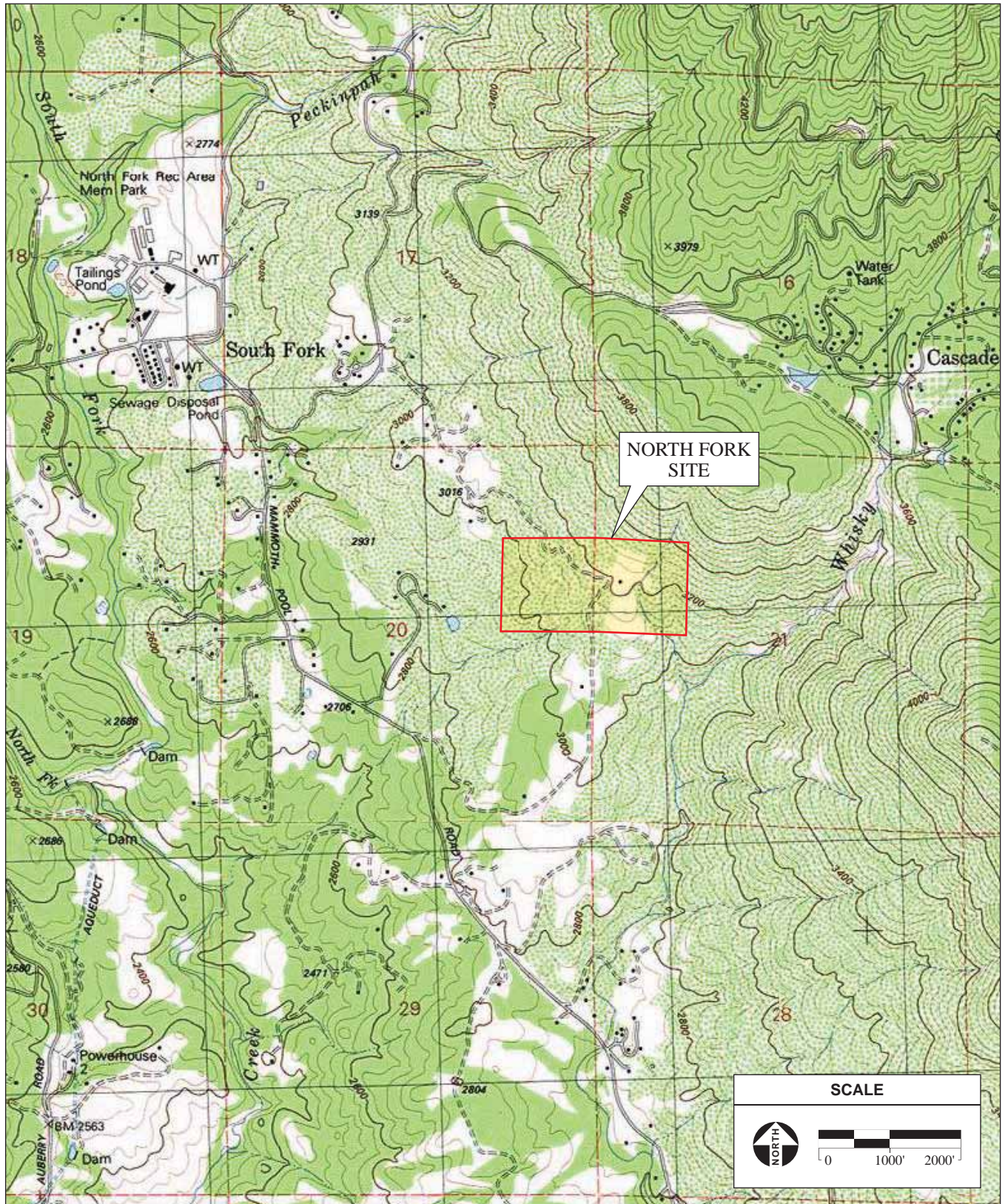
Figure 1-3
Madera Site – Aerial Site Map



SOURCE: First American Title, 2005; AES, 2006

North Fork Casino EIS / 204502 ■

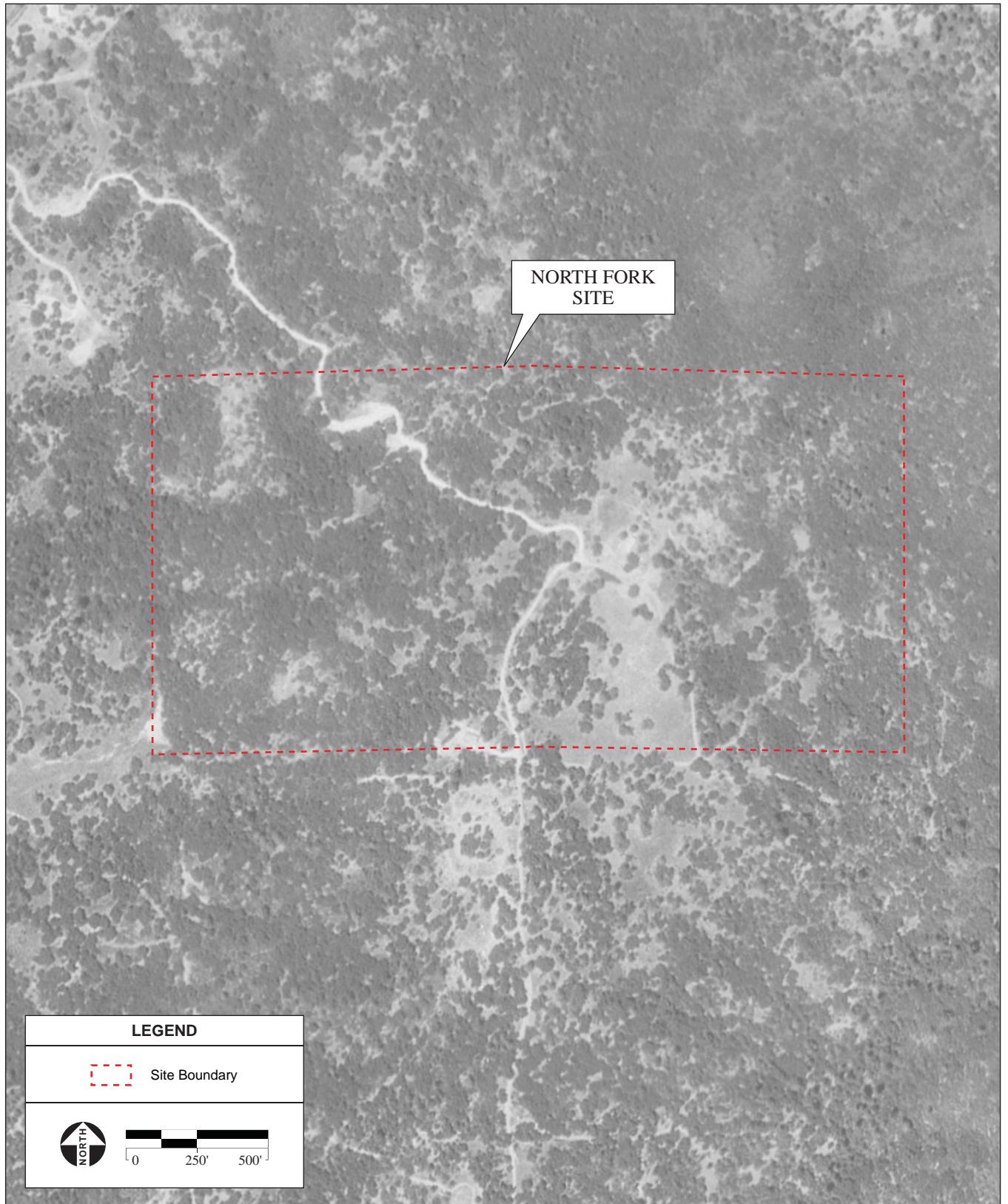
Figure 1-4
Madera Site – Parcel Map



SOURCE: "Cascadel, CA" USGS 7.5 Minute Topographic Quadrangle, Sections 20 & 21, T8S, R23E Mt. Diablo Baseline and Meridian; AES, 2006

North Fork Casino EIS / 204502 ■

Figure 1-5
North Fork Site – Site and Vicinity Map



SOURCE: USGS Aerial Photograph, 7/16/1993; AES, 2006

North Fork Casino EIS / 204502 ■

Figure 1-6
North Fork Site – Aerial Site Map

be the development of one of the four development alternatives analyzed in this EIS. The alternatives addressed in this study, including the No-Action Alternative, are listed below and further described in the following section.

1. Alternative A – Proposed Project;
2. Alternative B – Reduced Intensity;
3. Alternative C – Non-Gaming Use;
4. Alternative D – North Fork Location; and
5. Alternative E – No-Action.

Alternative A consists of the development of a casino and hotel resort on the eastern side of the Madera site adjacent to SR-99. The casino and hotel resort would include a main gaming hall, food and beverage services, retail space, banquet/meeting space, and administrative space. Food and beverage facilities are planned, including a buffet, three restaurants, a food court and several bars/lounges. The resort would also include a multi-story hotel with 200 rooms, a pool area, and spa. Ancillary support facilities would include a central plant (utilities/operations control and storage building) and potentially a wastewater treatment plant. Approximately 4,500 parking spaces would be provided for the casino and hotel resort. The remainder of the Madera site would remain undeveloped and would be used for passive recreation, pastureland, biological habitat, and/or recycled water spray fields.

Alternative B constitutes the development of a smaller-scale “reduced intensity” casino resort in the same general area as Alternative A, but with a smaller footprint, less total square footage, and no hotel. The components of the casino complex proposed for Alternative B would be similar to those proposed for Alternative A, but smaller and without a hotel. Alternative C is a non-gaming alternative, proposed as a mixed-use retail development (with no hotel). This development would include several large retail outlet stores and small storefronts, including food and beverage establishments. Alternative D consists of a reduced intensity casino at the North Fork site in Madera County near North Fork, California, approximately 30 miles south of Yosemite National Park and 40 miles northeast of Fresno, California. Alternative E is the No Action Alternative, which would involve no new construction. The Madera site and North Fork site s would remain vacant, undeveloped agricultural land, with no fee-to-trust acquisition or subsequent management contract.

1.4 PURPOSE AND NEED

Implementation of the proposed action would assist the Tribe in meeting the following objectives:

- Improve the socioeconomic status of the Tribe by providing an augmented revenue source that could be used to strengthen the Tribal Government, fund a variety of social,

- housing, governmental, administrative, educational, health and welfare services to improve the quality of life of Tribal members, and provide capital for other economic development and investment opportunities.
- Provide employment opportunities to the Tribal community.
 - Make donations to charitable organizations and governmental operations, including local educational institutions.
 - Fund local governmental agencies, programs, and services.
 - Allow the Tribe to establish economic self-sufficiency.

A lack of economic development opportunities exists for the Tribe primarily due to a lack of funds for project development and operation. The Tribe has no sustained revenue stream that could be used to fund programs and provide assistance to Tribal members. Among the Tribe's membership there is a high unemployment rate, a high poverty rate, and a high reliance upon the Federal and State governments for social services.

Providing a solid economic base for tribes represents one of the primary purposes behind IGRA. IGRA states that Congress finds "a principal goal of Federal Indian policy is to promote tribal economic development, tribal self sufficiency, and strong tribal government..." 25 U.S.C. § 2701. IGRA also states that one of the purposes of the act is "to provide a statutory basis for the operation of gaming by Indian tribes as a means of promoting tribal economic development, self-sufficiency, and strong tribal governments..." 25 U.S.C. § 2702.

To ensure that revenues raised from gaming are used to "promote tribal economic development, tribal self sufficiency, and strong tribal government," IGRA (25 U.S.C. § 2710(b)(2)(A)) limits the use of net gaming revenues to the following:

- Funding tribal government operations or programs.
- Providing for the general welfare of the Indian tribe and its members.
- Promoting tribal economic development.
- Making donations to charitable organizations.
- Funding operations of local government agencies.

The proposed action would allow the Tribe to take advantage of the financial opportunities provided by Congress through IGRA, providing the Tribe with a long-term, viable, and sustainable revenue base. Revenues from the operation of the casino and hotel would be used for at least the following purposes:

- Funding governmental programs and services, including housing, educational, environmental, health, and safety programs and services.

- Hiring additional staff, upgrading equipment and facilities, and generally improving governmental operations.
- Decreasing the Tribe's and Tribal members' dependence on Federal and State grants and assistance programs.
- Making donations to charitable organizations and governmental operations, including local educational institutions.
- Funding local governmental agencies, programs, and services.
- Providing capital for other economic development and investment opportunities, allowing the Tribe to diversify its holdings over time, so that it is no longer dependent upon the Federal or State government or even upon gaming to survive and prosper.

Each of these purposes is consistent with the limited allowable uses for gaming revenues, as required by IGRA. The hotel, casino, and related facilities would also provide employment opportunities for Tribal members as well as local non-Tribal residents. Operation of the hotel, casino, and related facilities would require the purchase of goods and services, increasing opportunities for local businesses and stimulating the local economy.

The Tribal Government's purpose for requesting the approval of the proposed management contract is to team with SC Madera Management LLC to develop and manage a casino and hotel resort. The Tribal government needs a developer/manager because the Tribe alone cannot secure the necessary financing to develop this project and lacks the necessary expertise to manage a casino and hotel resort.

1.5 OVERVIEW OF THE ENVIRONMENTAL REVIEW PROCESS

NEPA generally requires that an EIS be prepared for major Federal actions that may significantly affect the quality of the human environment (42 U.S.C. § 4332). This document has been completed in accordance with the requirements set forth in NEPA (42 U.S.C. § 4321 et seq.); the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA (40 C.F.R. Parts 1500-1508); and the BIA NEPA Handbook (59 IAM 3-H).

This EIS has been prepared to analyze and document the environmental consequences associated with the approval of the fee-to-trust acquisition and resulting development of a casino and hotel resort. Additionally, the EIS analyzes a reasonable range of alternatives including four development alternatives and a no action alternative.

The first formal step in the preparation of an EIS is publication of a Notice of Intent (NOI) to prepare an EIS. The purpose of a NOI is to inform the public that the lead agency intends to prepare and consider an EIS for a proposed action. The NOI also includes a description of the proposed action and possible alternatives, a description of the proposed scoping process including

whether, when, and where any scoping meeting will be held, and the name and address of the lead agency contact for the public (40 C.F.R. § 1508.22).

The CEQ regulations for implementing NEPA require a process, referred to as “scoping” for determining the range of issues to be addressed during the environmental review of a proposed action (40 C.F.R. § 1501.7). The scoping process entails a determination of issues by soliciting comments from agencies, organizations and individuals.

The BIA published the NOI for this proposed action in the *Federal Register* on October 27, 2004 with the public scoping comment period beginning on October 27, 2004 and ending on November 26, 2004 (**Appendix B**). The NOI was published in the Madera Tribune on November 12, 2004.

The October 27, 2004 NOI served to announce the public scoping meeting, which was held by the BIA on November 15, 2004 at Hatfield Hall, Madera District Fairgrounds, Madera, California. The scoping meeting was conducted by the following representatives of the BIA: Patrick O’Mallan, Environmental Protection Specialist, and John Rydzik, Chief of the Division of Environmental, Cultural, Resource Management and Safety for the Pacific Region. The scoping meeting provided a forum for the public to personally address the members of the BIA regarding the scope of the EIS.

In response to a request, the BIA extended the public scoping comment period to December 15, 2004. Notices extending the comment period were published in the Madera Tribune and Fresno Bee on November 29, 2004 and December 7, 2004. The Madera Tribune notice incorrectly listed the extended comment deadline as December 10, 2004. Thus, a correction was published in the Madera Tribune on December 3, 2004.

The BIA then published a Notice of Correction (NOC) in the *Federal Register* on April 6, 2005. The NOC amended the October 2004 NOI to include a description of possible project alternatives and also to further extend the scoping comment period to May 6, 2005. The BIA published the NOC in the Madera Tribune on April 8, 2005 and in the Fresno Bee on April 9, 2005 (**Appendix B**). In July 2005, the BIA published a Scoping Report which summarized the comments received during the scoping period and outlined the expected scope of the EIS (AES, 2005). To the extent required by NEPA, this EIS has incorporated the issues and concerns summarized within the Scoping Report.

The Draft EIS was distributed to federal, tribal, state, and local agencies and other interested parties for a 45-day review and comment period. The CEQ Regulations (40 C.F.R. §1506.10(c)) require that agencies provide at least 45 days for comments on a Draft EIS, subject to the provisions of 40. C.F.R § 1506.10(d). The review and comment period began on February 15,

2008 after the Notice of Filing with the USEPA in the *Federal Register*. The Notice of Availability (NOA) published by the BIA on February 15, 2008, provided the time and location of the public hearing on March 12, 2008 to present the proposed project with alternatives to the public, and accept comments. Public notice was also published in *The Fresno Bee* and the *Madera Tribune* on February 15, 2008 (**Appendix B**).

The BIA received a total of 331 comment letters and public hearing statements. **Appendix Y** of the Final EIS includes a list of all comment letters received and statements made at the public hearing. 40 C.F.R. § 1503.4 requires that, “All substantive comments, or summaries thereof where the response has been exceptionally voluminous, should be attached to the final statement whether or not the comment is thought to merit individual discussion from the agency in the text of the statement.” Therefore, all substantive comments or representations thereof, where identical comments have been submitted by multiple parties, have been included in the Final EIS (**Appendix Y**).

Responses have been provided for each substantive comment submitted during the public comment period of the Draft EIS. These responses are provided within the Response to Comments document included within **Appendix Y** and are reflected in appropriate modifications made throughout the text of the Final EIS where necessary and appropriate. Comments received during the scoping period and/or in response to review of the preliminary document have already been considered and addressed through modifications reflected in the Draft EIS released in February 2008.

The BIA will publish this Final EIS and will file it with the USEPA. The USEPA will then publish a NOA for the Final EIS in the *Federal Register* marking the beginning of the 30-day review period that the BIA, upon conclusion of which, may decide on the Proposed Action.

At the time the BIA makes its decision, they will prepare a concise public Record of Decision (ROD), which states: what the decision is, identifies all the alternatives considered in reaching the decision, and discusses preferences among alternatives based on relevant factors including economic and technical considerations and the BIA’s statutory mission (40 C.F.R § 1505.2). The ROD also identifies and discusses all factors that were considered in making the decision and discusses whether all practicable mitigation measures have been adopted to minimize environmental effects. If all practicable measures are not adopted, the BIA must state why such measures were not adopted. The CEQ requires that, “Mitigation and other conditions established in the environmental impact statement or during its review and committed as part of the decision shall be implemented by the lead agency or other appropriate consenting agency” (40 C.F.R. § 1505.3). Specific details of adopted mitigation measures shall be included as appropriate conditions in the ROD by the lead agency.

1.6 REGULATORY REQUIREMENTS, PERMITS, AND APPROVALS

It is anticipated that implementation of the Proposed Action would require Tribal, Federal, and State permits and approvals. **Table 1-2** identifies each responsible agency and the potential permit or approval expected to be required.

TABLE 1-2
POTENTIAL PERMITS AND APPROVALS REQUIRED

Agency	Permit or Approval	Alternative	Applicant
North Fork Rancheria of Mono Indians	Compliance with Tribal/State Compact	A, B, D	N/A
National Indian Gaming Commission (NIGC)	Approval of Tribal gaming ordinances	A, B, D	North Fork Rancheria of Mono Indians
National Indian Gaming Commission (NIGC)	Approval of management contract	A, B, D	North Fork Rancheria of Mono Indians
National Indian Gaming Commission (NIGC)	Indian lands determination	A, B	North Fork Rancheria of Mono Indians
Secretary of the Interior	Fee-to-trust transfer	A, B, C	North Fork Rancheria of Mono Indians
Secretary of the Interior	Fee-to-trust transfer or lease agreement	D	North Fork Rancheria of Mono Indians
U.S. Environmental Protection Agency (USEPA)	Issuance of National Pollutant Discharge Elimination System (NPDES) General Permit for stormwater discharges from construction activities as required by the Clean Water Act	A, B, C, D	North Fork Rancheria of Mono Indians
U.S. Environmental Protection Agency (USEPA)	Issuance of NPDES Permit for wastewater discharges	A, B, C, D	North Fork Rancheria of Mono Indians
U.S. Environmental Protection Agency (USEPA)	Water quality certification (or waiver) as required by the Clean Water Act	A, B, C, D	North Fork Rancheria of Mono Indians
U.S. Army Corps of Engineers (USACE)	Approval of permit(s) for the filling of jurisdictional wetlands/waters as required by the Clean Water Act	A, B, C, D	North Fork Rancheria of Mono Indians
U.S. Fish and Wildlife Service (USFWS)	Section 7 Consultation under the Federal Endangered Species Act if endangered species may be affected	A, B, C, D	Bureau of Indian Affairs (BIA)
California State Historic Preservation Office (SHPO)	Consultation under Section 106 of the National Historic Preservation Act (NHPA)	A, B, C, D	Bureau of Indian Affairs (BIA)

SOURCE: Analytical Environmental Services, 2008.

SECTION 2.0

ALTERNATIVES

SECTION 2.0

ALTERNATIVES

2.1 INTRODUCTION

This section describes the alternatives analyzed within this Environmental Impact Statement (EIS). These alternatives include four development alternatives and the no action alternative. Consistent with Council on Environmental Quality (CEQ) National Environmental Policy Act (NEPA) Regulations (40 C.F.R. § 1502.14), this section includes a detailed discussion and comparison of the alternatives analyzed in this EIS. A reasonable range of alternatives has been selected based on consideration of the purpose and need, the recommendations of commenters during the scoping process, and opportunities for potentially reducing environmental effects. Additionally, this section discusses those alternatives that have been eliminated from further consideration.

2.2 ALTERNATIVE A – PROPOSED PROJECT

The proposed action analyzed in this EIS is the fee-to-trust acquisition by the Department of Interior, Bureau of Indian Affairs (BIA) and subsequent approval of a gaming management contract by the National Indian Gaming Commission (NIGC).

The Tribe has submitted a fee-to-trust application asking that the Madera site be taken into trust by the BIA for the purpose of gaming consistent with the Indian Gaming Regulatory Act (IGRA). IGRA prohibits gaming on lands that the Secretary of the Interior acquires in trust for an Indian tribe after October 17, 1988, unless the land qualifies under at least one of the exceptions contained under 25 U.S.C. § 2719. If none of the exceptions in § 2719 applies, § 2719(b)(1)(A) of IGRA provides that gaming can still occur on the lands under the Secretarial two-part determination provision. Under the two-part determination process, the Secretary of the Interior may permit gaming to occur if the Secretary determines that gaming on the trust lands is 1) in the best interest of the Indian tribe and its members, and 2) not detrimental to the surrounding community. The State Governor must concur with the Secretary's determination. The Tribe's fee-to-trust application indicates that they will seek the ability to conduct gaming on the Madera site through the IGRA two-part determination process, although they have reserved the right to apply for the IGRA restored lands exception should the two-part determination be unsuccessful. In either case, the Tribe's proposed project, as described below, would remain the same.

The foreseeable consequence of the proposed action would be the development of a casino and hotel resort (proposed project) on approximately 305 acres of land that would be taken into trust for the Tribe (Madera site). The location of the Madera site is described in detail in **Section 1.2**. Alternative A is considered the proposed project and constitutes the development of a casino and hotel resort on the eastern side of the Madera site adjacent to State Route 99 (SR-99).

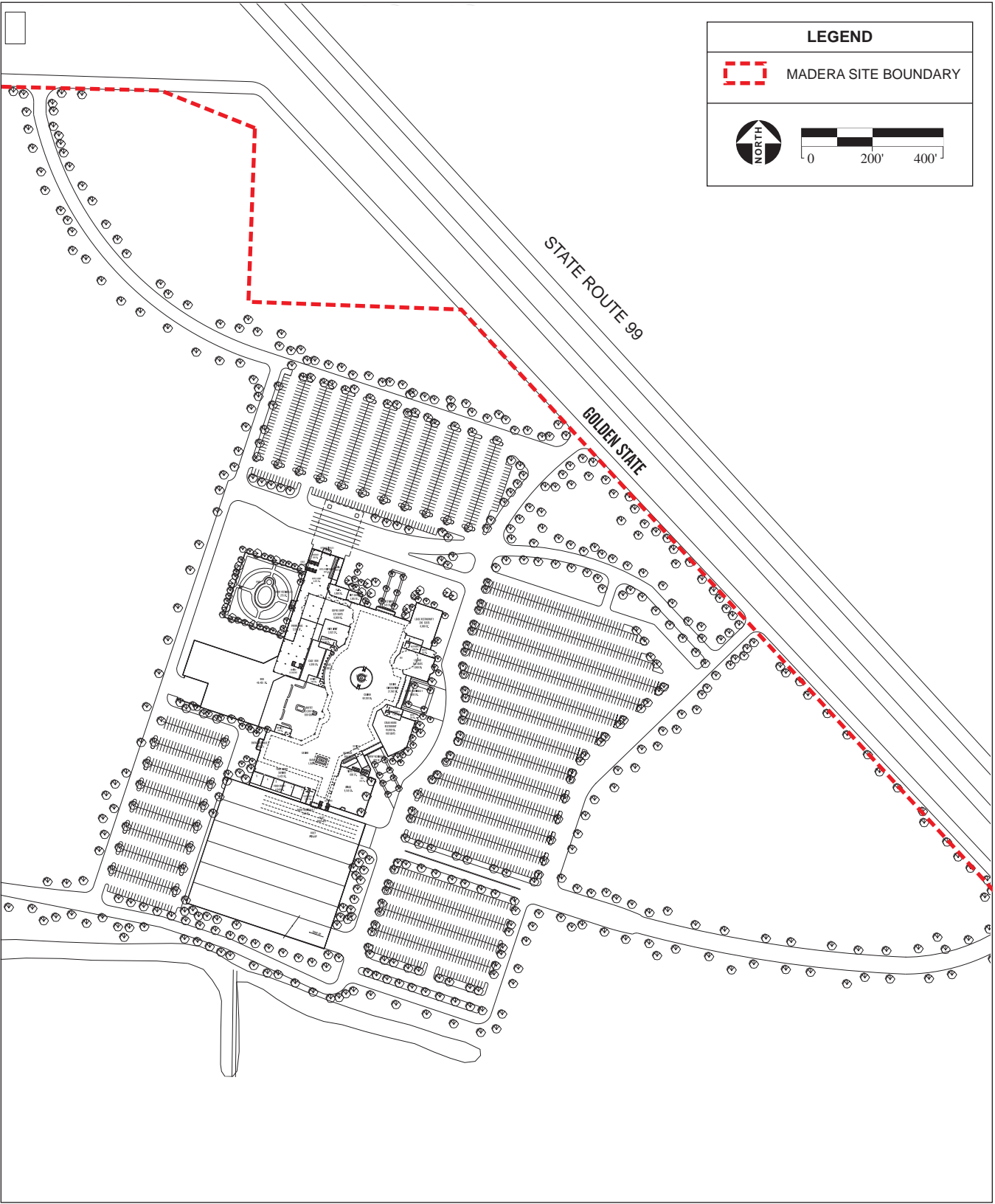
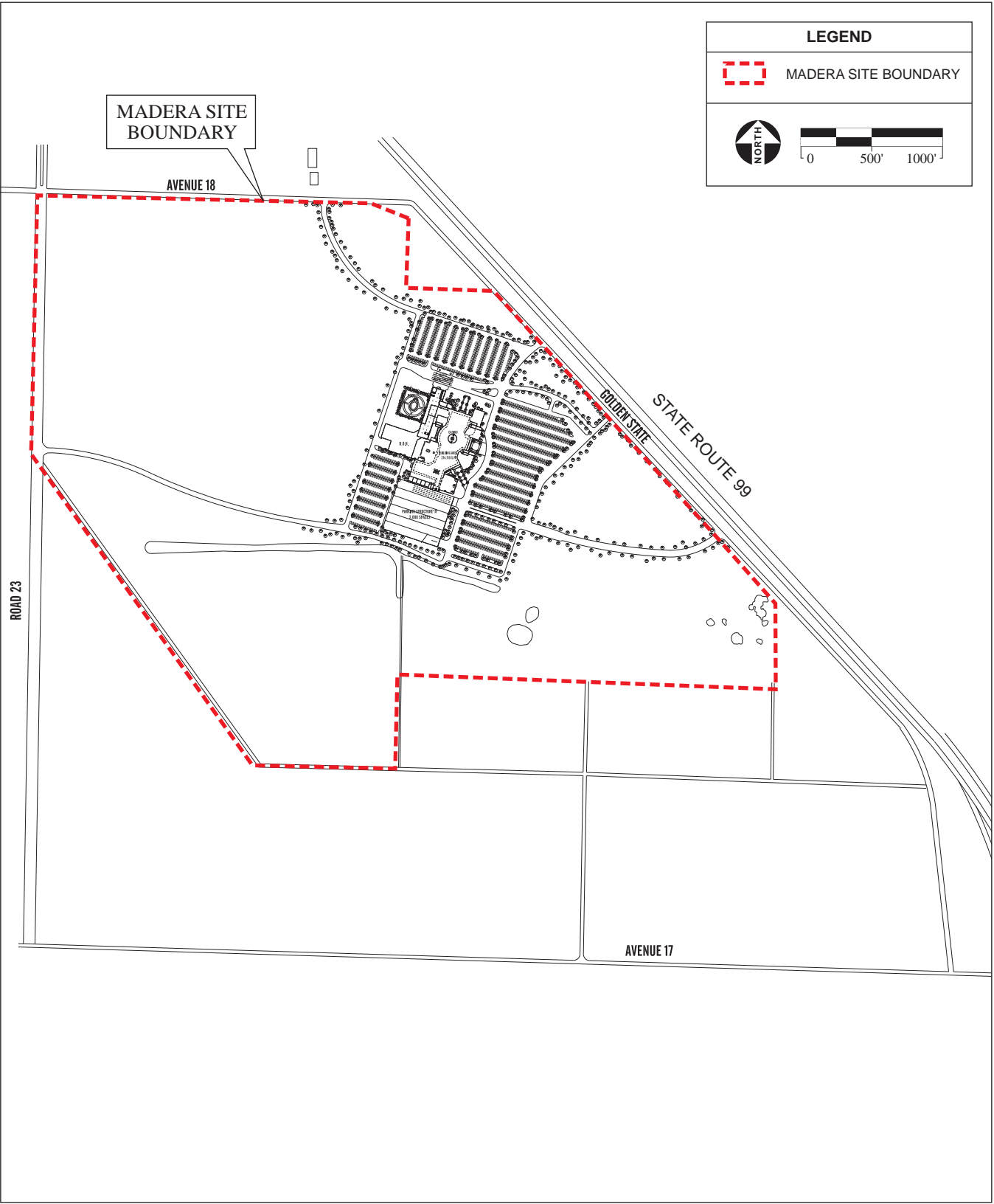
The casino and hotel resort would include a main gaming hall, food and beverage services, retail space, banquet/meeting space, administrative space, pool, and spa. Fifteen food and beverage facilities are planned, including a buffet, six bars, three restaurants, and a five-tenant food court. The resort would include a multi-story hotel with 200 rooms, a pool area, and a spa. Approximately 4,500 parking spaces would be provided for the casino/hotel resort, with 2,000 of those spaces within a multi-level parking structure.

Table 2-1 shows the breakdown of proposed uses with associated square footages for the proposed casino and hotel development. **Figure 2-1** shows the site plan for the proposed casino and hotel resort, including supporting facilities. As shown, the proposed casino and hotel resort would be developed in the east-central portion of the Madera site. The remainder of the Madera site would remain undeveloped and would be used for passive recreation, pastureland, biological habitat, and/or recycled water spray fields. An architectural rendering of the conceptual building elevation is presented in **Figure 2-2**. Approximately 1,291 full-time employees and 283 part-time employees (or 1,461 full-time equivalents) are expected under Alternative A. The opening date for the proposed casino/hotel resort is anticipated to be 2010.

The design of the proposed casino and hotel would incorporate built-in fire protection features including firebreaks and Type I non-combustible, fire-resistant construction. Facilities would be equipped with a hydraulically calculated automatic sprinkler system designed to comply with the California Building Code, and include an automatic fire detection and alarm system. These features would serve to automatically detect fires and notify emergency services, reducing the occurrence of a catastrophic event. Vegetation in and around the developed areas would be irrigated and landscaped for aesthetic and fire protection values.

2.2.1 MANAGEMENT CONTRACT

Congress enacted the Indian Gaming Regulatory Act (IGRA) of 1988 with the stated purpose of providing a statutory basis for the operation and regulation of gaming by tribal governments. As part of its regulatory function, the National Indian Gaming Commission (NIGC), which was established under IGRA, is charged with the authority to approve management contracts between tribal governments and outside management groups. In order to approve a contract, the NIGC must determine that the contract will not violate the law and that the contract meets certain requirements relating to the term of the agreement, the total amount of payments made to the management company, and protection of tribal authority. The NIGC also conducts extensive background checks of the management company's key personnel.



SOURCE: Friedmutter Group, 2005; AES, 2006

Figure 2-1
Alternative A – Site Plan



SOURCE: Friedmutter Group, 2005; AES, 2006

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Figure 2-2
Alternative A – Architectural Rendition

TABLE 2-1
ALTERNATIVE A – PROPOSED PROJECT COMPONENTS

Area	Seats/Rooms/Parking Spaces	Square Footage
CASINO & ENTERTAINMENT		
Casino		
Casino Gaming		68,150
Casino Circulation		21,760
High Limit Gaming		3,925
Bingo		10,990
Entry Vestibules (7 total)		3,945
Restrooms (4 total)		6,085
Rewards Center		990
Cage		5,785
Back of House		50,000
Retail		1,185
Food and Beverage		
Buffet	500	23,500
Bars (2 total)		4,050
Service Bars (3 total)		2,650
Lease Restaurant (1 total)	200	8,000
Coffee Shop	225	8,800
Steakhouse	180	10,000
Food Court (5 tenants)	175	10,365
Entertainment		
Lounge/Banquet		7,000
Total Casino & Entertainment Square Footage		247,180
HOTEL & SPA		
Hotel		
Lodging Area	200 rooms	191,000
Lobby/Promenade		14,800
VIP Check-in		1,880
Pool & Spa		
Spa		6,000
Pool Restrooms		2,600
Pool Concessions		1,500
Pool Grill		3,000
Pool Bars (2 total)		2,250
Pool Equipment		1,500
Total Hotel & Spa Square Footage		224,530
CENTRAL PLANT		21,300
ALTERNATIVE A TOTAL SQUARE FOOTAGE		493,010
PARKING		
Surface Parking Spaces	2,500	
Parking Structure Spaces	2,000	
Alternative A Total Parking Spaces	4,500	

NOTE: All figures are approximate.

SOURCE: Friedmutter Group, 2004; AES, 2004.

The Tribe and SC Madera Management, LLC have entered into development and management contracts for the construction and operation of the proposed casino. The development contract between the Tribe and SC Madera Management, LLC would assist the Tribe in obtaining funding for the development of the proposed casino and hotel resort.

Once the casino and hotel become operational, the management contract would provide SC Madera Management, LLC the exclusive right to manage the day-to-day operation of the casino and hotel resort. SC Madera Management, LLC must comply with the terms of IGRA and NIGC regulatory requirements relating to the operation of the tribal gaming facility. The Tribe maintains the ultimate authority and responsibility for the development, operation, and management of the casino pursuant to IGRA, NIGC regulations, any Tribal gaming ordinances, and the Tribal/State Compact.

2.2.2 CASINO

Table 2-1 contains a detailed listing of each casino component. The casino would include a mixture of uses including a main gaming hall, food and beverage services, retail space, banquet/meeting space, and administrative space. Four food service facilities are planned, including a buffet, steakhouse, food court, and a leased restaurant space. Five bars in total are proposed for the casino area, including a large center bar, a main gaming area bar, and three service bars.

The casino gaming floor would encompass an area of 68,150 square feet. There are 21,760 square feet of circulation area proposed in association with the casino floor, along with approximately 4,000 square feet of high-limit gaming and approximately 11,000 feet of bingo floor space. There are 5,785 square feet of cage space proposed for the casino. Several restrooms and vestibules are also proposed in association with the casino complex, with a combined square footage of approximately 10,000 square feet proposed.

Alcohol would be served throughout the casino including the gaming floor. Accordingly, patrons would be required to be 21 years old or over. The Tribe proposes to adopt a “Responsible Alcoholic Beverage Policy” that will include, but not be limited to, checking identification of patrons and refusing service to those who appear to have had enough to drink. Smoking would be permitted within the casino; however, no-smoking sections would be provided. The Tribe would employ security personnel to provide surveillance of the casino, parking areas, and surrounding grounds. Security guards would patrol the facilities to reduce and prevent criminal and civil incidents. Security guards would carry two-way radios to request and respond to back up or emergency calls.

2.2.3 HOTEL AND SPA

The 200-room hotel would include 20% suites and would be located adjacent to a resort-type pool and spa area. The proposed plan includes a pool grill and two bars, one of which would be a swim-up bar associated with the pool area. Restrooms and other concessions would also be provided.

Table 2-1 contains a detailed listing of each hotel and spa component including relative square footage requirements.

2.2.4 PARKING

A total of 4,500 parking spaces would be provided to serve the patrons and employees of the hotel/casino resort and supporting facilities. A multi-level parking structure would provide 2,000 parking spaces and would be located on the southern side of the resort complex, with an entry vestibule and valet area separating the street-level floor of the structure from the entrance to the casino gaming floor and food court area. The remaining 2,500 parking spaces would be included as surface parking.

2.2.5 CONSTRUCTION AND GRADING

Alternative A would be constructed after the Madera site has been placed into Federal trust. Construction would take approximately one year and would involve earthwork; placement of concrete foundations; steel, wood, and concrete structural framing; masonry, electrical and mechanical work; building and site finishing; and paving, among other construction trades. The construction cost for Alternative A would be approximately \$350 million.

The Grading and Drainage Plan (**Appendix K**) incorporates fill to elevate the finished floor of the proposed public buildings approximately five feet above the FEMA 100-year floodplain. It is estimated that 200,000 cubic yards of earthwork would be required for Alternative A. It is anticipated that on-site grading would balance because soils excavated from the detention basins (see **Section 2.2.6**) would be sufficient to raise the proposed public buildings approximately five feet above the 100-year floodplain,. A preliminary grading plan for Alternative A is included as **Figure 2-3**.

2.2.6 DRAINAGE

A drainage plan has been prepared for Alternative A (**Appendix K**) to manage surface water flow and prevent downstream impacts. The development of Alternative A would include several storm drainage improvements. Roof leaders would be connected directly to a below-ground pipe system, and parking lots would be constructed with a 1 percent minimum slope and 5 percent maximum slope toward the inlets. Inlets would be placed at appropriate intervals to capture runoff and convey it to the grassy swales that surround the site. The grassy swales would accommodate overland drainage to allow the site to drain under overflow conditions. The overland drainage release would be around the perimeter of the site (**Figure 2-4**). The grassy swales would convey the stormwater to a series of stormwater detention basins (**Figures 2-5 and 2-6**). A total of 105 acre-feet of storage would be provided in the stormwater detention system to account for the increase in runoff created by increased impervious surfaces and encroachment of fill into the floodplain. The detention system would be separated into three storage areas located on the southern portion of the Madera site.

2.2.7 WASTEWATER TREATMENT AND DISPOSAL

Several options exist for wastewater treatment and disposal. Depending on the option, the following standards may apply:



SOURCE: Robert A. Karn & Associates, 2005; AES, 2006

North Fork Casino EIS / 204502 ■

Figure 2-3
Alternative A – Preliminary Grading Plan

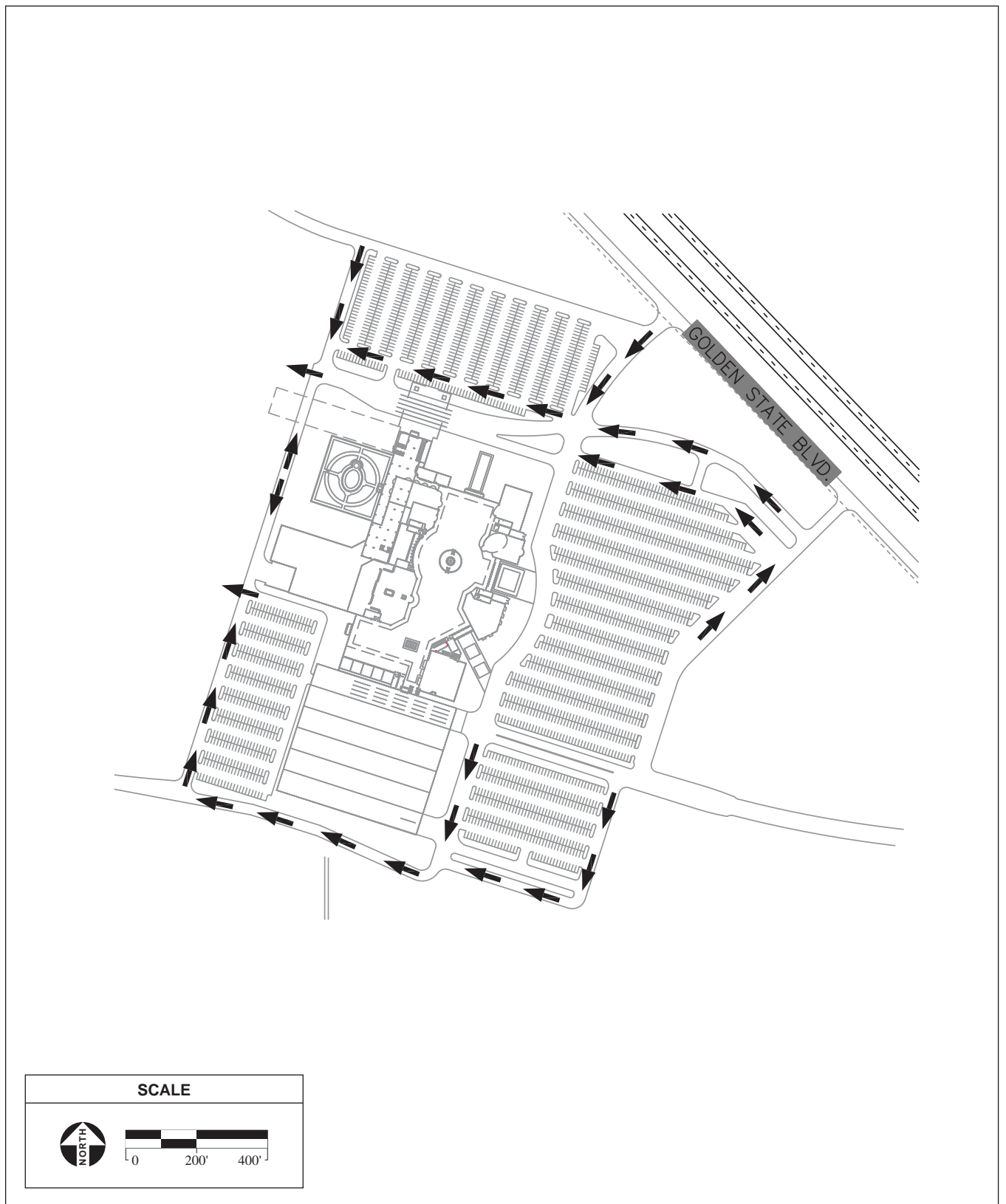
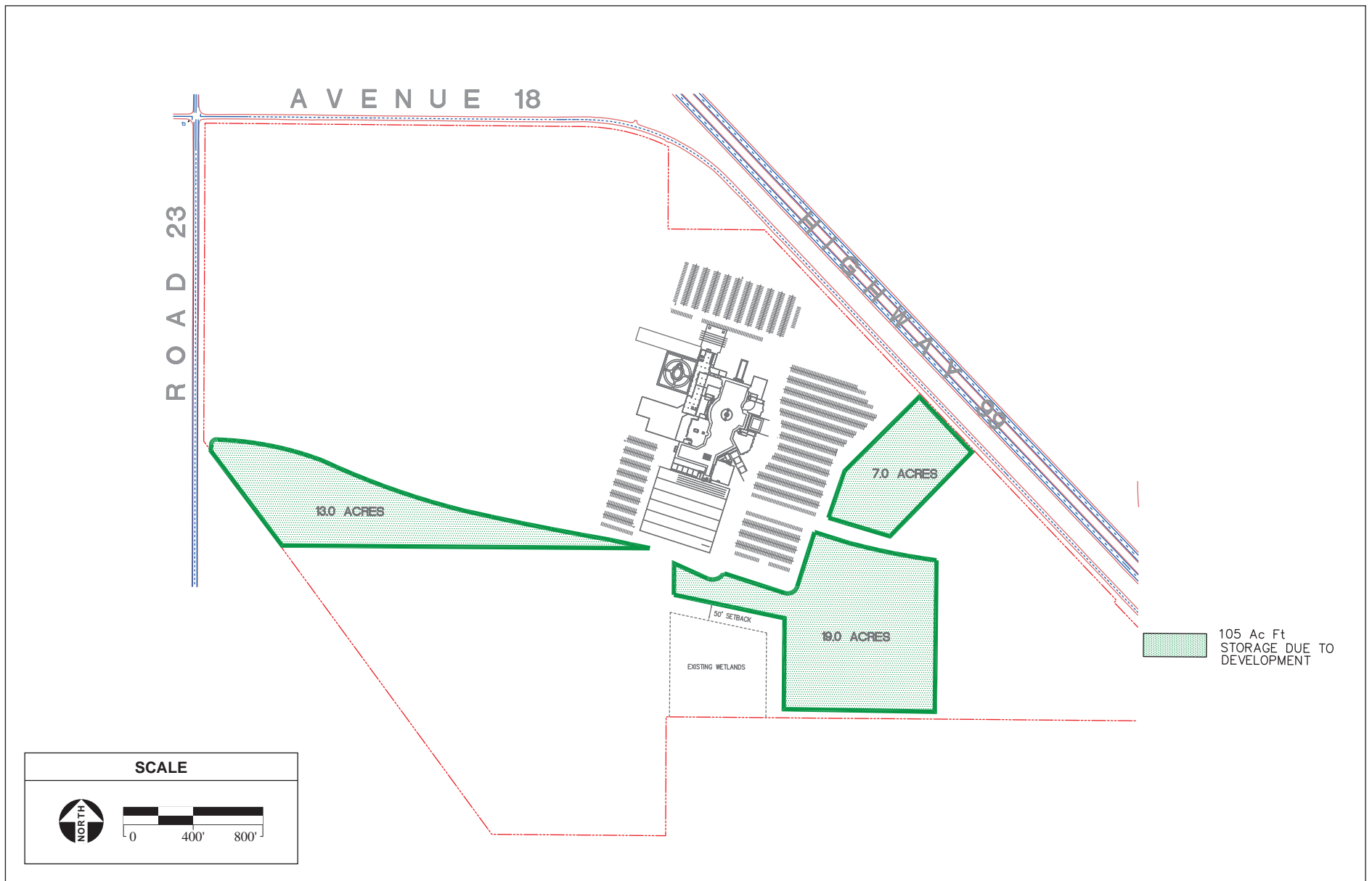
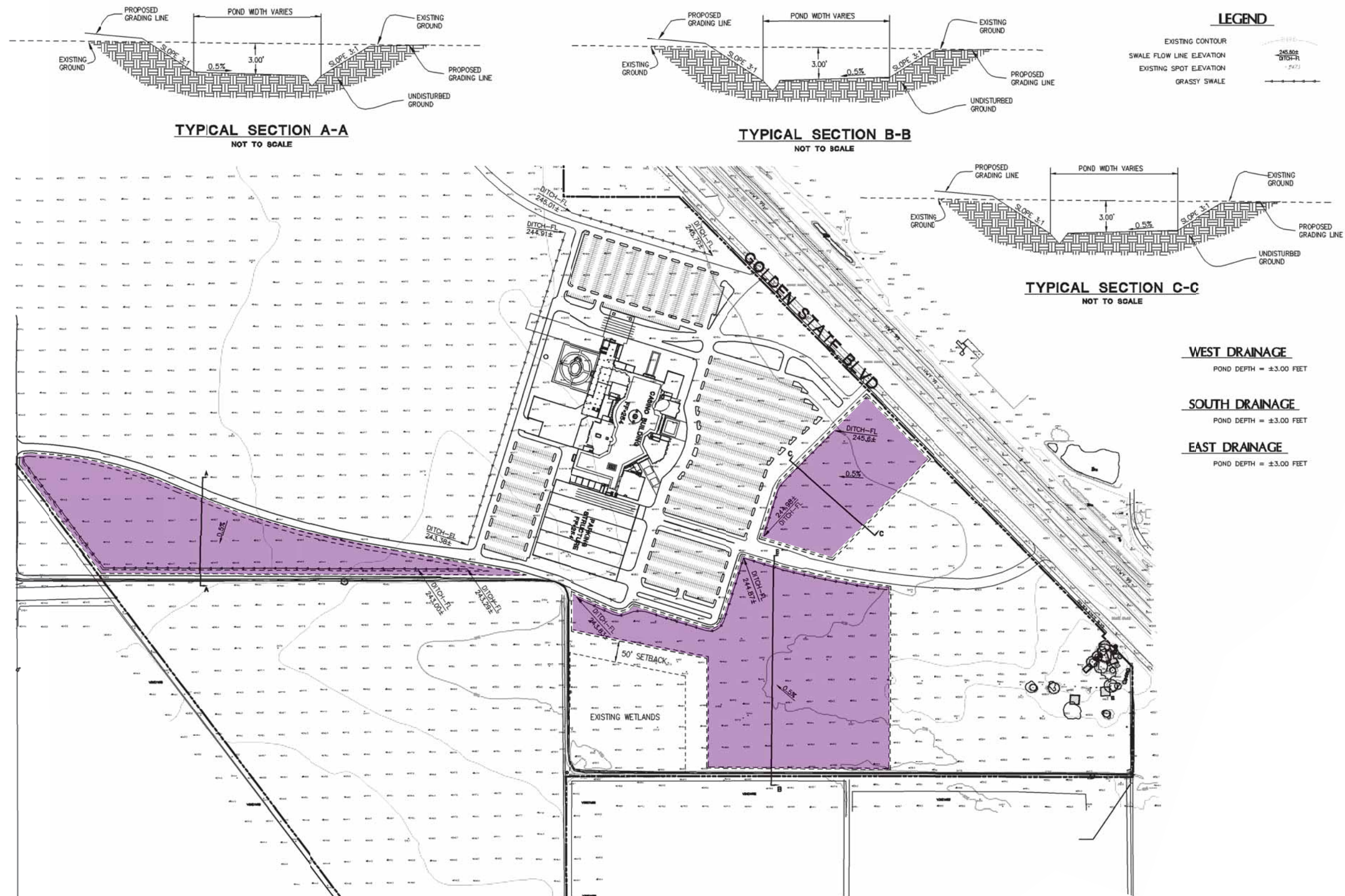


Figure 2-4
Alternative A – Overland Drainage Flow





- The technology must be one that is proven, has been accepted by U.S. Environmental Protection Agency (USEPA) and is certified by the National Sanitation Foundation;
- The treatment process will be a tertiary treatment process that has the capability of treating wastewater to a quality level that is acceptable by California Title 22 for Unrestricted Irrigation Water Reclamation;
- The process will have the capability of nitrifying and de-nitrifying converted nitrogen compounds; The combined treatment system will have the capability of accommodating waste strength loads and hydraulic peaking factors that exceed typical domestic wastewater treatment systems; and,
- The operation will be odor free.

Development of Alternative A would produce an average day flow of approximately 270,000 gallons per day (gpd) of wastewater. Weekend flows would typically be 350,000 gpd and weekday flows would average 230,000 gpd. See **Appendix I** for further discussion on flow rates and treatment options.

OFF-SITE WASTEWATER TREATMENT

One option is for wastewater treatment to occur at the City of Madera wastewater treatment plant (WWTP). The City of Madera has a trickling filter WWTP located approximately five miles southwest of the Madera site. The WWTP currently treats an average of approximately 5.8 million gallons per day (MGD) of wastewater. Recent construction has expanded the WWTP's capacity to 10.1 MGD (Appendix BB). The treated wastewater is conveyed to percolation beds for disposal. During the expansion, the trickling filter system was replaced with an activated sludge system.

The City of Madera is expected to require pretreatment before allowing the casino to connect to the City sewer system. Therefore, unless the City makes an agreement with the Tribe to impose a fee when influent biological oxygen demand (BOD) or total suspended solids (TSS) levels exceed allowable limits, the Tribe would construct a pretreatment facility on-site at the location where the proposed on-site WWTP (see below) would otherwise be located. The pretreatment facility would consist of a package plant that includes a tank with a concentric clarifier in the center, flow equalization, aeration, and sludge storage.

Conveyance to the WWTP would involve a connection to the City sewer system. After discussions with the City, three possible connection options were identified: 1) the Airport Drive Option, 2) the State Route 99 Option, and 3) the Road 23 Option (**Figure 2-7**). The Airport Drive Option involves connection to the City's sewer line, which drains southeast along Aviation Drive to a

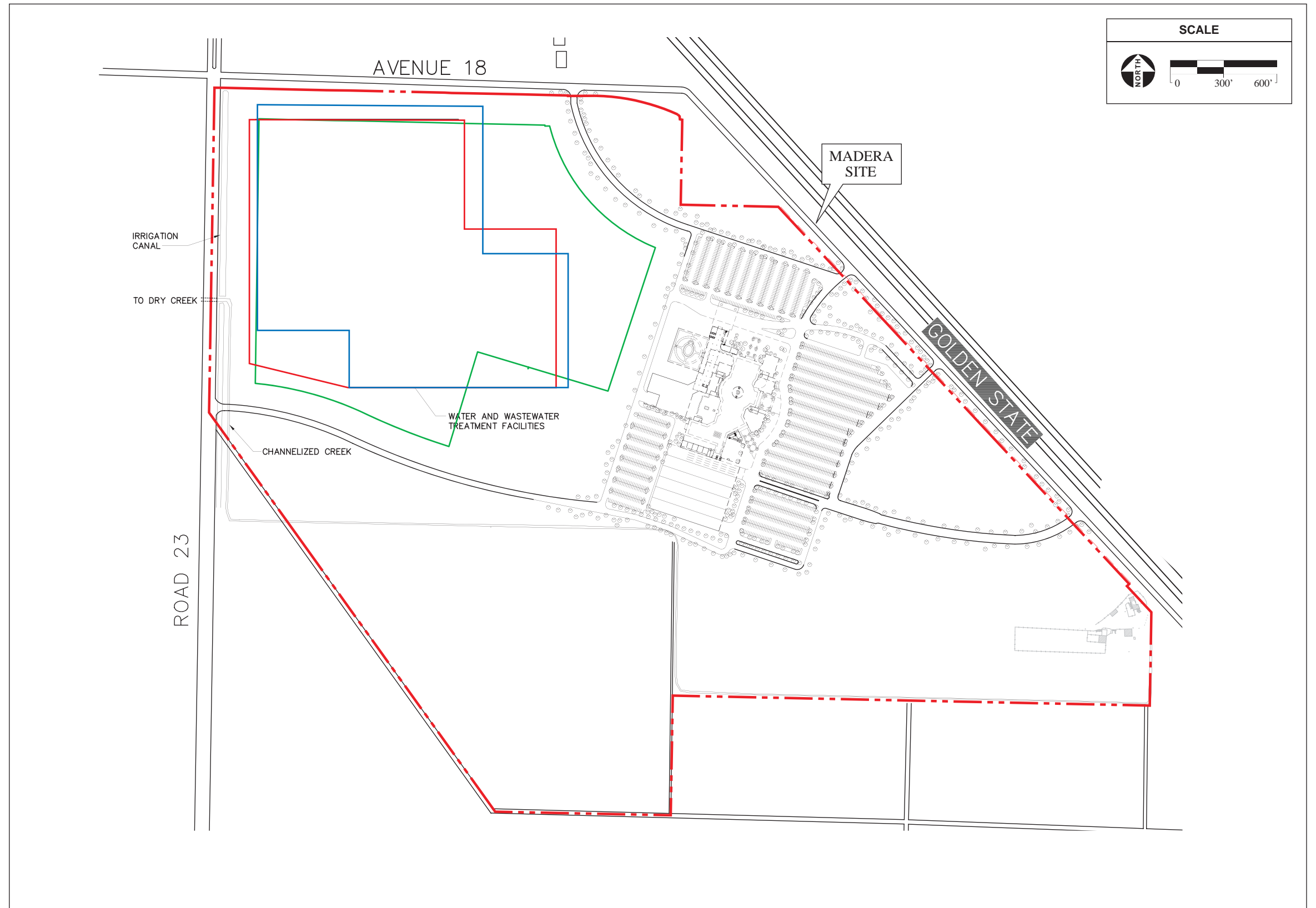
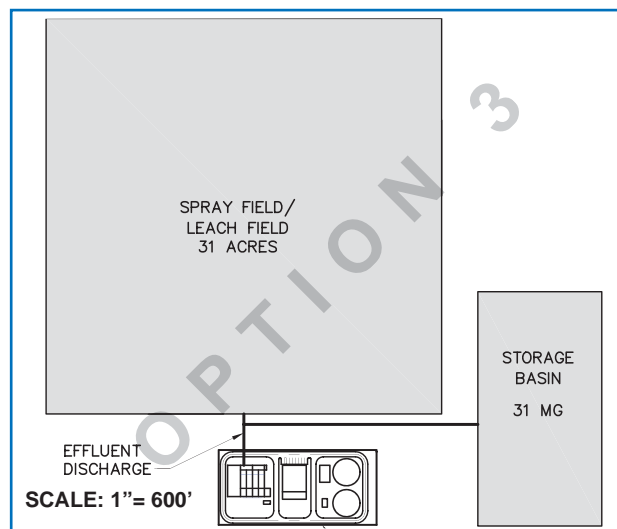
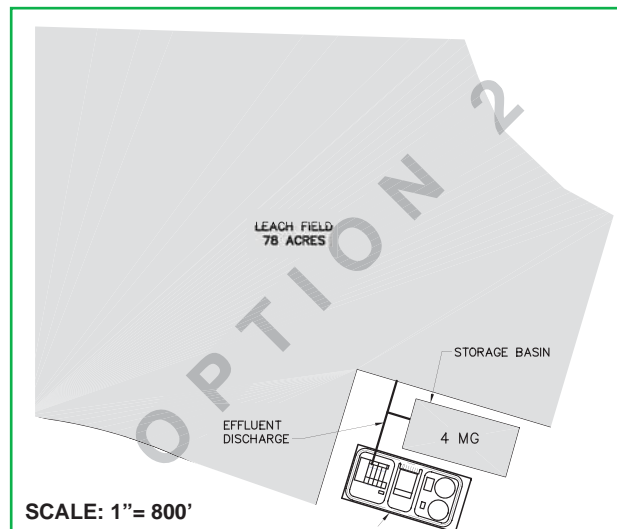
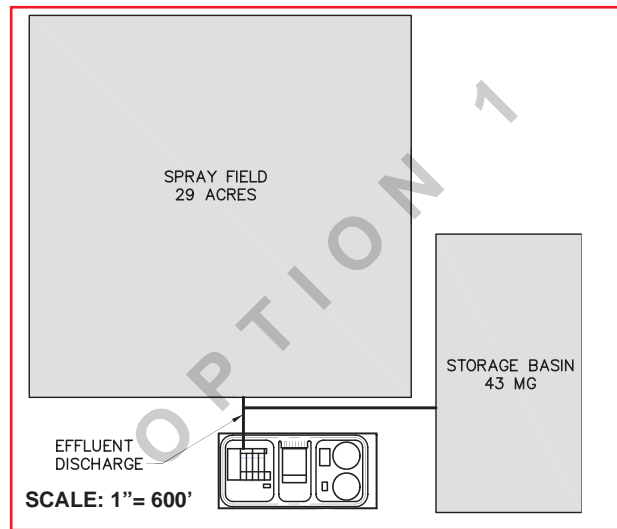


small lift station and conveys the wastewater to Avenue 16 and from there to Westberry Boulevard. Under this option, the existing sewer lift station may require expansion (additional pumps and possibly a backup generator) to convey flows to the WWTP. The State Route 99 Option would provide a connection to a recently completed 24-inch sewer line. The connection would be just west of State Route 99 where the new pipeline crosses beneath the highway from the northeast. The Road 23 Option would be to construct a new sewer line from the Madera Site west to Road 23 and south along Road 23 to Avenue 13 where it would connect to the City's pipeline that leads west along Avenue 13 to the WWTP. A new lift station would probably be needed as part of this option. No additional pipeline capacity, other than that required to handle the project's wastewater would be added under each of these options (HydroScience, 2006). At the request of the City a sewer alignment and capacity analysis has been conducted to evaluate these three connection options. According to this analysis all three options are viable, with Option 1 estimated to be most cost efficient (Appendix BB).

ON-SITE WASTEWATER TREATMENT

Alternatively, wastewater may be treated at an on-site WWTP, located to the west of the casino and hotel (**Figure 2-8**). The exact location of the WWTP would depend on the disposal option chosen. To meet the USEPA wastewater treatment criteria, the Tribal Government would use an immersed membrane bioreactor (MBR) system to provide tertiary-treated water for reuse or disposal. The MBR is a state-of-the-art system that consists of utilizing a biological reactor and microfiltration in one unit process. The ability of an MBR to eliminate secondary clarification and to operate at higher suspended solids concentrations gives the system the ability to react to wide variations in flows as would be expected at gaming facilities on weekends or holidays. MBR facilities have been successfully used at the Viejas Casino in San Diego County, Thunder Valley Casino in Placer County and Cache Creek Resort in Yolo County. MBR facilities are currently proposed at several other casino projects throughout the State. Experience at the other operating plants demonstrates the ability of the MBR system to consistently produce a high quality effluent. A detailed description of the wastewater treatment facility is presented in **Appendix I**.

Reclaimed water from the on-site wastewater treatment plant would be utilized for casino toilet flushing and landscape irrigation. All water used for reclamation would meet the equivalent of State standards governing the use of recycled water as described in Title 22 of the California Code of Regulations. Title 22 specifies redundancy and reliability features that must be incorporated into the reclamation plant. Under the current version of the Title 22 Water Recycling Criteria, the highest level of treatment is referred to as "Disinfected Tertiary Recycled Water." The proposed plant would produce an effluent meeting the criteria for this highest level of recycled water. Disinfected tertiary-treated recycled water can be used for irrigation of parks, playgrounds, schoolyards, residential landscaping, golf courses and food crops. Additional permitted uses include non-restricted recreational impoundments, cooling towers, fire fighting, toilet flushing and



decorative fountains. The water produced by this treatment system is highly treated and poses no health risks for the intended uses.

A wastewater transmission pipeline would collect wastewater from the casino. A raw wastewater lift station would convey casino wastewater to the headworks of the WWTP. Due to site topography, the main pipeline to the WWTP would be a pressurized force main. The on-site WWTP would be built at least five feet above the 100-year floodplain to minimize contamination of floodwaters during a flood event.

TREATED EFFLUENT REUSE FACILITIES

Effluent reuse would require a recycled water storage tank, a recycled water pump station, on-site landscape irrigation facilities, and dual plumbing. The purpose of the recycled water storage tank would be to provide equalization storage for on-site recycled water use for toilet flushing, on-site landscaping, and for effluent discharge. Recycled water would also be used to supply water for fire protection. For Alternative A, the recycled water storage tank would hold approximately 900,000 gallons and would be constructed of welded steel. A recycled water booster station may be required to maintain pressure in the recycled water distribution system.

The primary transmission line from the recycled water storage tank would supply the gaming facility and landscaping with recycled water. Surplus recycled water would be used for landscape irrigation or disposed of as discussed in the following section.

To use recycled water for “in-building” purposes, the plumbing system within the building would have recycled water lines plumbed separately from the building’s potable water system with no cross connections. The dual plumbing systems would be distinctly marked and color-coded.

TREATED EFFLUENT DISPOSAL

Average day disposal flows would be approximately 270,000 gpd. Treated effluent may be discharged through surface water disposal, spray disposal, sub-surface disposal, or a combination of these methods.

Surface Water Disposal

Surface water disposal would occur into a channelized creek that flows through the Madera site. This creek flows into Dry Creek, and eventually into the Fresno River. The Fresno River is not designated as part of the Regional Water Quality Control Board’s (RWQCB) 303(d) listing of impaired water bodies. However, it does flow into the San Joaquin River, which is listed as an impaired water body. The designated beneficial uses of the Fresno River include use as a surface water body for municipalities, communities and industries, and warm freshwater habitat. A National Pollutant Discharge Elimination System (NPDES) permit would be required to discharge

into the on-site creek. Since the treatment facilities and point of discharge would be fully contained within trust lands, the NPDES permit would be issued and regulated by the USEPA.

Sprayfield Disposal

Sprayfield disposal is a technique in which treated effluent is applied to sprayfields at agronomic rates throughout the year. During rain events, sprayfields cannot be used. Therefore, a large seasonal storage basin would be necessary to store treated effluent during the rainy season. The location for the wastewater treatment plant and sprayfields is shown in **Figure 2-8**. Under this option, 29 acres of land in the northwest corner of the Madera site would be used for spray disposal. A seasonal storage basin would be located near the WWTP and would hold 43 million gallons (MG) of treated effluent.

Alternatively, effluent could be used to irrigate the City of Madera's golf course located south of Avenue 17, between Road 23 and the municipal airport. Approximately one mile of recycled water pipeline would be located along Road 23 (**Figure 2-7**). The golf course currently uses groundwater for irrigation, which is estimated at 977,000 gpd in the summer. The casino's treated effluent could provide approximately 25% of the irrigation demand for the golf course (HydroScience, 2006).

Sub-Surface Disposal

Leachfields could be used to dispose of treated wastewater effluent by distributing it underground through a network of perforated pipes or infiltration chambers. Sub-surface disposal requires good percolation and several feet of clearance above the highest groundwater levels. The location of the WWTP and leachfields are shown in **Figure 2-8**. A maximum of 78 acres of leachfields would be required for disposal of the entire 270,000 gpd. A seasonal storage basin would contain 4 MG of treated effluent.

Combination of Surface and Sub-Surface Disposal

Under this option, sprayfields would be used in conjunction with leachfields. The combined area would be approximately 31 acres. A seasonal storage basin would also be required to hold 31 MG. The location of the WWTP and combination spray and leach fields are shown in **Figure 2-8**.

2.2.8 WATER SUPPLY

The estimated water demand for the proposed project is approximately 400,000 gpd. Should an on-site WWTP be developed, recycled water would be used for indoor non-potable uses and for landscaping, dropping the average day demand to approximately 273,000 gpd.

Water for domestic use, emergency supply, and fire protection would be provided by on-site groundwater or from the City of Madera. The City of Madera's nearest water well is Well No. 26 at Airport Drive (**Figure 2-9**). If the casino were to hook up to the City's water system, it is expected, based on discussions with City staff, that the City would require a looped system to the

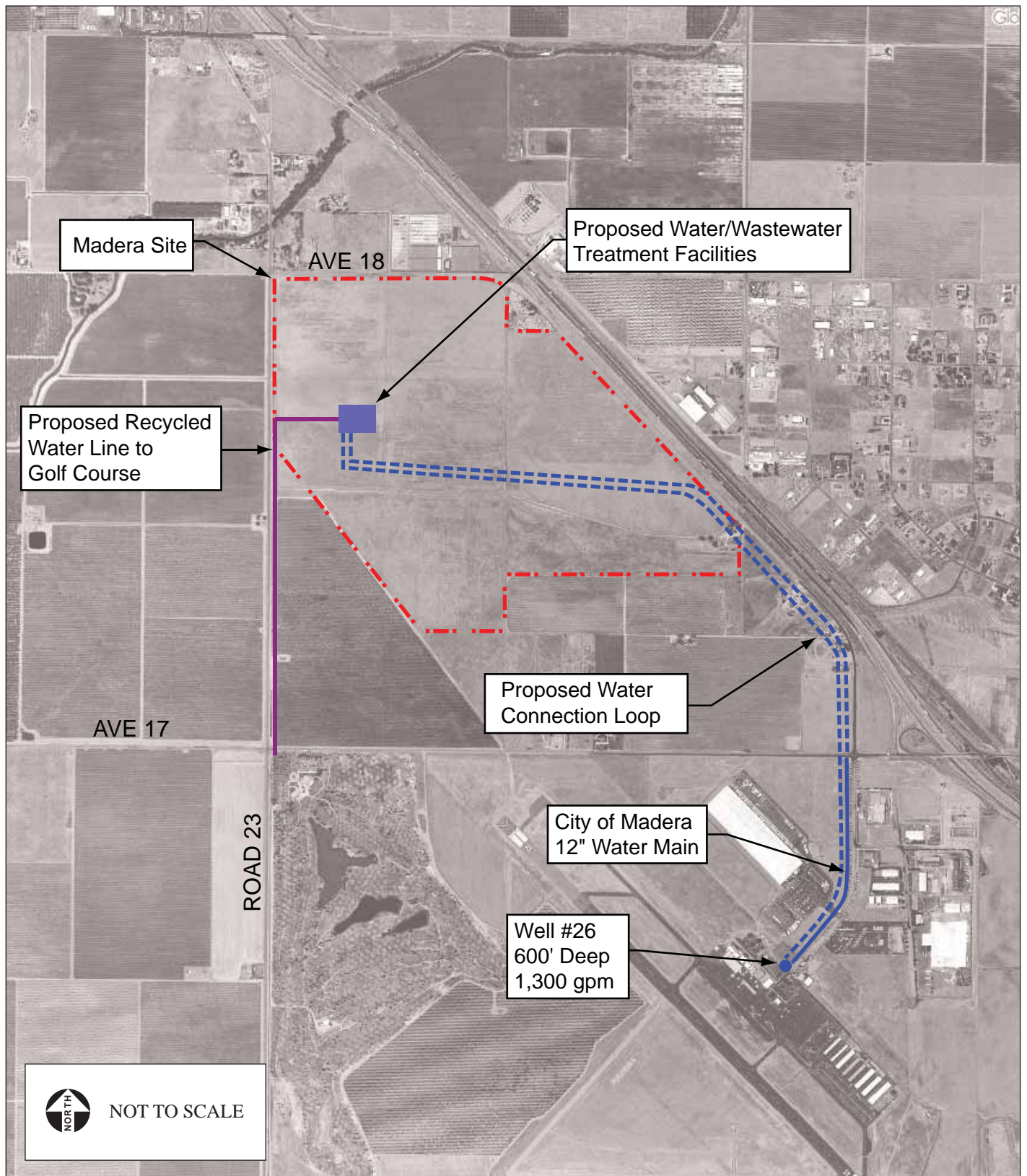


Figure 2-9
Alternatives A-C – Off-Site Water and Recycled Water Options

well as shown in **Figure 2-9**. The City would require the Tribe to fund the drilling and development of an on-site well that would be added to the casino loop to provide primary water supply. The City's existing Well No. 26 would be used solely for redundancy and fire flow capacity (it's current use in the City's water system) (City of Madera, 2005b; HydroScience, 2006 – **Appendix I**). If fire flow capacity were not met, an on-site water storage tank would be required. Groundwater quality is generally good in the area, but manganese levels tend to increase with depth north of the City, so treatment may be required before use.

Currently, one active well is located on the Madera site. It is an agricultural well that was drilled in 1973 and is approximately 300 feet deep. The groundwater level has been dropping in the region. Therefore, new on-site wells with adequate capacity for the hotel and casino would probably need to be at least 600 feet deep. Nearby wells that reach depths of 500 to 600 feet have capacities of approximately 1,300 to 2,200 gallons per minute (gpm). If the City of Madera loop is developed, one on-site well would be constructed with a firm water supply capacity of approximately 400,000 gpd / 278 gpm (no water recycling) or approximately 273,000 gpd / 190 gpm (with water recycling). Water would be recycled if an on-site WWTP is developed. If the water supply system is contained wholly on-site, two on-site wells would be drilled, one for continuous supply and one for redundancy in case of malfunction or maintenance of the primary well. Each well would have a firm water supply capacity of either approximately 400,000 gpd / 278 gpm (no water recycling) or approximately 273,000 gpd / 190 gpm (with water recycling). Given that the on-site wells would be located within the 100-year floodplain, the top of the well casing and wellhead facilities would be raised at least three feet over the base flood elevation to minimize potential risks of contaminating the drinking water supply during a flood event.

Water from the on-site well(s) would be stored in a water storage tank. The required capacity of the tank would be dependant on the development's fire flow requirements. Based on storage requirements for similar facilities and the recommendations of the Madera Fire Marshall, the expected capacity of the storage tank is 1.1 MG. The tank would be cylindrical and would be based on standard pre-engineered tank dimensions. A pump station would be utilized to maintain pressure in the distribution system. The pump station is required to convey water from the storage tank to the facilities and the ultimate pumping capacity would be dependent on fire flow requirements. These requirements would be satisfied by two fixed-speed high service pumps, each with a capacity that is half of the projected flow requirements.

2.2.9 FUEL STORAGE

Four diesel fuel storage tanks would be needed for the operation of four emergency generators at the casino. Two diesel fuel storage tanks would be needed for the operation of one emergency generator and one fire pump for the hotel. One diesel fuel storage tank would be needed for the operation of one emergency generator for the wastewater treatment facility and human resources building. The fuel tanks would be above ground. The largest generators would have storage tanks

of approximately 1,000 gallons. The generators would be located in areas that are easily accessed by maintenance and emergency personnel, near the service entrance/loading docks.

2.2.10 MEMORANDA OF UNDERSTANDING

MADERA COUNTY

A Memorandum of Understanding (MOU) was signed on August 16, 2004 by and between Madera County and the Tribe (**Appendix C**). Under the MOU, the Tribe agrees to provide one-time compensation (non-recurring contributions) to the County to mitigate potential and perceived impacts of the proposed project on the County and the surrounding communities. The Tribe also agrees to compensate the County annually (recurring contributions) for potential and perceived impacts of the proposed project. The Tribe also agrees to a variety of non-monetary provisions. According to the MOU, the provisions agreed to within the MOU are sufficient to mitigate potential non-recurring and recurring impacts from the proposed project on the County and the Cities of Madera and Chowchilla, including those impacts which are not specifically identified in the MOU.

According to the MOU, recurring and nonrecurring contributions made to the County constitute all of the contributions the Tribe will make to all County Departments, agencies and subdivisions and all other local and regional public entities, which are located within, or have jurisdiction within the boundaries of the County. As agreed to in the MOU, the County is responsible for distributing the contributions to the appropriate County Departments, agencies, subdivisions and Cities.

The contributions and other obligations within the MOU are contingent upon the Secretary accepting the trust title to the Madera site, the occurrence of the construction date, the Tribe and the State entering into a Tribal-State Compact, and in some recurring contribution cases, the occurrence of the opening date.

Madera County has recently passed a resolution supporting the concept of the proposed project on the Madera site (**Appendix U**). The resolution cites the MOU contributions, community support, and job creation prior to resolving to support the concept of the proposed project on the Madera site.

Non-Recurring Contributions

The Tribe has agreed in the MOU to make non-recurring contributions to the County in lieu of taxes, fees, charges, cost reimbursements, service fees or other assessments as a funding mechanism to mitigate potential/perceived impacts from the proposed project.

The Tribe has agreed in the MOU to make non-recurring contributions, pursuant to an escrow arrangement, with the purpose of supplementing the County's public safety resource budget. The contributions, totaling \$1,915,000, are to be used at the County's discretion and may be used to

supplement the County's budget for the purposes of acquiring land for constructing and equipping a fire protection and public safety facility located within a five-minute response time to the Madera site. According to the MOU, the funds may also be used to supplement the County's budget for other public safety-related purposes mutually agreed upon by the County and the Tribe. The Tribe and the County have agreed in the MOU that the contributions would mitigate potential impacts of the proposed project on fire protection, emergency medical services, and first responder and law enforcement resources of the County and the surrounding communities. The amount of the contribution is subject to annual Consumer Price Index (CPI) adjustment as of July 1, 2005 and each July 1 thereafter until the date of the contribution (after the construction date as defined in Section 1 of the MOU).

The Tribe has agreed in the MOU to make non-recurring contributions to the County to mitigate potential impacts of the proposed project on road and other transportation resources of the County. The contributions would be made as a government funding mechanism pursuant to an escrow arrangement to be used by the County to supplement the transportation budget. According to the MOU, the contribution would total an amount estimated at between \$4,000,000 and \$15,000,000 based upon the traffic study and environmental analysis of the proposed project. The contributions would be used at the County's discretion to pay the actual costs of construction, improvement, equipping, and environmental reports or analysis of County roads and other transportation resources, which the County elects to complete on the basis of a traffic study after meeting and conferring with the Tribe. The County may also use the funding for other road and transportation-related purposes as mutually agreed upon by the County and the Tribe. The amounts of the contributions are subject to annual CPI adjustment as of July 1, 2005 and each July 1 thereafter.

The Tribe has agreed in the MOU to contribute to the County a non-recurring contribution of \$600,000 in lieu of road impact fees with the purpose of supplementing the County's budget for roads. The amount of the contribution is subject to annual CPI adjustment as of July 1, 2005 and each July 1 thereafter.

In order to mitigate potential impacts on certain recreational properties, the Tribe has agreed in the MOU to contribute to the County's budget a non-recurring contribution of \$200,000 to be used for expenditures related to the Courthouse Park and the Ahwahnee property. The timing of the contribution would be no later than 30 days after the construction date.

The Tribe has agreed in the MOU to contribute to the Madera Unified School District's budget for schools and in lieu of school impact fees, a non-recurring contribution of \$150,000. The timing of the contribution would be no later than 30 days after the construction date, as defined above. The amount of the contribution is subject to annual CPI adjustment as of July 1, 2005 and each July 1 thereafter.

The Tribe has agreed in the MOU to reimburse the County up to \$50,000 for the costs, prior to and including the construction date, associated with retaining outside counsel for assistance with negotiating the MOU and consummating the transactions contemplated.

Recurring Contributions

The Tribe has agreed in the MOU to make recurring contributions in 12 equal monthly installments unless otherwise agreed upon with the first recurring contribution prorated for the applicable period. According to the MOU, the first recurring contribution would occur 30 days after the opening date, unless otherwise specified. The Tribe has agreed in the MOU to make recurring contributions to the County in lieu of any taxes, fees, charges, cost reimbursements, service fees or other assessments of up to \$4,035,000 per annum, as described below.

The Tribe has agreed in the MOU to establish the North Fork Rancheria Charitable Foundation, pursuant to State nonprofit corporation law, no later than 30 days after the opening date and to make a recurring contribution totaling \$200,000 per annum. According to the MOU, the Charitable Foundation shall be governed by a board of directors consisting of two members designated by the Tribe, two members designated by the County and one member selected by the members. The funds in the Charitable Foundations will be used to supplement monies otherwise available to recipients of such funds and will be used for purposes which mitigate potential social impacts of the proposed project or otherwise benefit the County, including recreation, park services, senior centers, youth programs, service club projects, or other programs or activities as agreed upon by the Charitable Foundation Board.

The Tribe has agreed in the MOU to establish the North Fork Rancheria Economic Development Foundation, pursuant to the State nonprofit corporation law, no later than 30 days after the opening date and to make a recurring contribution of \$250,000 per annum. The Economic Development Foundation shall be governed by a board of directors consisting of two members designated by the Tribe and two members designated by the County and one member selected by the members. The contributions to the Foundation shall be used for the countywide purposes, which mitigate potential impacts of the proposed project, benefit the County and are agreed upon by the Economic Development Foundation Board.

The Tribe has agreed in the MOU to establish the North Fork Rancheria Educational Foundation, pursuant to the State nonprofit corporation law, no later than 30 days after the opening date and make a recurring contribution of \$400,000 per annum. According to the MOU, a board of directors consisting of two members designated by the Tribe, two members designated by the County (one a member of the Madera Unified School District and the other a member of the Chawanakee School District) and one member who shall be the County Superintendent of Schools shall govern the Educational Foundation. The funds in the Educational Foundation will be used to supplement monies, which would otherwise be available to recipients of such funds and used for purposes,

which provide funding to support the instructional programs of the local school districts, to support work force development and training programs or to mitigate potential impacts of the proposed project.

The Tribe has agreed in the MOU to establish the North Fork Rancheria Unincorporated Area Foundation, pursuant to State nonprofit law, no later than 30 days after the opening of the proposed project and make a recurring contribution of \$250,000 per annum. According to the MOU, the Unincorporated Area Foundation shall be governed by a board of directors consisting of three members designated by the Tribe and two members designated by the County, upon consultation with one another. The funds in the Unincorporated Area Foundation will be used for purposes such as community development, education, beautification, infrastructure, parks/recreation, business relations/development/attraction, and assistance to other non-profit organizations, which mitigate potential impacts of the proposed project and benefit unincorporated areas of the County or as agreed upon by the Unincorporated Area Foundation Board.

The Tribe has agreed in the MOU to contribute to the County \$250,000 per annum with the purpose of supplementing the County's budget for neighborhood housing or other workforce programs.

The Tribe has agreed in the MOU to supplement the County's budget for law enforcement with an annual contribution of \$415,000 or contribute an amount equal to the costs of the salary and benefits of one-half of a sergeant position and five deputy positions. Timing of the contributions will commence 180 days prior to the estimated opening date of the proposed project, as defined above.

The Tribe has agreed in the MOU to supplement the County's budget for fire protection with an annual contribution of \$1,200,000 or contribute an amount equal to the costs of the salary and benefits of three fire captains/fire apparatus engineers and six firefighters/fire apparatus engineer positions. Timing of the contributions will commence 90 days prior to the estimated opening date of the proposed project.

The Tribe has agreed in the MOU to contribute \$50,000 per annum to the County with the purpose of redistribution to the County Department of Behavioral Health Services to be used to supplement the budget for alcohol education and the treatment and prevention of problem gambling and gambling disorders.

The Tribe has agreed in the MOU to contribute \$70,000 per annum to the County to be used for the maintenance, operation and preservation of open space within the Courthouse Park and the Ahwahnee property.

The Tribe has agreed in the MOU to contribute \$100,000 per annum to supplement the County's public protection budget with the purpose of funding additional public safety support or administrative positions.

The Tribe has agreed in the MOU to contribute \$850,000 per annum as a funding mechanism to the County's general fund public facilities budget for recurring distributions to the County in the amount of \$500,000, to the City of Madera in the amount of \$250,000 and to the City of Chowchilla in the amount of \$100,000. According to the MOU, 20 percent of the funds redistributed to the City of Madera will be used to supplement the City of Madera's transportation budget. Also according to the MOU, 20 percent of the funds redistributed to the City of Chowchilla will be used to supplement the City of Chowchilla's public facilities budget and the remainder of the contributions will be used to supplement the public facilities budget of the City of Chowchilla.

Non-Monetary Covenants

As agreed to in the MOU, the Tribe has not requested the County to provide water, wastewater, electricity, natural gas or telecommunication services to the Madera site. Also, according to the MOU, the Tribe has not determined whether it intends to request that the City of Madera provide water or wastewater services to the Madera site; any future arrangements for such would be made solely between the Tribe and the City of Madera. In the event the Tribe develops and constructs its own wastewater treatment system on the Madera site, the Tribe has agreed in the MOU to obtain a National Pollution Discharge Elimination System (NPDES) permit for wastewater discharge as required by the Clean Water Act and construct a tertiary treatment system or similar system.

The Tribe has agreed in the MOU to obtain solid waste services from the County's solid waste service franchisee at the standard terms and rates and shall implement single-stream recycling and green waste diversion.

In the event that the Tribal-State Compact does not contain provisions, the Tribe has agreed in the MOU to minimum gaming age provisions of age 21, the food and beverage handling provisions and the safe drinking water standards of the 1999 model State compact, and the building code and inspection provisions of the June 2004 State compact amendments.

The Tribe has agreed in the MOU to prohibit persons under the age of 21 years from entering and remaining in any area in which gaming activities are being conducted.

The Tribe agreed not to conduct a variety of activities that are not proposed by the Tribe, but were nonetheless important to the County. As agreed in the MOU, the Tribe does not intend to construct a golf course on the Madera site until the earlier of 20 years from the date of the MOU, the date on which the aggregate number of rounds of golf played on the Madera Municipal Golf Course in any

calendar year exceeds 60,000 18-hole equivalent rounds, or the date the Madera Municipal Golf Course is sold or ceases operation.

The Tribe has agreed in the MOU to work in good faith with the Cities and the County to employ qualified residents of the County, with a goal of 50% new hires from residents of the County, to the extent permitted by applicable law. The Tribe has also agreed to provide training programs to assist County residents in becoming qualified for employment. The MOU acknowledges that County employment provisions in no way limit or modify the Tribe's policy of Indian preference in employment.

Mutual Aid Agreements

As agreed to in the MOU and upon the request of the Tribe, the County or its departments would enter into good faith negotiations with the Tribe, and would encourage City and other local or regional public entities to enter into good faith negotiations with the Tribe, to execute and deliver a mutual aid agreement or other arrangements with the Tribe on mutually agreeable terms relating to fire protection, emergency medical, first responder and law enforcement responses. The Tribe also agreed in the MOU that the County would encourage the Cities and other local public entities to enter into good faith negotiations with the Tribe to execute and deliver agreements or arrangements on mutually agreeable terms relating to investigation, jurisdictional or other similar issues.

CITY OF MADERA

A MOU was signed on October 18th, 2006, by and between the City of Madera and the Tribe (**Appendix C**). Under the MOU, the Tribe agrees to provide one-time compensation (non-recurring contributions) to the City to mitigate potential and perceived impacts of the proposed project on the City of Madera. The Tribe also agrees to compensate the City annually (recurring contributions) for potential and perceived impacts of the proposed project on the City of Madera, including those impacts that are not specifically identified in the MOU. According to the MOU, the provisions agreed to within the MOU are sufficient to mitigate possible non-recurring and recurring impacts from the proposed project on the City of Madera, including those impacts which are not specifically identified in the MOU, thereby ensuring the proposed project does not have a detrimental impact on the City or the surrounding community.

According to the MOU, recurring and non-recurring contributions made to the City constitute all of the contributions the Tribe will make to any City of Madera department or agency, including local and regional public entities which are located within, or have jurisdiction within, the boundaries of the City. As agreed to in the MOU, the City of Madera is responsible for distributing the contributions to the appropriate City departments, agencies and/or public entities.

The contributions and other obligations within the MOU are contingent upon the Secretary accepting the trust title to the Madera site, the occurrence of the construction date, the Tribe and the

State entering into a Tribal-State Compact, and in some instances, the occurrence of the opening date.

Non-Recurring Contributions

The Tribe has agreed in the MOU to make non-recurring contributions to the City of Madera in lieu of taxes, fees, charges, cost reimbursements, service fees or other assessments and as a funding mechanism to mitigate potential/perceived impacts from the proposed project. According to the MOU, the dollar amount of each non-recurring contribution is subject to an annual CPI adjustment as of July 1, 2008, and each July 1 thereafter until the date of the contribution.

The Tribe has agreed in the MOU to make a non-recurring contribution for the purpose of supplementing the City's law enforcement budget. The contribution is to be paid 90 days before the estimated opening date, as defined in the MOU. The contribution, totaling \$200,000, is to be used to fund the initial capital costs of providing an additional law enforcement shift. The Tribe and the City have agreed in the MOU that the contribution would mitigate potential impacts of the proposed project on City law enforcement resources.

The Tribe has agreed in the MOU to make a non-recurring contribution for the purpose of supplementing the City's transportation budget. The contribution is to be paid 90 days after the opening date. The contribution, totaling \$885,000, is to be used to fund City's budget for road and transportation system improvements. The Tribe and the City have agreed in the MOU that the contribution would mitigate potential impacts of the proposed project on city transportation system resources.

The Tribe has also agreed in the MOU to make a non-recurring contribution to further supplement the City's transportation budget for the purpose of road maintenance and upgrades. The contribution is to be paid pursuant to an escrow arrangement, but no later than one year after the opening date. The contribution amount shall be equal to the Tribe's proportionate share of improvements, as identified in the final traffic analysis of this EIS (**Appendix M**), but not to exceed \$4,000,000. The funds may, at the City's discretion, be used to pay the actual costs of construction, improvement, equipping and environmental analysis for newly annexed city roads and other transportation resources that the City deems necessary based on traffic studies, and as mutually agreed upon by the Tribe and the City. The Tribe and the City have agreed in the MOU that the contribution would mitigate potential impacts of the proposed project on city resources used for road maintenance and upgrades.

The Tribe has agreed in the MOU to make a non-recurring contribution to be used to supplement the City of Madera's planning budget. The contribution is to be paid 30 days after the construction date, as defined in the MOU. The contribution, totaling \$200,000 is to be used to fund a specific plan update for the vicinity of the Madera Site. The Tribe and the City have agreed in the MOU

that the contribution would encourage orderly growth of planned development in the vicinity of the Madera site.

The Tribe has agreed in the MOU to make a non-recurring contribution (totaling \$2,500,000) to be used to supplement the City of Madera's budget to fund improvements to the irrigation system, water features, and other items of maintenance to the City's golf course. The contribution is to be paid in two equal semi-annual installments beginning one year after the opening date, as defined in the MOU.

The Tribe has agreed in the MOU to make a non-recurring contribution (\$2,000,000) to be used to establish a special fund, the Madera East Side Youth Recreational Fund. The contribution is to be paid in two equal annual installments beginning two years after the opening date. This fund would be used to enhance recreational opportunities for youth and other citizens residing on the east side of the City. As agreed upon in the MOU, the City shall establish a special committee – the Madera East Side Youth Recreational Committee, which will consist of two members designated by the Tribe, two members designated by the City, and one member selected by the other members. The committee shall, by majority vote, determine the appropriate use(s) of the Recreational Fund.

The Tribe has agreed in the MOU to make a non-recurring contribution (\$500,000) to be used to fund a feasibility study to research possible public safety training program(s) for police and fire personnel. The contribution is to be paid in two equal annual installments beginning three years after the opening date.

Recurring Contributions

The Tribe has agreed in the MOU to make recurring contributions in 12 equal monthly installments unless otherwise agreed upon with the first recurring contribution prorated for the applicable period. According to the MOU, the first recurring contribution would occur 30 days after the opening date, unless otherwise specified. The Tribe has agreed in the MOU to make recurring contributions to the City in lieu of any taxes, fees, charges, cost reimbursements, service fees or other assessments of up to \$1,075,000 per annum, as described below. According to the MOU, the dollar amount of each recurring contribution is subject to an annual CPI adjustment as of July 1 following the opening date and each July 1 thereafter.

The Tribe has agreed in the MOU to make a recurring contribution to supplement the City of Madera's law enforcement budget. A one-time contribution totaling \$640,000 will be made to cover the annual salaries and benefits of six new law enforcement officers. Each year thereafter, the Tribe shall make a recurring contribution to the City of Madera in the amount of \$675,000 per annum for salaries, benefits and equipment. The Tribe and the City have agreed in the MOU that the contribution will ensure the proposed project does not have a detrimental impact on the City and surrounding community.

The Tribe has agreed in the MOU to make a recurring contribution to supplement the City of Madera's reinvestment fund. A recurring contribution of \$100,000 will be made annually, and is to be used for efforts to preserve the character and economic vitality of the City's downtown area.

The Tribe has agreed in the MOU to make a recurring contribution of \$50,000 to be used to support extension of the City bus system to the Madera site. The Tribe and the City have agreed in the MOU that the contribution will mitigate potential impacts of the proposed project on the City of Madera and surrounding region's air quality.

The Tribe has agreed in the MOU to make a recurring contribution to supplement the City of Madera's general fund. A recurring contribution of \$250,000 is to be made annually. The Tribe and the City have agreed in the MOU that the contribution will mitigate possible unknown general fiscal impacts of the proposed project on the City.

As noted above, the Tribe has agreed in the County MOU to contribute \$250,000 per year to the City of Madera's general fund. The City MOU allows the Tribe to deduct the amount that the City receives from the County pursuant to the County MOU.

Non-Monetary Covenants

As agreed to in the MOU, the Tribe has not requested the City of Madera to provide, and the City does not commit itself to provide, water, wastewater, electricity, natural gas or telecommunications services to the Madera site. Also, according to the MOU, the Tribe has not determined whether or not to request that the City of Madera provide water or wastewater service to the Madera site; any future arrangements would be made between the Tribe and City of Madera. In the event the Tribe develops and constructs its own wastewater treatment system on the Madera site, the Tribe has agreed in the MOU to obtain a NPDES permit for wastewater discharge as required by the Clean Water Act and construct a tertiary treatment system or similar system. To the extent feasible and commercially reasonable, the Tribe agrees to incorporate measures to minimize wastewater flows and use recycled water.

The Tribe has agreed in the MOU to work in good faith with the City to employ qualified residents at the proposed casino/hotel resort, with a goal of 33% new hires from residents of the City, to the extent permitted by applicable law. The Tribe has also agreed to provide training programs to assist City residents in becoming qualified for employment. The MOU acknowledges that City employment provisions in no way limit or modify the Tribe's policy of Indian preference in employment.

Mutual Aid Agreements

As agreed to in the MOU and upon the request of the Tribe, the City or its departments would enter into good faith negotiations with the Tribe to execute and deliver a mutual aid agreement or other arrangements with the Tribe on mutually agreeable terms relating to fire protection, emergency medical, first responder and law enforcement responses. The parties also agree in the MOU that the City would enter into good faith negotiations with the Tribe to execute and deliver agreements or arrangements on mutually agreeable terms relating to investigation, jurisdictional or other similar issues.

MADERA IRRIGATION DISTRICT

A MOU was signed on December 19th, 2006, by and between the Madera Irrigation District (MID) and the Tribe (**Appendix C**). Under the MOU, the Tribe agrees to compensate MID annually (recurring contributions) for potential and perceived impacts of the proposed project on MID and for aquifer recharge purposes. The Tribe also agrees to various measures aimed at minimizing impacts to water resources and preserving and promoting agricultural land uses. The contributions and other obligations within the MOU are contingent upon the Secretary accepting the trust title to the Madera site and the occurrence of the opening date.

Recurring Contributions

The Tribe has agreed in the MOU to make annual recurring contributions of \$11,500 in lieu of any stand by or other fees, assessments, and taxes to MID related to the Madera site. According to the MOU, the first recurring contribution would occur 30 days after the transfer of the Madera site into trust for the Tribe. According to the MOU, the dollar amount of each recurring contribution is subject to an annual CPI adjustment as of July 1 following the opening date and each July 1 thereafter.

The Tribe has also agreed in the MOU to make annual recurring contributions of \$36,000 in order to mitigate potential impacts of the proposed project on the groundwater basin by contributing to MID groundwater recharge efforts. Both parties agree that the amount of this contribution is sufficient to compensate MID to provide recharge for up to 450 acre feet of annual water usage on the Madera site. According to the MOU, the dollar amount of each recurring contribution is subject to an annual CPI adjustment as of July 1 following the opening date and each July 1 thereafter. The Tribe further agrees to monitor its water usage and report water usage to MID annually. Should annual water usage by the Tribe exceed 450 acre feet, within 30 days of MID's notification of the exceedance, the Tribe agrees to ensure additional the difference between the actual water usage and 450 acre feet is recharged in the MID groundwater recharge system.

Non-Monetary Covenants

If an on-site WWTP is utilized, the Tribe agrees that it will be an immersed membrane bioreactor system, or a similar system to provide tertiary-treated water for reuse or disposal. The Tribe

further agrees that the treated effluent will comply with California Department of Health Services' regulations under Title 22, Division 4, Chapter 3 of the California Administrative Code and the Regional Water Quality Control Board Basin Plan. The Tribe also agrees to incorporate measures to minimize wastewater flows and to use reclaimed water for purposes such as toilet flushing and landscape irrigation. Should surplus reclaimed water be available, the Tribe agrees to make this water available for purchase by MID. Finally, the Tribe agrees to consult with MID before disposing of any remaining treated effluent that is not reclaimed or purchased by MID and to take whatever mutually agreeable actions are necessary to mitigate any identified impacts to MID's operations from the disposal.

In the MOU, the Tribe "recognizes the importance of agriculture to the economy of Madera County and supports the operation of properly conducted agricultural operations within the County of Madera." The Tribe further "acknowledges the possible inconvenience or discomfort arising from such operations, including, but not limited to, noise, odors, fumes, dust, smoke, insects, operation of machinery (including aircraft) during any 24 hour period, storage and disposal of manure, and the application by spraying or otherwise of chemical fertilizers, soil amendments, herbicides and pesticides." The Tribe agrees to "accept such inconveniences or discomfort as a normal and necessary aspect of operating the Project in a County where agriculture is the primary economic engine and recognizes the right of farms and agricultural operations located near the Facility to engage in agricultural activities for commercial purposes in a manner consistent with proper and accepted customs and standards without incurring liability for nuisance as set forth under California Civil Code Section 3482.5." The Tribe further notes that it has no "jurisdiction, intent, or inherent sovereign powers" to interfere with the right to farm.

In addition to preserving the right to farm, the Tribe agrees to promote local agriculture by establishing arrangements with local providers for the sale and purchase of local agricultural products and establishing an agricultural demonstration project for educational purposes on the Madera site. In order to "facilitate a constructive and mutually beneficial relationship between the Tribe and the local agricultural community" the Tribe and MID agree to establish an advisory committee to advise the Tribe in the development and implementation of the Tribe's efforts to promote agriculture. The committee would be composed of at least one representative of MID and one of the Tribe and could be expanded upon the mutual agreement of the Tribe and MID to include representatives from interested agencies and organizations with expertise in agricultural production, commerce, or education, such as the Madera County Farm Bureau.

In the MOU the Tribe recognizes MID's existing easements, rights of way, and rights to maintain and operate its irrigation canals and pipelines, which encumber portions of the Madera site. The MOU notes that the fee-to-trust transfer would not impact MID's right with respect to the encumbrances since they run with the land.

The Tribe retains the right to request renegotiation of the MOU's terms if there is a change in circumstances that results in a permanent and significant reduction (a reduction of at least 30 percent) in the amount of water consumed on the Madera site. MID retains the right to request renegotiation of the MOU's terms in the event the annual water usage exceeds 525 acre feet.

TRIBAL LABOR AGREEMENTS

On September 6, 2005, the Tribe entered into an agreement with the Fresno, Madera, Kings and Tulare Counties Building and Construction Trades Council and its affiliated local unions to establish provisions for construction employees hired by the Tribe. Under the agreement, the Tribe would exercise control over the development site and retain overall authority for the construction of the casino, hotel, and related amenities. The agreement covers, "all on-site construction, alteration, painting or repair of buildings, structures and other works and related activities for the project which is within the craft jurisdiction of one of the Unions and which is directly or indirectly part of the project" (Project Labor Agreement, 2005). This agreement is applicable to all manual labor employees hired during the construction phase of the development of the casino/hotel project on the Madera site. A copy of this agreement is provided in **Appendix C**.

Similarly, on January 31, 2006, the Tribe entered into a Memorandum of Agreement (MOA) with the Union of Needletrades, Industrial and Textile Employees (UNITE) and Hotel Employees and Restaurant Employees (H.E.R.E.) International Union (UNITE HERE), AFL-CIO. The agreement establishes terms and conditions that the Tribe shall comply with regarding the unionization of future eligible employees hired during the operation of the proposed development. The purpose of this agreement is to provide that casino and hotel employees have the ability to exercise their rights under the Tribal Labor Relations Ordinance, which shall be adopted by the Tribe and is similar to Tribal Labor Relations Ordinances (Exhibit D of **Appendix Y**) attached to Compacts between the state and certain tribes in California (MOA, 2006). This agreement is only applicable to casino and hotel employees for the alternatives proposed on the Madera site. Additionally, the Tribe has agreed to a "Card Check Recognition Procedure" to validate the status of eligible employees as Union members. These agreements are also provided in **Appendix C**.

2.2.11 TRIBAL-STATE COMPACT

IGRA requires that a Tribal-State Compact (Compact) be established prior to initiation of Class III gaming on tribal lands (25 U.S.C. § 2710(d)(3)(A)). The Compact between the North Fork Band of Mono Indians and the State of California has been signed by the Governor, but has not yet been ratified by the Legislature (**Appendix X**). Once ratified, the Compact will be a legally binding government-to-government contract that describes the terms and conditions for conducting gaming. The Compact states, "this Compact protects the interests of the Tribe and its members, the surrounding community, and the California public, and will promote and secure long-term stability, mutual respect, and mutual benefits."

In addition to the terms in the Compact providing for revenue sharing with the State, the Tribe has agreed to revenue sharing for the Wiyot Tribe. Thus, the related Wiyot Compact is also included within **Appendix X**. It provides compensation for the Wiyot Tribe (in the form of revenue sharing from the North Fork Tribe) for its decision to forgo gaming on its environmentally sensitive tribal reservation land adjacent to the Humboldt Bay National Wildlife Refuge.

Table 2-2 provides an outline of the terms of the Compact.

TABLE 2-2
TRIBAL-STATE COMPACT

Category	Summary of Agreement Terms	Location in Compact Article Section
Gaming Authorization:		
	Authorization to engage in specific Class III gaming.	3.1
	The Tribe is entitled to operate 2000 Gaming Devices, with additional 500 machines allowed if a new MOU is negotiated between Tribe and Madera County.	4.1 , 11.8.9
	In the event the Secretary of Interior makes the determination that a casino on the Madera site would be in the best interest of the Tribe and the not detrimental to the surrounding community, the Governor anticipates concurring in that determination as long as; <ul style="list-style-type: none"> • Madera County Board of Supervisors has approved the casino's location, and • The affected local community's support for the casino has been demonstrated to the satisfaction of the Governor pursuant to a telephone survey. 	4.2
	The Tribe shall comply with an adopted Gaming Ordinance approved by the IGRA, with all rules, regulations, procedures, specifications, and standards adopted by the NIGC, Tribal Gaming Agency, and the provisions of this Compact. A copy of this Tribal Gaming Ordinance shall be sent to the California Gambling Control Commission.	6.1
	The Tribal Gaming Agency shall investigate any reported violation of this Compact and require the Tribe to correct the reported violation to the extent deemed necessary. Violations must be reported to the California Gambling Control Commission and the Division of Gambling Control within the California Department of Justice within ten days.	8.1
	The State Gaming Agency has the right to inspect the gaming facility, and all gaming operation or facility records relating to Class III gaming. Inspections of the gaming facility may occur at any time during regular business hours without prior notice.	8.3
	The State Gaming Agency may adopt regulations to supplement Tribal Gaming Agency regulations or to replace Tribal Gaming Agency regulations (for certain sections of the compact only) if it determines the Tribe's rules are ineffective. In circumstances that present an imminent threat to public health or safety, the State Gaming Agency may adopt a regulation that becomes effective immediately regardless of whether the Tribe's rule is deemed ineffective	9.6
	The Tribal-State Gaming Compact is in effect for State law purposes until December 31, 2028. No sooner than 18 months prior to the termination date, either party may request to enter into negotiations to extend this compact or enter into a new compact. Either party may bring an action in federal or state court for declaration that the other party has materially breached the compact	14.2 (a)(b)
	If the Tribal-State Gaming Compact does not take effect by December 31, 2010, or does not receive final federal and State approval necessary to make the land eligible for Class III gaming by that date, the Compact shall be deemed null and void unless the Tribe and the State agree to extend the date.	14.2 (c)(d)
	<u>The Tribe shall comply with standards that are no less stringent than those contained in the Minimum Internal Control Standards of the NIGC</u>	<u>9.1</u>
Tribal Responsibility:		
	Before the commencement of any Project, the Tribe shall cause to be prepared a tribal environmental impact report (TEIR), analyzing the potentially significant off-reservation impacts. Upon commencement of the draft TEIR, the Tribe shall issue a Notice of Preparation and Notice of Completion to the State Clearinghouse and	11.8.1, 11.8.2 , 11.8.3

	the to County for distribution to the public	
	The Tribe shall prepare, certify and make available to the County, the State Clearinghouse, and the State Gaming Agency at least 55 days before the completion of negotiations pursuant to section 11.8.7 a Final TEIR.	11.8.4
	<p>The Tribal Gaming Agency shall promulgate rules and regulations to enforce the terms of the Compact, of IGRA, of the NIGC regulations, and of the Tribal Gaming Ordinance and to protect the integrity of the gaming activities and operation. The rules shall include:</p> <ul style="list-style-type: none"> • Enforcement of relevant laws; • Physical safety of patrons and employees; • Safeguarding of assets; • Prevention of illegal activity within the gaming facility or with regard to the gaming operation; • Maintenance of a closed circuit television surveillance system consistent with industry standards for gaming facilities of the type and scale operated by the Tribe; • The recording of all occurrences within the gaming facility that deviate from all normal operating policies and procedures. The tribe must provide incident reports to the State describing these occurrences; • Establishment of employee procedures designed to prevent theft, cheating, fraud, etc.; • Maintain a list of persons barred from the gaming facility that pose a threat to the integrity of the gaming activities – the list will be regularly transmitted to the state and also given to the state at any time upon request; • The conduct of financial audits; • Rules, regulations, procedures, and odds of winning for each Class III game; • Specifications and standards to ensure that the method of play, odds, and payoff determinations are visibly displayed or available in writing; • Maintenance of a cashier's cage; • Specification of minimum staff and supervisory requirements, and • Technical standards and specs as required by the Compact. 	9.1
	The Tribe shall conduct its Gaming Activities pursuant to an internal control system that implements minimum internal control standards for Class II Gaming that are no less stringent than those contained in the Minimum Internal Control Standards of the NIGC (25 C.F.R. Part 542). Furthermore, the Tribe shall hire an independent certified public accountant at least annually to verify that the gaming operation is in compliance with the minimum internal control standards – the accountant's report shall be provided to the State.	9.1.1
	The Tribe shall take all reasonable steps to ensure that members of the Tribal Gaming Agency are free from corruption, undue influence, compromise, and conflicting interests in the conduct of their duties under this Compact.	9.5
	<p>The Tribal Gaming Agency shall promulgate regulations governing patron disputes over the play/operation/payout from any gaming activity. These regulations must meet certain listed minimum standards, including:</p> <ul style="list-style-type: none"> • A system for receiving, investigating and resolving complaints, ultimately leading to potential arbitration in some cases. 	10.0
	The Tribe shall not conduct Class III Gaming in a manner that endangers the public health, safety, or welfare (but nothing shall be construed to prevent the Tribe from allowing smoking).	12.1
	The Tribe shall comply with provisions of the Bank Secrecy Act, P.L. 91-508, October 26, 1970, 31 U.S.C. § 5311-5314, as amended, and all reporting requirements of the Internal Revenue Service, insofar as such provisions and reporting requirement are applicable to gambling establishments.	12.3 (j)
Revenue Contribution:		
	<p>The Tribe shall pay to the State of California, on a quarterly basis, the following percentages of net win (total amount wagered minus some costs and payouts):</p> <ul style="list-style-type: none"> • \$0-100 million – 13.5% • \$100-200 million – 18% • Over \$200 million – 22% 	4.3.3 (a)
	<p>The Tribe may deduct from the quarterly payments:</p> <ul style="list-style-type: none"> • Payments made by the Tribe pursuant to the County MOU up to \$4,035,000 annually, as adjusted by the consumer price index, and • Payments made by the Tribe pursuant to an intergovernmental agreement with Caltrans to mitigate off-reservation traffic impacts, provided that each quarterly deduction cannot exceed 2.5% of the quarterly net win. 	4.3.3 (c)
	The Tribe shall prepare a Quarterly Net Payment Report (certifying net win,	4.3.3(d)

	payments, and deductions) and submit it to the State with each quarterly payment.	
	The Tribe shall contract with an independent auditing firm to conduct an annual audit to be sent to the State. The State Gaming Agency may additionally audit Tribal net win and deduction calculations. If said audits reveal inaccuracies, the Tribe must immediately pay the amount of the resulting deficiency, or face potential injunctive relief.	4.3.3 (e)(f)
	The Tribe expressly consents to be sued in state or federal court and waives its right to assert sovereign immunity against the State of California in any such material breach of the contract.	4.3.3 (g)
Revenue Sharing with Non-Gaming Tribes:		
	<p>The Tribe shall pay into the "Revenue Sharing Trust Fund for the Benefit of The Wiyot Tribe", on a quarterly basis the following percentages of net win:</p> <ul style="list-style-type: none"> • \$0 -100 million – 2.5% • \$100-200 million – 3% • Over \$200 million – 3.5% <p>If the Tribal-State Compact between the State of California and The Wiyot Tribe is invalidated, the Tribe shall pay up to \$1,000,000 of these funds to the "Revenue Sharing Trust Fund", with the remainder going to the State. Quarterly and annual reports and audits are required similar to those pursuant to the revenue contributions to the State (Compact Section 4.3.3).</p>	5.2
	<p>After the 6th year of gaming operation of the casino, the Tribe shall pay the "Revenue Sharing Trust Fund" (for non-gaming and non-compact tribes) on a quarterly basis the following annual fees:</p> <ul style="list-style-type: none"> • Year 6 - \$200,000 • Year 7 - \$300,000 • Year 8 - \$400,000 • Year 9 - \$500,000 • Year 10 - \$750,000 • Year 11 and each succeeding year until 2028 - \$1,100,000 	5.3
Tribal Ownership and Control of Gaming Operation:		
	The Gaming Operations authorized under this Tribal-State Compact, shall be owned solely by the Tribe.	6.2
Prohibitions:		
	The Tribe shall prohibit persons under the age of 21 from being present in any area where gaming operations are occurring, unless the person is en route to a non-gaming area.	6.3 (a)
	The Tribe shall prohibit the sale, consumption, and possession of alcoholic beverages to any persons under the age of twenty-one (21), and shall prohibit the presence of other under 21 in any room or area where alcoholic beverages may be consumed, except to the extent permitted by the State Department of Alcoholic Beverage Control.	6.3 (b)
	Possession of firearms in the gaming facility is prohibited except for law enforcement personnel.	12.9
	The Tribe shall adopt and comply with State laws prohibiting a gambling enterprise from cashing any check drawn against a federal, state, county, or city fund, including but not limited to, Social Security, unemployment insurance, disability payments, or public assistance payments.	12.3 (g)
	The Tribe shall adopt and comply with State laws, if any, prohibiting a gambling or other enterprise from providing, allowing, contracting to provide, or arranging to provide alcoholic beverages, food, or lodging for no charge or at reduced prices as incentive or enticement.	12.3 (h)
	The Tribe shall adopt and comply with State laws, if any, prohibiting extensions of credit.	12.3 (i)
Design and Building Requirements:		
	The construction, expansion, improvement, or maintenance of the gaming facility shall meet or exceed the California Building Code and California Public Safety Code applicable to Madera County (CA Code of Regulations Title 19 and 24).	6.4.2 (a)
	The Tribe shall hire qualified plan checkers, review firms, and project inspectors to check consistency with applicable codes in any instance where a permit would normally be required. The State will be notified of any failure to comply.	6.4.2 (b)
	The Tribe shall provide the State Designated Agency with appropriate construction planning calculations, plans, and specifications within 15 days of the final plan check. Any additional changes within the Design and Building Plans must be sent to appropriate State Agency for review.	6.4.2 (c)

	The Tribe shall ensure the gaming facility meets all CA Code Title 19 fire suppression and fire/life safety requirements. Prior to occupancy and biennially thereafter the casino shall be inspected by an independent expert to certify that the casino meets a reasonable standard of fire and life safety. The State can have a representative present during these inspections. The Tribe shall correct any deficiencies identified – failure to do so could result in closure of the affected portion of the facility until corrected.	6.4.2 (h)
Emergency Services:		
	The Tribe shall make reasonable provisions for adequate emergency fire, medical, and related relief and disaster services for patrons and employees of the Gaming Facility.	12.7
Problem Gambling:		
	<p>The Tribe shall establish a program to mitigate pathological and problem gambling by implementing the following measures:</p> <ul style="list-style-type: none"> • Train supervisors/employees to identify and manage problem gambling; • Make educational and information materials on problem gambling (including a toll free help line number and other info on where to find assistance) available to patrons at conspicuous locations and ATMs in the gaming facility; • Establish self exclusion programs where a problem gambler may request the halt of promotional mailings, the revocation of privileges for casino services, the denial or restraint on the issuance of credit and check cashing services, and the exclusion from the gaming facility; • Establish an involuntary exclusion program to patrons that have exhibited signs of problem gambling; • Make diligent efforts to prevent underage individuals from loitering in the area where gaming activities take place; • Ensure that advertising/marketing contains a not false/misleading claims, contains a responsible gambling message and a toll-free help line number (where practical); and • Adopt a code of conduct derived from that of the American Gaming Association that addresses responsible gambling and responsible advertising 	9.2
Civil and Criminal Jurisdiction:		
	All State and local law enforcement agencies and State courts shall exercise jurisdiction to enforce the State's criminal laws within the site, to the fullest extent permitted by Public Law 280.	9.4
Health, Safety, and Labor Standards		
	The Tribe agrees to provide a non-smoking area in the Gaming Facility and to utilize a ventilation system throughout the Gaming Facility that exhausts tobacco smoke to the extent reasonably feasible under existing state-of-the-art technology, and further agrees not to offer or sell tobacco to anyone under eighteen (18) years of age.	12.2
	The Tribe shall adopt and comply with State public health standards for food and beverage handling, including inspections of services by health inspectors. Any report or other writing by said State, County, city or federal health inspectors shall be transmitted within twenty-four (24) hours to the State Gaming Agency and the Tribal Gaming Agency.	12.3 (a)
	The Tribe shall adopt and comply with federal water quality and safe drinking water standards applicable in California.	12.3 (b)
	The Tribe shall adopt and comply with federal and State workplace and occupational health and safety standards.	12.3 (d)
	Adopt and comply with tribal codes to the extent consistent with the provisions of this Compact and other applicable federal law regarding public health and safety.	12.3 (e)
	The Tribe shall adopt and comply with standards no less stringent than federal laws and state laws forbidding harassment, including sexual harassment, in the workplace, forbidding employers from discrimination in connection with the employment of persons to work or working for the Gaming Operation or in the Gaming Facility on the basis of race, color, religion, ancestry, national origin, gender, marital status, medical condition, sexual orientation, age, or disability.	12.3 (f)
	The Tribe shall adopt and comply with standards no less stringent than the standards of the Fair Labor Standards Act	12.3 (k)

	The Tribe shall maintain commercial general liability insurance consistent with industry standards for non-tribal casinos providing coverage of at least \$10,000,000 per occurrence for bodily injury, personal injury, and property damage. The Tribe shall waive its right to assert its sovereign immunity up to the limits of the policy provided that nothing requires the Tribe to agree to liability for punitive damage.	12.5 (a)
	California tort law will apply to all claims of bodily injury, property damage, or property damage for all claims related to operation of the casino. The Tribe will consent to binding arbitration.	12.5 (b)(d)
	The Tribe will participate in the State's workers' compensation program with respect to employees employed at the Gaming Facility. The Tribe consents to the jurisdiction of the Workers' Compensation Appeals Board and State courts for purposes of enforcement.	12.6 (a)
	The Tribe will participate in the State's program for providing unemployment compensation benefits and unemployment compensation disability benefits, including compliance with the California Unemployment Insurance Code and consents to the jurisdiction of the State agencies charged with enforcement of that Code and state courts.	12.6 (b)
	The Tribe shall withhold all taxes due to the State as provided in the California Unemployment Insurance Code and the Revenue and Taxation Code and forward those to the State.	12.6 (c)
	The Tribe shall comply with certain State earning withholding orders.	12.6 (d)
	Tribal labor relations ordinance must be adopted prior to Gaming Facility operation (see Ordinance below).	12.10
	Every Gaming Employee shall obtain a valid tribal gaming license and if applicable a State Gaming Agency determination of suitability.	6.4.3 (a, b, c)
	The Tribe shall not employ, or continue to employ, a person denied a determination of suitability by the State Gaming Agency.	6.4.3 (d)
	The Tribe shall adopt and comply with standards no less stringent than the standards of the Fair Labor Standards Act, 29 U.S.C. § 201, et seq., and the United States Department of Labor regulations implementing the Fair Labor Standards Act.	12.3 (k)
Intergovernmental Agreement:		
	Before the commencement of the project and no later than the issuance of the Final TEIR to the State Gaming Agency, the Tribe shall negotiate with the County to produce an enforceable written agreement with respect to the following matters: <ul style="list-style-type: none"> • Timely mitigation of any Significant Effect on the Off-Reservation Environment; • Compensation for law enforcement, fire protection, emergency medical services and any other public services to be provided by the County and its special districts. • Reasonable compensation for programs designed to address gambling addiction; • Mitigation of any effect on public safety attributable to the Project, including any compensation to the County as a consequence thereof. 	11.8.7 (a)
	Before the commencement of the project and no later than the issuance of the Final TEIR to the State Gaming Agency, the Tribe shall negotiate with the State Department of Transportation or the State Designated Agency (if one is designated) to create an enforceable written agreement to pay its fair share to timely mitigate the off-reservation traffic impacts to the State highway system and facilities where such impacts are attributable.	11.8.7 (c)
	The Tribe is not required to enter into any other intergovernmental agreements with a local governmental entity other than those set forth within this compact.	11.8.7 (d)
	If the Intergovernmental Agreement with the County is not entered within 55 days of the submission of the Final TEIR (or later if both parties agree), either party may demand binding arbitration	11.8.8
	The MOU negotiated with the County constitutes an Intergovernmental Agreement within the meaning of 11.8.7 but only if: <ul style="list-style-type: none"> • The initial building in which gaming activities and related hotel and restaurant facilities are located has a footprint of no more than 280,000 square feet and • The Tribe operates no more than 2,000 gaming devices (slot machines) 	11.8.9
Tribal Labor Relations Ordinance (Exhibit D)		
	Eligible employees shall have the right to self-organization, to form, to join, or assist employee organizations, to bargain collectively, and to engage in other concerted activities for the purpose of mutual aid or protection, including picketing and leafleting adjacent to the casino.	Exhibit D-Section 4
	It shall be deemed an unfair labor practice for the Tribe to:	Exhibit D-

	<ul style="list-style-type: none"> • Interfere with, restrain, or coerce eligible employees in the exercise of their rights, • Dominate or interfere with the formation or administration of any labor organization, • Discriminate against an employee because s/he has filed charges or given testimony under the ordinance, and • Refuse to bargain collectively. 	Section 5
	Access shall be granted to the labor organization for the purpose of organizing eligible employees provided that such activity doesn't interfere with patronage at the Facility.	Exhibit D- Section 8 (a)
Source: Tribal-State Compact (Appendix X).		

2.3 ALTERNATIVE B – REDUCED INTENSITY

Alternative B consists of a smaller-scale version of Alternative A, but without hotel or pool components. **Table 2-3** shows the breakdown of proposed uses with associated square footages for the proposed casino resort described as Alternative B. **Figure 2-10** shows the site plan for the proposed casino, including supporting facilities. The design of the casino would be very similar to that shown in **Figures 2-1** and **2-2**. The only difference would be the smaller scale of Alternative B, approximately 40 percent of the total square footage of the proposed project described as Alternative A.

Approximately 879 full-time employees and 139 part-time employees (or 962 full-time equivalents) are expected under Alternative B. Except for provisions related to revenues, Tribal-State Compact (or Secretarial procedures) requirements are not expected to differ from those of Alternative A. The opening date for the Alternative B casino resort is anticipated to be 2010. The Alternative B casino resort would be designed to incorporate fire protection features similar to those of Alternative A and consistent with the California Building Code. Vegetation in and around the developed areas would be irrigated and landscaped for aesthetic and fire protection values.

2.3.1 MANAGEMENT CONTRACT

Alternative B would require NIGC approval of a management contract between the Tribe and SC Madera Management, LLC before gaming could take place on the Madera site, as with Alternative A. In order to approve a contract, the NIGC must determine that the contract will not violate the law and that the contract meets certain requirements relating to term, management company payment, and protection of tribal authority. The NIGC also conducts extensive background checks of the management company's key personnel.

2.3.2 CASINO

The casino proposed as Alternative B would consist of a mixture of uses including a primary gaming area, a high-limit gaming area, a small retail area, and administrative facilities. Food and beverage facilities would be included in the casino, including a buffet, four bars, a food court, and three restaurants. The casino complex would also include entertainment facilities.

The casino gaming floor would encompass an area of 55,000 square feet. There are 17,000 square feet of circulation area proposed in association with the casino floor, along with approximately 2,000 square feet of high-limit gaming. There are 5,785 square feet of cage space proposed for the casino. Several restrooms and vestibules are also proposed in association with the casino complex, with a combined square footage of approximately 9,500 square feet.

Alcohol would be served throughout the casino including the gaming floor. Accordingly patrons would be required to be 21 years old or over. The Tribe would adopt a “Responsible Alcoholic Beverage Policy” that would include but not be limited to checking identification of patrons and refusing service to those who have had enough to drink. Smoking would be permitted within the casino, however; no-smoking sections would be provided.

2.3.3 PARKING

A total of 3,200 parking spaces would be provided to serve the patrons and employees of the Alternative B casino and supporting facilities. A multi-level parking structure would provide 2,000 parking spaces and would be located on the southern side of the casino. The remaining 1,200 parking spaces would be included as surface parking.

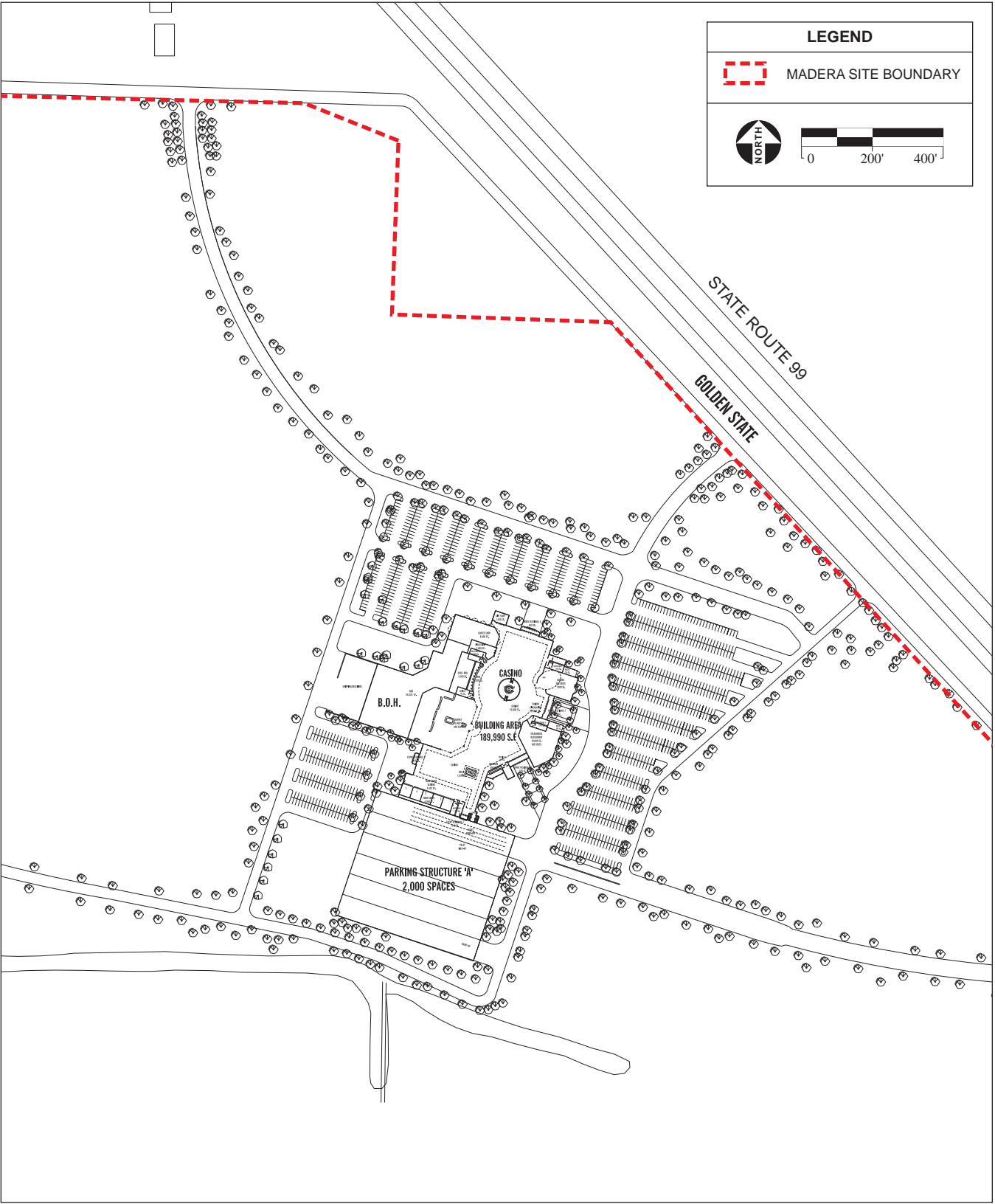
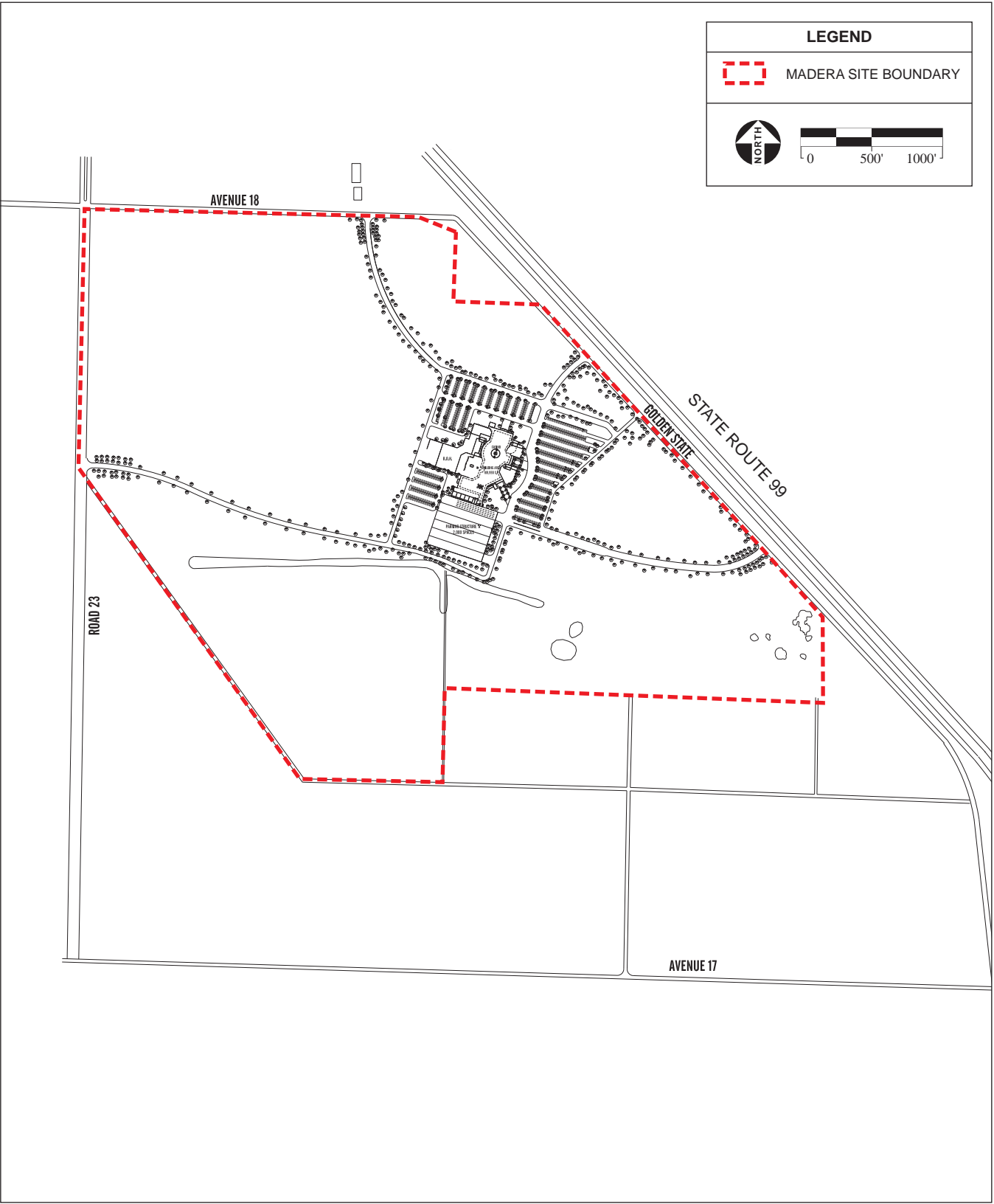
2.3.4 CONSTRUCTION AND GRADING

Alternative B would be constructed after the Madera site has been placed into Federal trust. Construction would take approximately one year and would involve earthwork; placement of concrete foundations; steel, wood, and concrete structural framing; masonry, electrical and mechanical work; building and site finishing; and paving, among other construction activities. The construction cost for Alternative B would be approximately \$212 million.

The Grading and Drainage Plan (**Appendix K**) incorporates fill to elevate the finished floor of the proposed public buildings approximately five feet above the FEMA 100-year floodplain. It is estimated that 150,000 cubic yards of earthwork would be required for Alternative B. It is anticipated that on-site grading would balance because soils excavated from the detention basins (see **Section 2.3.6**) would be sufficient to raise the proposed public buildings approximately five feet above the 100-year floodplain. A preliminary grading plan for Alternative B is included as **Figure 2-11**.

2.3.5 DRAINAGE

A Drainage Plan has been prepared for Alternative B (**Appendix K**) to manage surface water flow and prevent downstream impacts. The development of Alternative B would include several storm drainage improvements. Roof leaders would be connected directly to a below-ground pipe system, and parking lots would be constructed with a 1 percent minimum slope and 5 percent maximum slope toward the inlets.



SOURCE: Friedmutter Group, 2005; AES, 2006

Figure 2-10
Alternative B – Site Plan

Inlets would be placed at appropriate intervals to capture stormwater runoff and convey it to the grassy swales that surround the site. The grassy swales would accommodate overland drainage to allow the site to drain under overflow conditions. The overland drainage release would be around the perimeter of the site (**Figure 2-12**). The grassy swales would

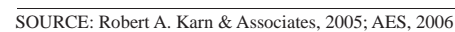
TABLE 2-3
ALTERNATIVE B – REDUCED INTENSITY COMPONENTS

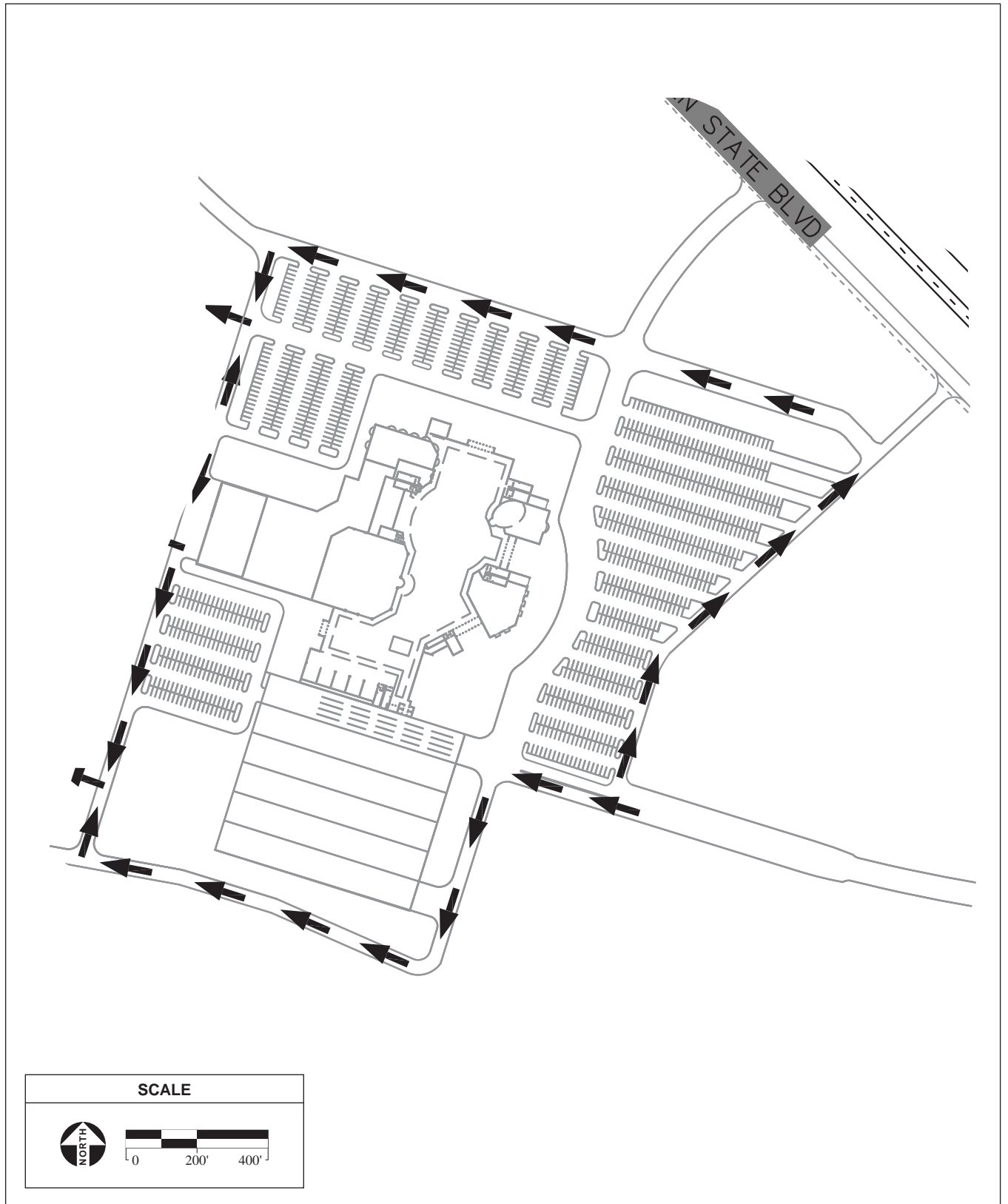
Area	Seats/Rooms/Parking Spaces	Square Footage
CASINO & ENTERTAINMENT		
Casino		
Casino Gaming		55,000
Casino Circulation		17,000
High Limit Gaming		2,000
Entry Vestibules (5 total)		3,395
Restrooms (4 total)		6,085
Rewards Center		990
Cage		5,758
Back of House		
Back of House		36,320
Loading Docks		1,505
Retail		
Gift Shop		1,185
Food & Beverage		
Buffet	400	18,830
Bars (2 total)		4,050
Service Bars (2 total)		1,710
Coffee Shop	225	8,800
Steakhouse	180	10,000
Food Court (5 tenants)	175	10,365
Entertainment		
Lounge	350	7,000
Total Casino & Entertainment Square Footage		189,990
CENTRAL PLANT		9,000
ALTERNATIVE B TOTAL SQUARE FOOTAGE		198,990
PARKING		
Surface Parking Spaces	1,200	
Parking Structure Spaced	2,000	
Alternative B Total Parking Spaces		3,200

NOTE: All figures are approximate.

SOURCE: Friedmutter Group, 2005; AES, 2005.

convey the stormwater to a series of stormwater detention basins (**Figures 2-5 and 2-6**). A total of 105 acre-feet of storage would be provided in the stormwater detention system to account for the increase in runoff created by increased impervious surfaces and encroachment of fill into the floodplain. The detention system would be identical to that proposed for Alternative A.





2.3.6 WASTEWATER TREATMENT AND DISPOSAL

As with Alternative A, several options exist for wastewater treatment and disposal, each complying with USEPA standards. Development of Alternative B would produce an average day flow of 160,000 gpd of wastewater. Weekend flows would typically be 210,000 gpd and weekday flows would average 140,000 gpd. See **Appendix I** for further discussion on flow rates and treatment options. Like Alternative A, wastewater may be treated at an on-site WWTP or at the City of Madera's WWTP. Design of an on-site WWTP and recycled water plan and connection plans for connection to the City of Madera WWTP would not differ from those of Alternative A, except where noted below.

Should an on-site WWTP be utilized, recycled water would be stored in a water storage tank, which would hold approximately 550,000 gallons and would be constructed of welded steel. A recycled water pump station, on-site landscape irrigation facilities, and dual plumbing facilities would be constructed for use of recycled water.

Treated effluent may be disposed of on-site via surface water disposal, sprayfields, leachfields, or a combination of these methods. Effluent disposal would be the same as described for Alternative A, except that the amount of effluent would be less. If treated effluent is disposed of via spray disposal, 18 acres of sprayfields and a 28 MG storage basin would be necessary or approximately one mile of recycled water line for irrigation of the City of Madera golf course. If treated effluent is disposed of by sub-surface disposal, 46 acres of leachfields and a 4 MG storage basin would be needed. If treated effluent is disposed of by a combination of spray and leach fields, 15 acres of disposal area and a 21 MG storage basin would be necessary. The location of the WWTP, the spray and leach fields, and the storage basin under each of these options are shown in **Figure 2-13**.

2.3.7 WATER SUPPLY

Alternative B would require less water than Alternative A. The estimated average water demand is 251,000 gpd / 174 gpm. Should an on-site WWTP be developed, recycled water would be used for indoor non-potable uses and for landscaping, dropping the average demand to approximately 166,000 gpd / 116 gpm. Water for domestic use, emergency supply, and fire protection would be provided by on-site wells or by a City of Madera looped system. Requirements for either water supply option are discussed in **Section 2.2.8** and in **Appendix I**. If water is provided wholly by on-site wells, additional facilities would include two on-site wells (one for continuous supply and one for redundancy in case of malfunction or maintenance of the primary well) with a capacity of either 174 (no water recycling) or 116 (with water recycling) gpm each, a 800,000 gallon steel water storage tank, and a water distribution system. Under the City of Madera option, water would primarily be supplied by an on-site 174 (no water recycling) or 116 (water recycling) gpm well with the City Well No. 26 utilized for redundancy, maintenance, and fire flow (a storage tank may be necessary if fire flow is not adequate). An iron and manganese treatment plant may be

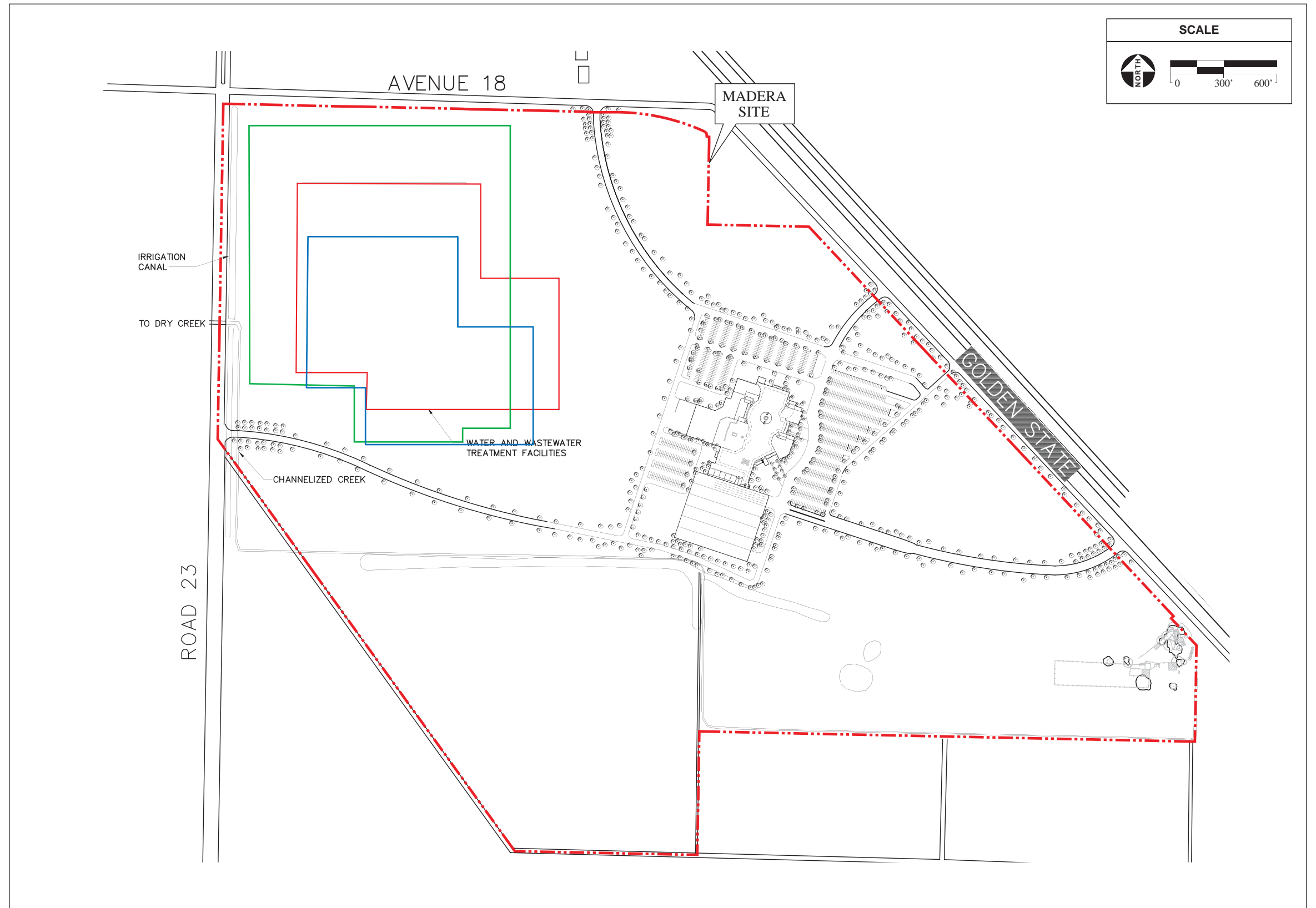
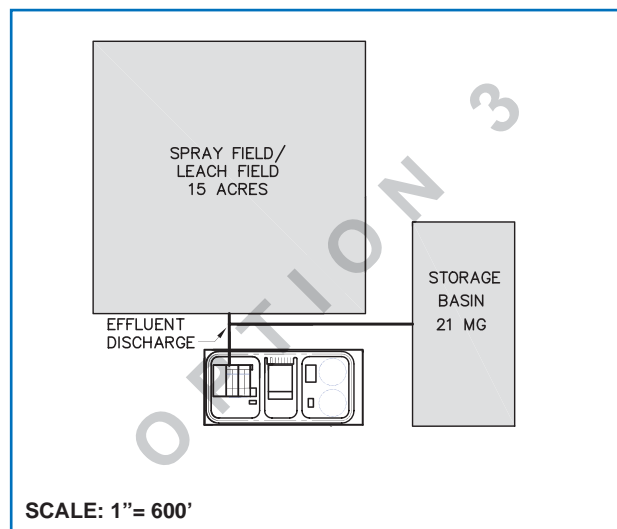
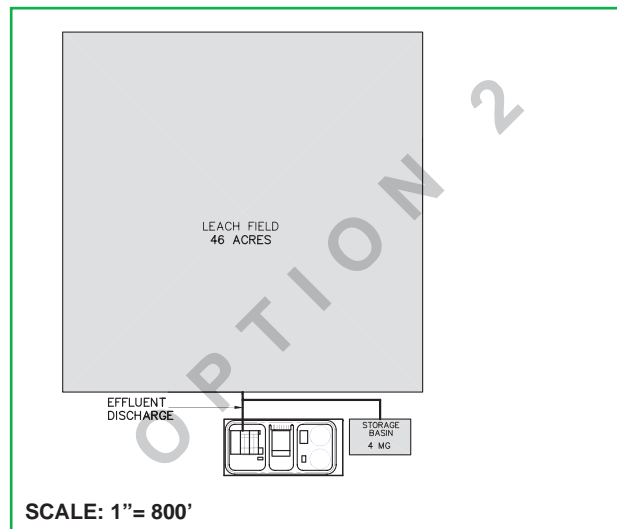
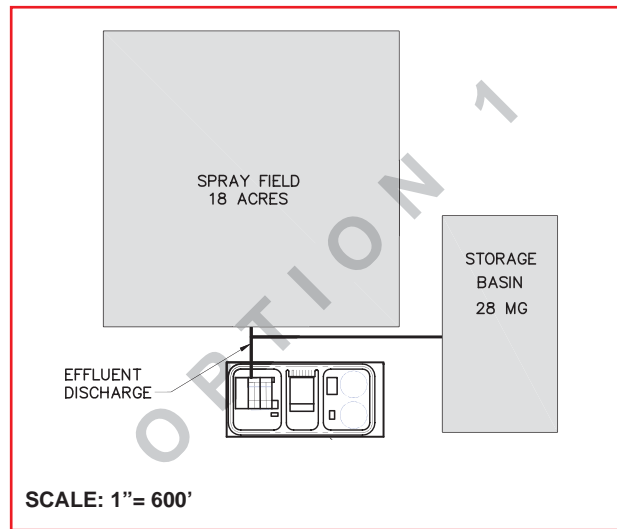


Figure 2-13
Alternative B – Alternative B - On Site Treated Effluent Discharge Options

necessary for treatment of water prior to use. As described under Alternative A, for on-site wells, the top of the well casing and wellhead facilities would be raised at least three feet over the base flood elevation to minimize potential risks of contaminating the drinking water supply during a flood event.

2.3.8 FUEL STORAGE

Fuel storage requirements would be similar, although reduced in size to those proposed in **Section 2.2.9** for Alternative A. Fuel storage practices would be similar to those proposed for Alternative A.

2.3.9 MEMORANDA OF UNDERSTANDING

The MOUs with the City, County, and MID described in **Section 2.2.10** would apply to the Alternative B development. However, given the reduced size and scope of the casino resort proposed for Alternative B (and resulting reduced impacts and revenues of the project, including over a 30 percent reduction in water usage), the Tribe would be expected to invoke the renegotiation provision of the MOUs. Given that it is not clear what terms would result after such renegotiation, for the purposes of this EIS it is assumed simply that the terms of the MOUs would not apply.

Provisions included within the Building and Construction Trades Council and UNITE HERE Labor Agreements, described in Section 2.2.10, additionally apply to Alternative B.

2.3.10 TRIBAL-STATE COMPACT

Provisions included within the Tribal-State Gaming, described in **Section 2.2.11**, apply to Alternative B.

2.4 ALTERNATIVE C – NON-GAMING USE

Alternative C consists of a mixed-use retail development. This development would include several larger retail outlet stores and smaller storefronts, including food and beverage establishments (**Table 2-4**). The land would be taken into Federal trust but no gaming would be associated with this alternative. The opening date for the Alternative C project is anticipated to be 2010.

The design of the proposed mixed-use retail development would incorporate built-in fire protection features including firebreaks and Type I or Type III non-combustible, fire-resistant construction. The retail development would be equipped with a hydraulically calculated automatic sprinkler system designed to comply with the California Building Code, and include an automatic fire detection and alarm system. These features would serve to automatically detect fires and notify emergency services, reducing the occurrence of a catastrophic event. Vegetation in and around the developed areas would be irrigated and landscaped for aesthetic and fire protection values.

TABLE 2-4
ALTERNATIVE C – RETAIL COMPONENTS

Area	Seats/Rooms/Parking Spaces	Square Footage
COMMERCIAL DEVELOPMENT		
Retail		
Retail Store #1		125,000
Retail Store #2		100,000
Retail		
Restaurant #1		5,000
Restaurant #2		4,000
Restaurant #3		3,000
ALTERNATIVE C TOTAL SQUARE FOOTAGE		237,000
PARKING		
Surface Parking Spaces	1,860	
Alternative C Total Parking Spaces	1,860	

NOTE: All figures are approximate.

SOURCE: Friedmutter Group, 2005; AES, 2005.

2.4.1 MANAGEMENT CONTRACT

Alternative C does not contain a gaming component and therefore would not require approval of a management contract by the NIGC.

2.4.2 COMMERCIAL DEVELOPMENT

The retail facilities proposed for Alternative C consist of two large “big box” retail stores, one at 125,000 square feet and the other at 100,000 square feet. Alternative C also consists of three restaurants, one consisting of 5,000 square feet, another of 4,000 square feet and the last one of 3,000 square feet. **Table 2-4** provides a breakdown of proposed uses with associated square footages for the proposed retail and restaurant facilities. **Figure 2-14** shows the site plan for the proposed commercial development under Alternative C. An architectural rendition is shown in **Figure 2-15**. The retail facilities would employ approximately 695 full-time equivalent employees and the restaurant facilities would employ approximately 80 full-time equivalent employees, for a total of approximately 775 employees. Since this alternative is a non-gaming use, the Tribe would not be required to comply with a Tribal-State Compact for Alternative C. It is expected that alcohol would potentially be served at the proposed restaurants, subject to Federal law and the

policies of the individual tenants. It is expected that smoking sections would be provided in restaurants, subject to Federal law and the policies of the individual tenants.

2.4.3 PARKING

A total of 1,860 parking spaces would be provided to serve the patrons and employees of the Alternative C commercial development. All parking provided would be surface parking.

2.4.4 CONSTRUCTION AND GRADING

Alternative C would be constructed after the Madera site has been placed into Federal trust. As with the other alternatives, construction activities are expected to take approximately one year and would involve earthwork; placement of concrete foundations; steel, wood, and concrete structural framing; masonry, electrical and mechanical work; building and site finishing; and paving, among other construction activities. Construction spending for Alternative C would be approximately \$31 million.

The Grading and Drainage Plan (**Appendix K**) incorporates fill to elevate the finished floor of the proposed public buildings approximately five feet above the FEMA 100-year floodplain. It is estimated that 170,000 cubic yards of earthwork would be required for Alternative C. It is anticipated that on-site grading would balance because soils excavated from the detention basins (**Section 2.4.6**) would be sufficient to raise the proposed public buildings approximately five feet above the 100-year floodplain. A preliminary grading plan for Alternative C is included as **Figure 2-16**.

2.4.5 DRAINAGE

A Drainage Plan has been prepared for Alternative C (**Appendix K**) to manage surface water flow and prevent downstream impacts. The development of Alternative C would include several storm drainage improvements. Roof leaders would be connected directly to a below-ground pipe system, and parking lots would be constructed with a 1 percent minimum slope and 5 percent maximum slope toward the inlets. Inlets would be placed at appropriate intervals to capture stormwater runoff and convey it to the grassy swales that surround the site. The grassy swales would accommodate overland drainage to allow the site to drain under overflow conditions. The overland drainage release would be around the perimeter of the site (**Figure 2-17**). The grassy swales would convey the stormwater to a series of stormwater detention basins (**Figures 2-5 and 2-6**). A total of 105 acre-feet of storage would be provided in the stormwater detention system to account for the increase in runoff created by increased impervious surfaces and encroachment of fill into the floodplain. The detention system would be identical to that proposed for Alternative A.

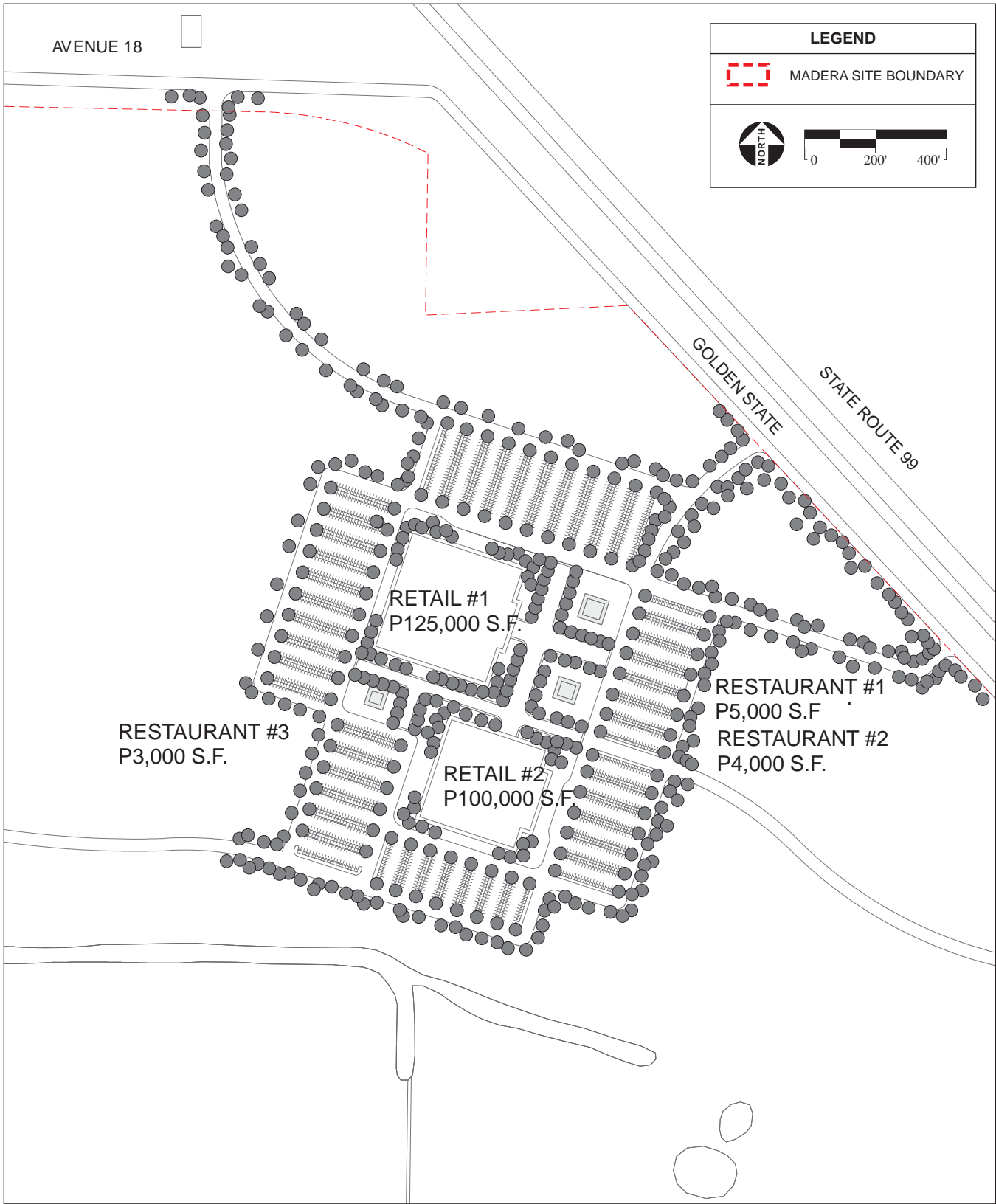
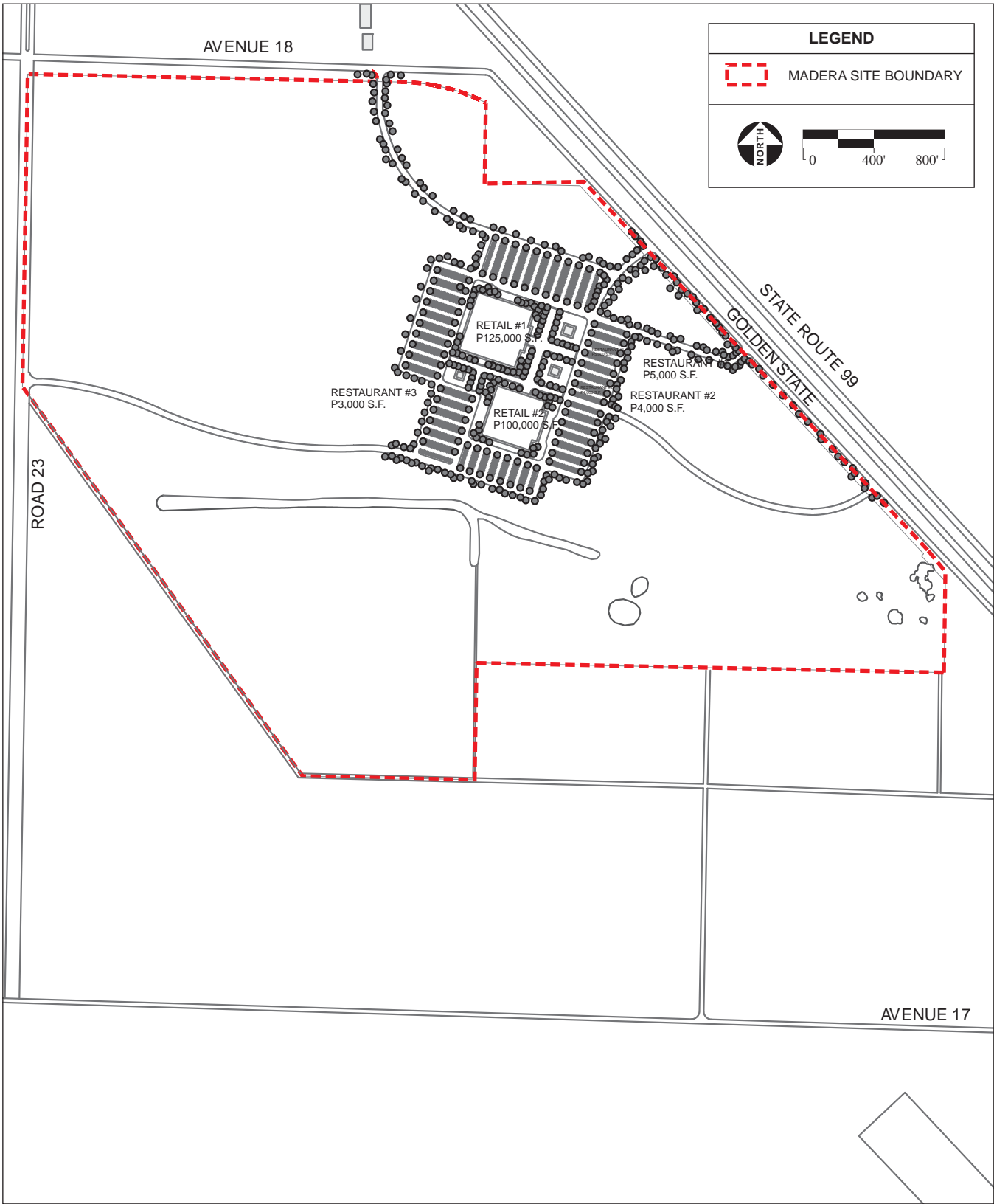
2.4.6 WASTEWATER TREATMENT AND DISPOSAL

As with Alternative A, several options exist for wastewater treatment and disposal, each complying with the standards noted for Alternative A. Development of Alternative C would produce an average day flow of approximately 18,000 gpd of wastewater. Weekend flows would typically be 25,000 gpd and weekday flows would average 15,000 gpd. See **Appendix I** for further discussion.

Like Alternative A, wastewater may be treated at an on-site WWTP or at the City of Madera's WWTP. Design of an on-site WWTP and recycled water plan and connection plans for connection to the City of Madera WWTP would not differ from those of Alternative A, except where noted below.

Should an on-site WWTP be utilized, recycled water would be stored in a water storage tank, which would hold approximately 100,000 gallons and would be constructed of welded steel. A recycled water pump station, on-site landscape irrigation facilities, and dual plumbing facilities would be constructed for use of recycled water.

Treated effluent may be disposed of via surface water disposal, sprayfields, leachfields, or a combination of spray and leach fields. Effluent disposal would be the same as that described in Alternative A, except that the amount of effluent would be much less. If treated effluent is disposed of by spray disposal, 2 acres of sprayfields and a 4 million gallon storage basin would be necessary or approximately 1 mile of recycled water line for irrigation of the City of Madera golf course. If treated effluent is disposed of by sub-surface disposal, 5 acres of leachfields and a 2 million gallon storage basin would be needed. If treated effluent is disposed of by a combination of spray and leach fields, 2 acres of disposal area and a 3 million gallon storage basin would be necessary. The location of the WWTP, the spray and leach fields, and the storage basin under each of these options are shown in **Figure 2-18**.

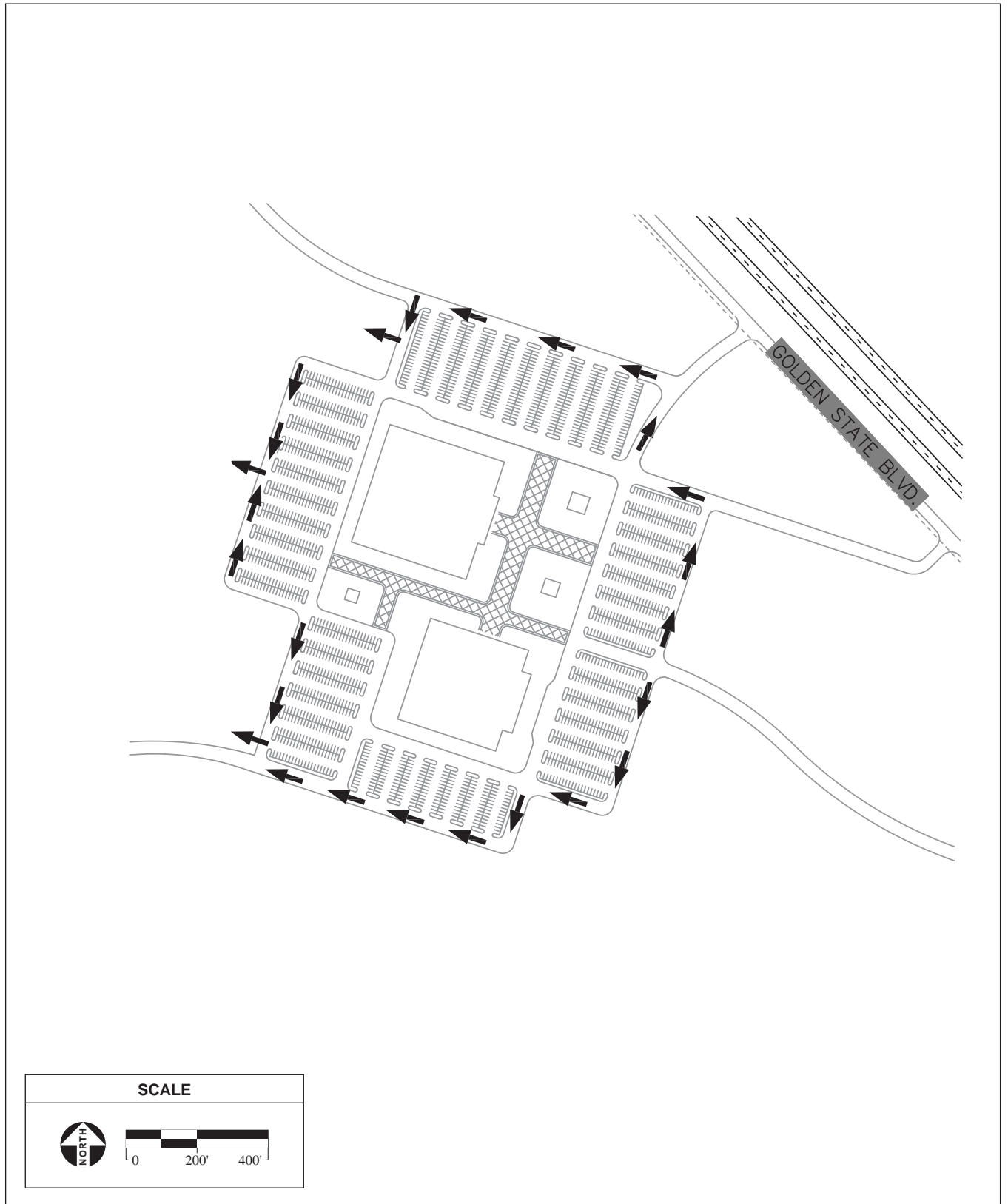




SOURCE: Friedmutter Group, 2005; AES, 2006

North Fork Casino EIS / 204502 ■

Figure 2-15
Alternative C – Architectural Rendition



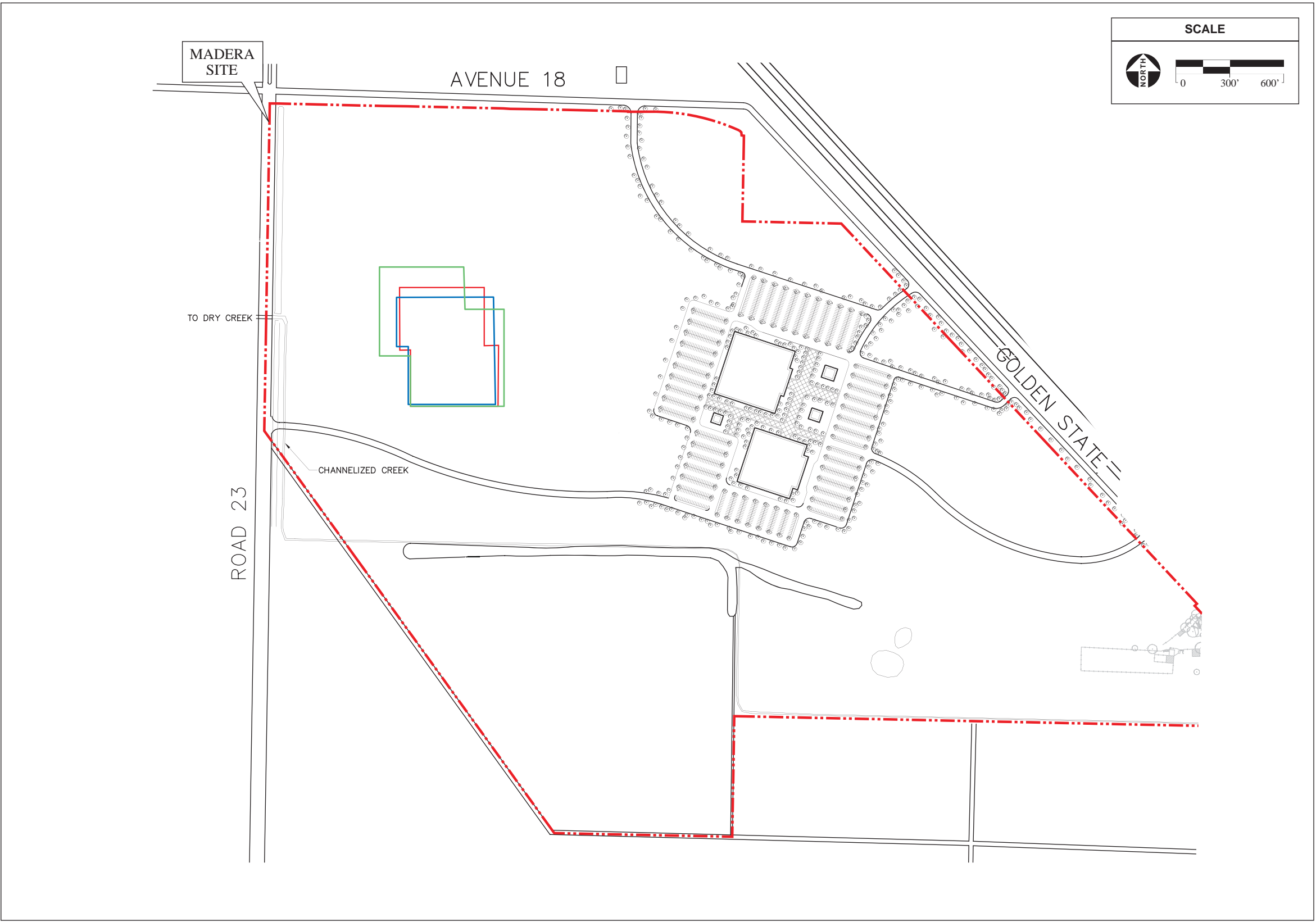
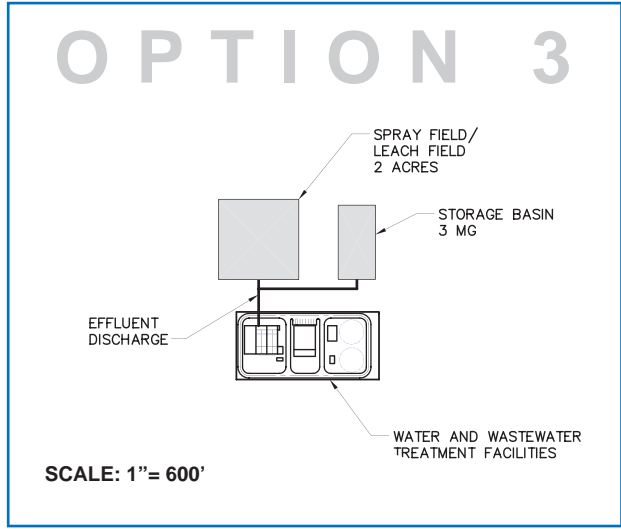
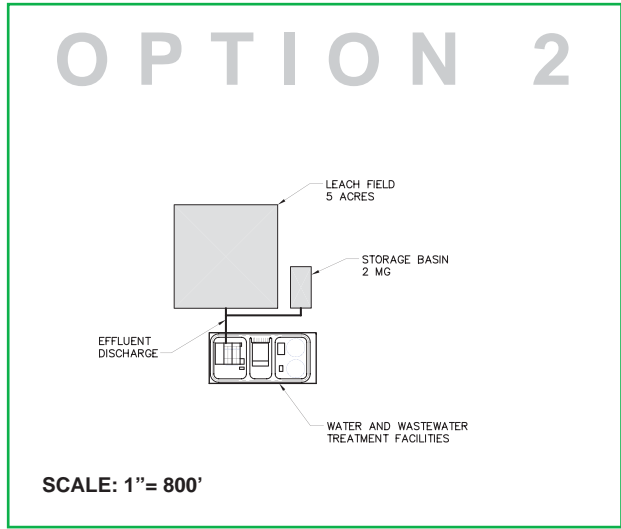
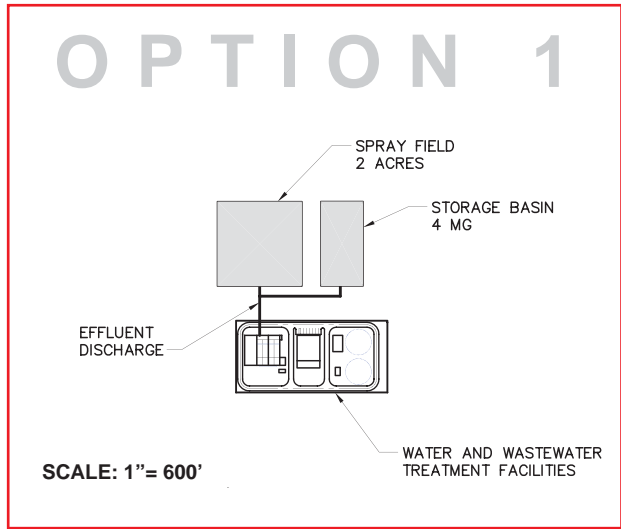


Figure 2-18
Alternative C – On-Site Treated Effluent Discharge Options

2.4.7 WATER SUPPLY

Alternative C would require much less water than Alternative A. The estimated water demand for Alternative C is 23,000 gpd / 16 gpm. Should an on-site WWTP be developed, recycled water would be used for indoor non-potable uses and for landscaping, dropping the average day demand to approximately 11,000 gpd / 8 gpm. Water for domestic use, emergency supply, and fire protection would be provided by on-site wells or by a City of Madera looped system.

Requirements for either water supply option are discussed in **Section 2.2.8** and in **Appendix I**. If water is provided wholly by on-site wells, additional facilities would include two on-site wells (one for continuous supply and one for redundancy in case of malfunction or maintenance of the primary well) with a capacity of either 16 (no water recycling) or 8 (with water recycling) gpm each, a 600,000-gallon steel water storage tank, and a water distribution system. Under the City of Madera option, water would primarily be supplied by an on-site 16 (no water recycling) or 8 (with water recycling) gpm well with the City Well No. 26 utilized for redundancy, maintenance, and fire flow (a storage tank may be necessary if fire flow is not adequate). An iron and manganese treatment plant may be necessary for treatment of water prior to use. As described under Alternative A, for on-site wells, the top of the well casing and wellhead facilities would be raised at least three feet over the base flood elevation to minimize potential risks of contaminating the drinking water supply during a flood event.

2.4.8 FUEL STORAGE

Fuel storage requirements would be similar, although reduced in size, when compared with those proposed in **Section 2.2.9** for Alternative A. Fuel storage practices would be similar to those proposed for Alternative A.

2.4.9 MEMORANDA OF UNDERSTANDING

Given the change in use proposed for Alternative C, the MOUs with the City, County and MID, and the Building and Construction Trades Council and UNITE HERE Labor Agreements described in **Section 2.2.10** would not apply.

2.4.10 TRIBAL-STATE COMPACT

Provisions within the Tribal-State Compact do not apply to Alternative C, as gaming activities would not be included within this alternative.

2.5 ALTERNATIVE D – NORTH FORK LOCATION

Alternative D would be located on the North Fork site (**Section 1.2.2**). Alternative D would require that the North Fork site be transferred from individual trust to Tribal trust status or the approval of a lease agreement between the individual trust beneficiaries and the Tribe. Alternative D would consist of a smaller-scale version of Alternative A, without retail, high limit gaming, entertainment, hotel, or pool components (see **Section 2.7.3** for a discussion of sizing the Alternative D components).

Table 2-5 shows the breakdown of proposed uses with associated square footages for Alternative D. **Figure 2-19** shows the site plan for the proposed casino, including supporting facilities. The design of the casino would differ from that of Alternative A in that it would be much smaller and it would be expected to be constructed as economically as possible. An architectural rendition can be found in **Figure 2-20**.

Approximately 139 full time employees and 23 part-time employees (or 153 full-time equivalents) are expected under Alternative D. ~~Except for provisions related to revenues, Tribal State Compact (or Secretarial procedures) requirements are not expected to differ from those of Alternative A.~~ The opening date for the Alternative D casino resort would be 2010. The Alternative D casino would be designed to incorporate Type I or Type III fire protection features similar to those of Alternative C and consistent with the California Building Code. Vegetation in and around the developed areas would be irrigated and landscaped for aesthetic and fire protection values.

2.5.1 MANAGEMENT CONTRACT

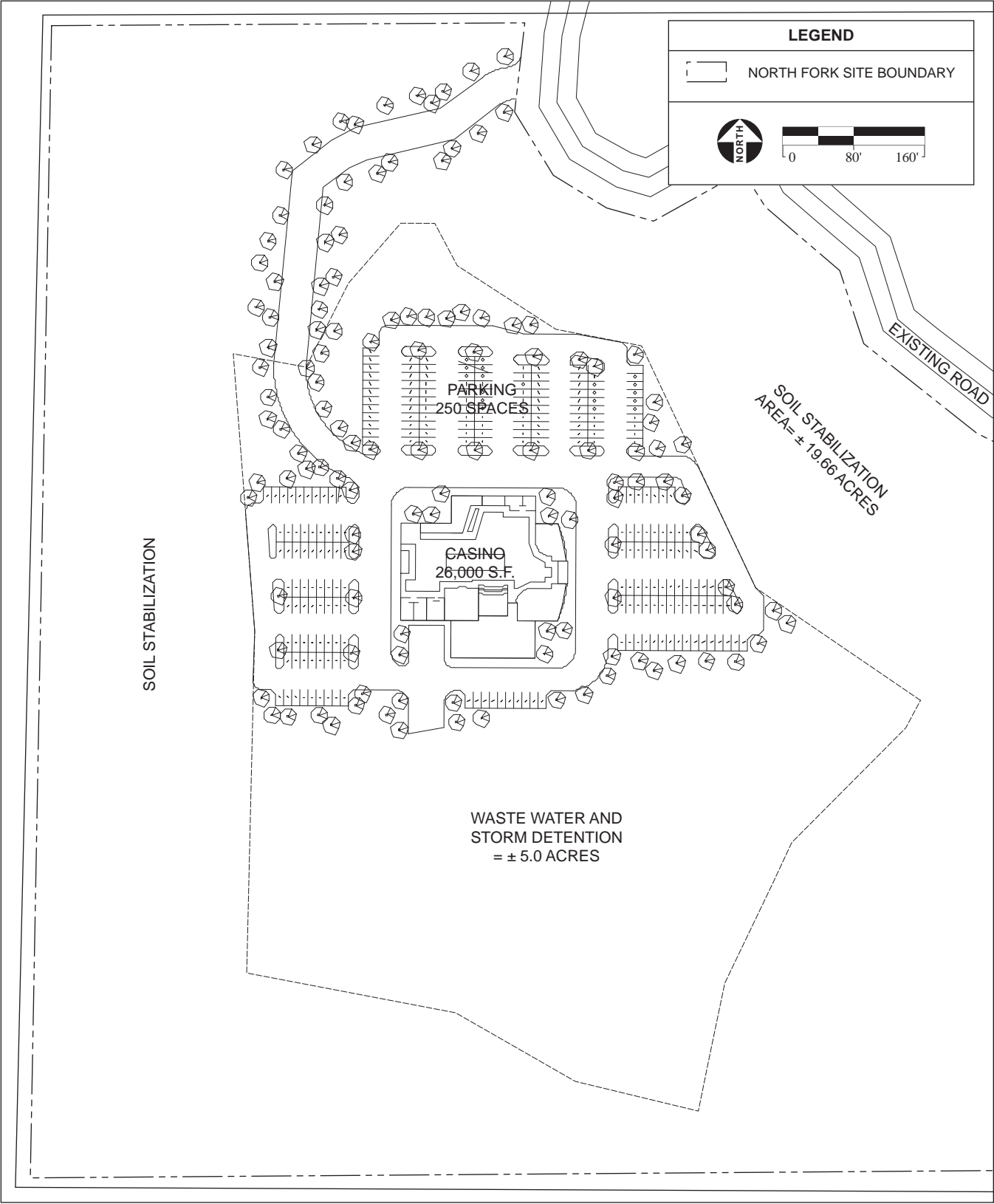
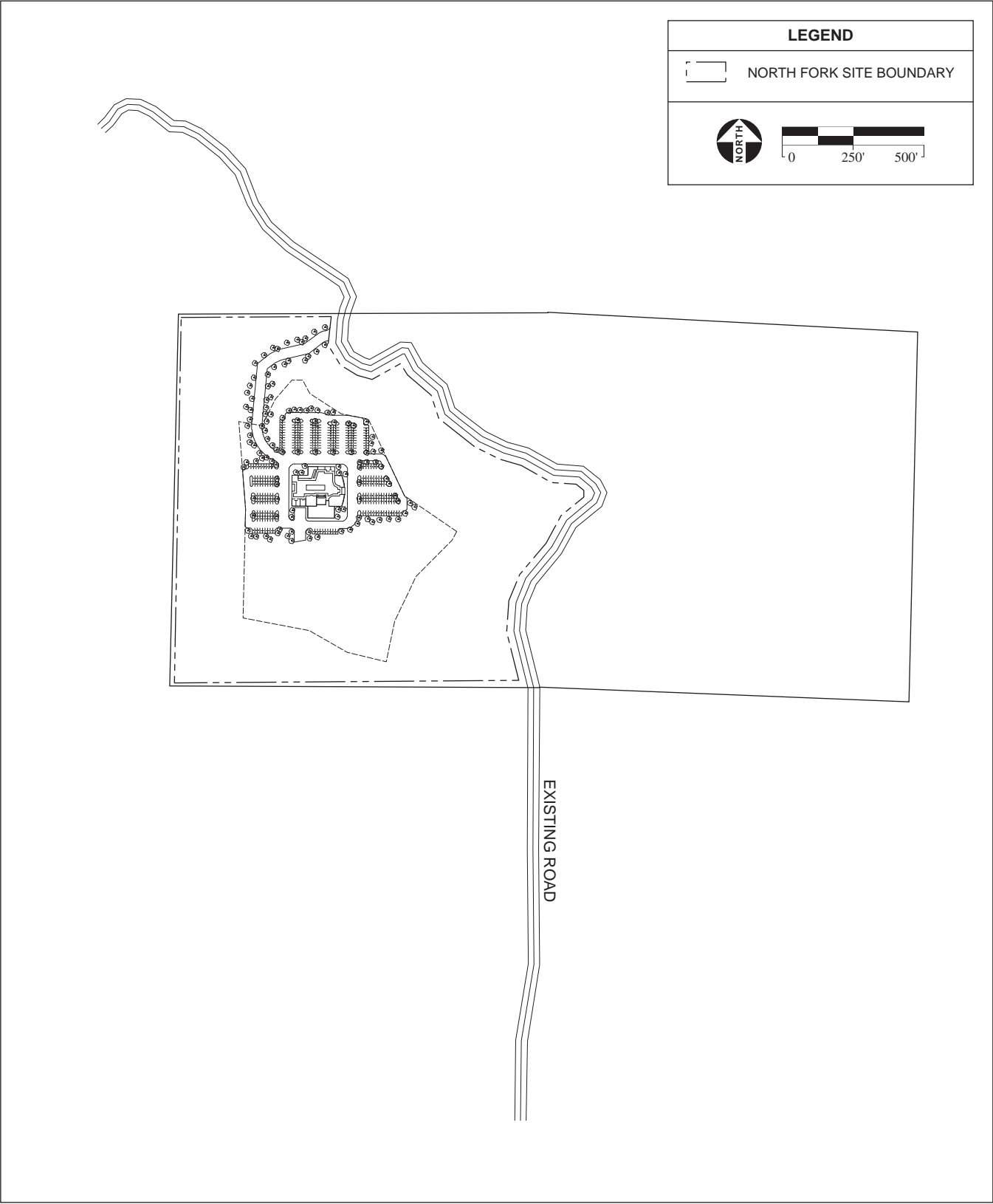
Alternative D would require NIGC approval of a management contract between the Tribe and SC Madera Management, LLC before gaming could take place on the North Fork site, as with Alternative A. In order to approve a contract, the NIGC must determine that the contract will not violate the law and that the contract meets certain requirements relating to term, management company payment, and protection of tribal authority. The NIGC also conducts extensive background checks of the management company's key personnel.

2.5.2 CASINO

Alternative D would consist of a mixture of uses including a primary gaming area and administrative facilities. Food and beverage facilities would be included in the casino, including a service bar, a coffee shop and a food court/deli. Also included in the casino square footage would be the casino floor, entryways, rewards center and the cage.

The casino gaming floor would encompass an area of 8,888 square feet. There are 2,963 square feet of circulation area proposed in association with the casino floor. There are 1,000 square feet of cage space proposed for the casino. Several restrooms and vestibules are also proposed in association with the casino complex, with a combined square footage of approximately 2,000 square feet.

Alcohol would be served throughout the casino including the gaming floor. Accordingly, patrons would be required to be 21 years old or over. The Tribe will adopt a "Responsible Alcoholic Beverage Policy" that will include but not be limited to checking identification of patrons and refusing service to those who appear to have had enough to drink. Smoking would be permitted within the casino.





SOURCE: Friedmutter Group, 2005; AES, 2006

North Fork Casino EIS / 204502 ■

Figure 2-20
Alternative D – Architectural Rendition

TABLE 2-5
ALTERNATIVE D – NORTH FORK LOCATION COMPONENTS

Area	Seats/Rooms/Parking Spaces	Square Footage
CASINO & ENTERTAINMENT		
Casino		
Casino Gaming		8,888
Casino Circulation		2,963
Entry Vestibules (3 total)		750
Restrooms (2 total)		1,250
Rewards Center		600
Cage		1,000
Back of House		
Back of House		6,000
Food and Beverage		
Service Bar		500
Coffee Shop	30	1,350
Food Court/Deli	60	2,700
ALTERNATIVE D TOTAL SQUARE FOOTAGE		26,001
PARKING		
Surface Parking Spaces	250	
Alternative D Total Parking Spaces	250	

NOTE: All figures are approximate.

SOURCE: Friedmutter Group, 2005; AES, 2005.

2.5.3 PARKING

Alternative D would include a total of 250 surface parking spaces to serve the patrons and employees of the casino and supporting facilities.

2.5.4 CONSTRUCTION AND GRADING

Alternative D would be constructed after the North Fork site is transferred from individual trust to Tribal trust, or a lease to allow on-site gaming occurs. Construction activities would take approximately six months and would involve earthwork; placement of concrete foundations; steel, wood, and concrete structural framing; masonry, electrical and mechanical work; building and site finishing; and paving, among other construction activities. Construction spending for Alternative D would be approximately \$41 million.

Unlike the Madera site, the current topography of the North Fork site would require a considerable amount of earthwork activity in order to obtain a level site. The Grading and Drainage Plan (**Appendix K**) indicates extensive cut and fill would be required to create a relatively flat surface for the development of a casino and related facilities. It is estimated that 600,000 cubic yards of earthwork would be required for Alternative D. A preliminary grading plan for Alternative D is included as **Figure 2-21**.



SOURCE: Robert A. Karn & Associates, 2005; AES, 2006

North Fork Casino EIS / 204502 ■

Figure 2-21
 Alternative D – Preliminary Grading Plan

2.5.5 DRAINAGE

A drainage plan has been prepared for Alternative D (**Appendix K**) to manage surface water flow and prevent downstream impacts. The development of Alternative D would include several storm drainage improvements. Roof leaders would be connected directly to a below-ground pipe system, and parking lots would be constructed with a 1 percent minimum slope and 5 percent maximum slope toward the inlets. Inlets would be placed at appropriate intervals to capture stormwater runoff and convey it to the grassy swales that surround the site. The grassy swales would accommodate overland drainage to allow the site to drain under overflow conditions. The overland drainage release would be around the perimeter of the site (**Figure 2-22**). The grassy swales would convey the stormwater to a stormwater detention basin (**Figure 2-23**). A total of 1 acre-foot of storage would be provided in the stormwater detention system to account for the increase in runoff created by increased impervious surfaces.

2.5.6 WASTEWATER TREATMENT AND DISPOSAL

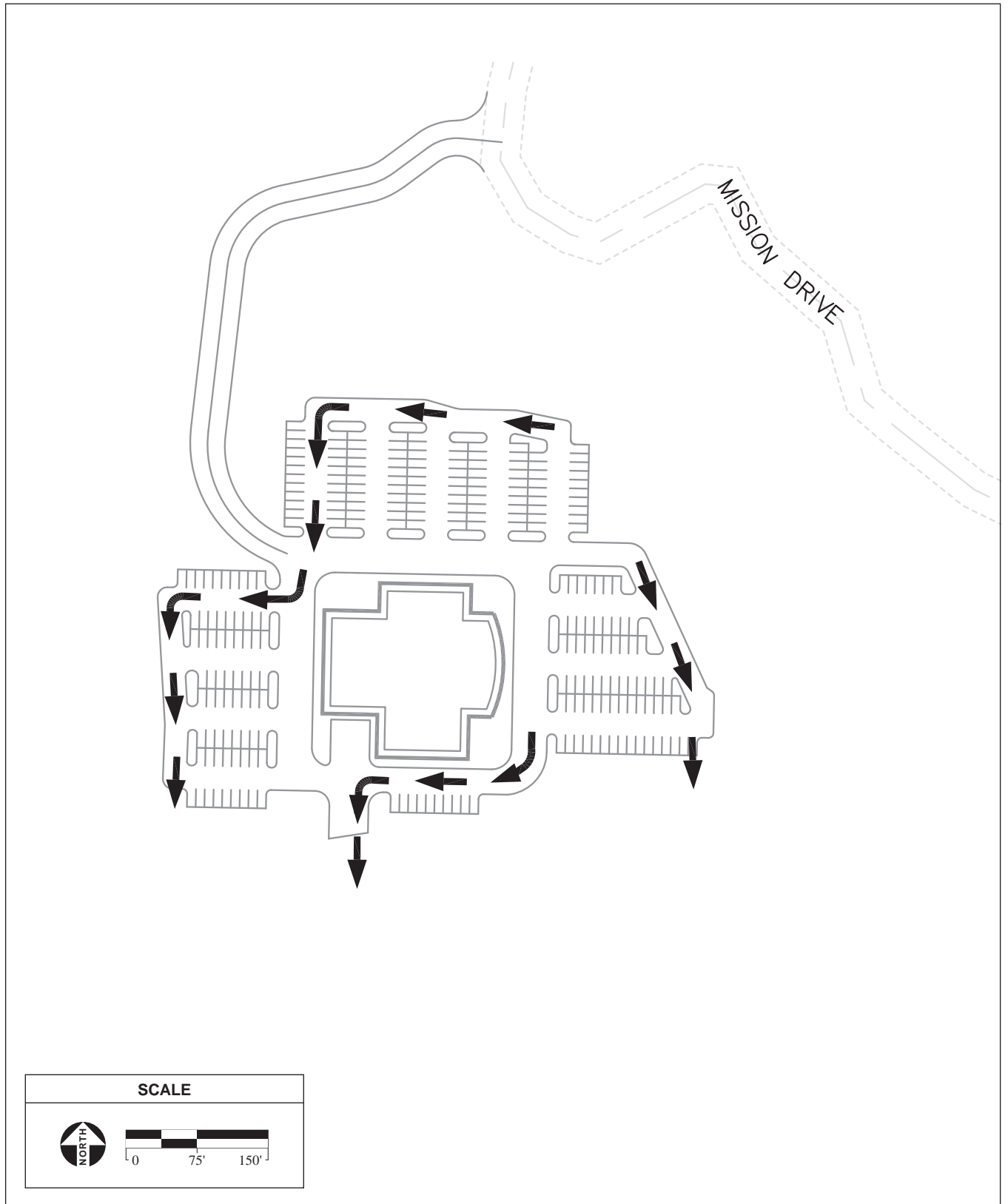
As with Alternative A, several options exist for wastewater treatment and disposal. Development of Alternative D would produce an average day flow of 22,000 gpd of wastewater. Weekend flows would typically be 30,000 gpd and weekday flows would average 19,000 gpd. See **Appendix I** for further discussion on flow rates and treatment options.

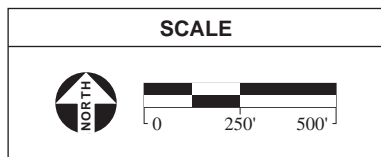
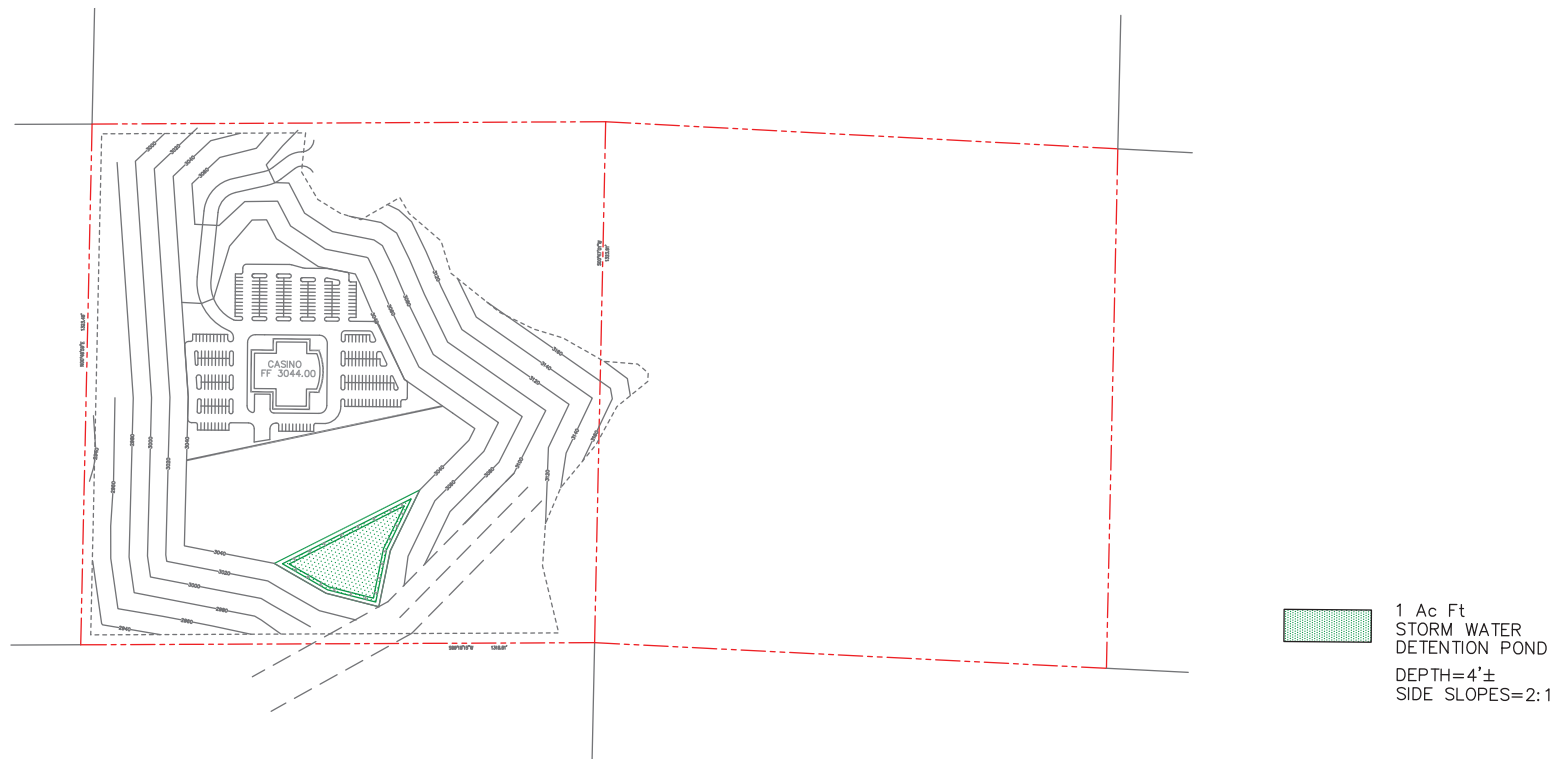
OFF-SITE WASTEWATER TREATMENT

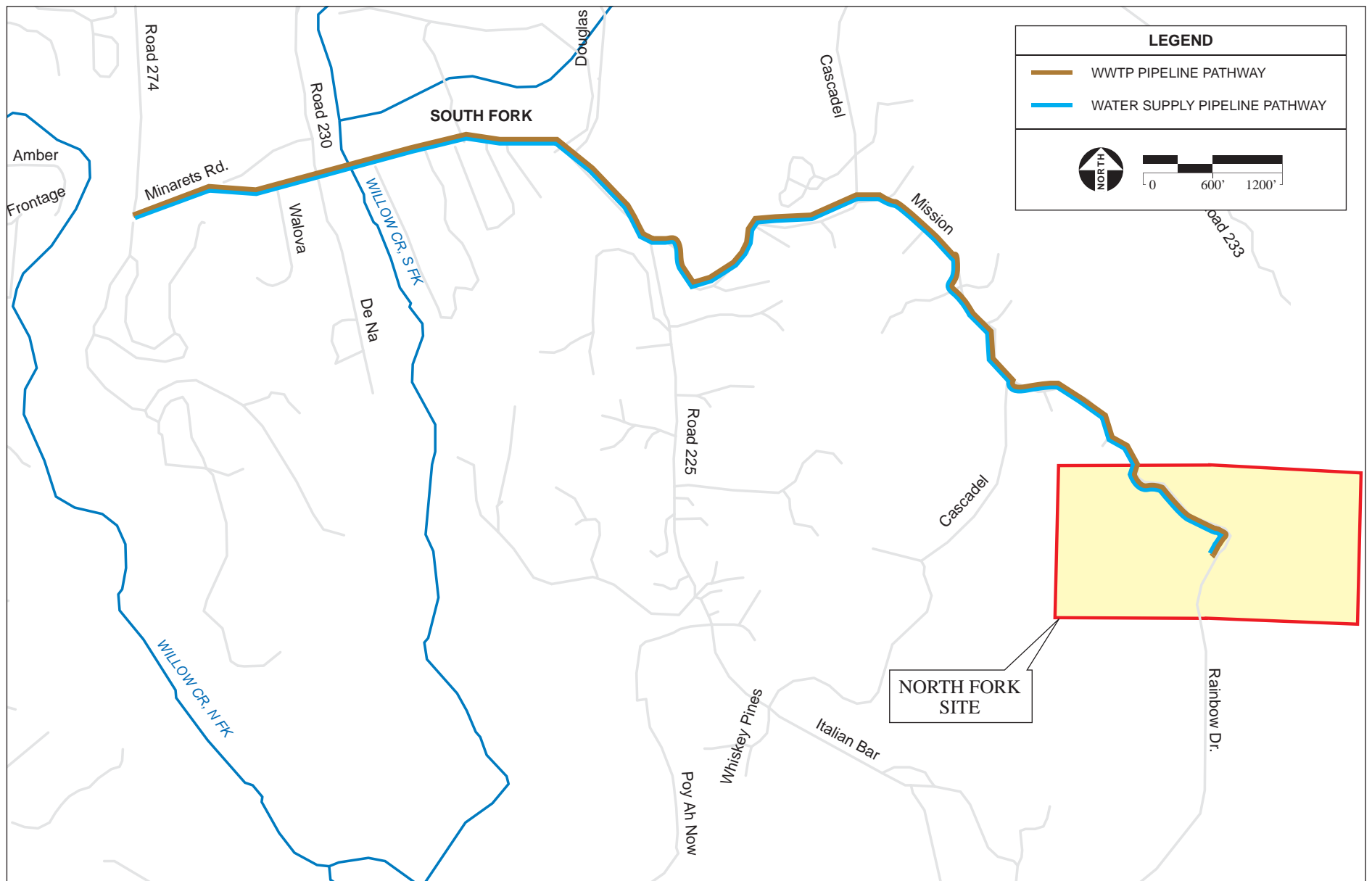
Wastewater treatment may occur at the County-operated WWTP that serves the Community of North Fork. This WWTP is located one mile northwest of the North Fork site (**Figure 2-24**). Wastewater would travel through a proposed pipeline along Minarets Road and then south on Highway 274 to the North Fork WWTP. The WWTP has a capacity of 31,000 gpd and is currently near capacity. However, plans are underway to expand the existing WWTP to a capacity of 60,000 gpd (Dunavan, 2004). 99 service connections and 22 standby connections are currently hooked up to the WWTP. Treatment plant facilities include a raw sewage pump station, extended aeration treatment facilities, chlorine disinfection, an effluent pump station, storage pond, and a distribution pump station. Sprayfields are currently utilized to dispose of disinfected effluent; the expanded WWTP will also utilize leachfields. Alternative D would increase flows to the WWTP and would bring the expanded WWTP close to capacity. Additional expansion of the WWTP would be necessary to allow further growth in the Community of North Fork. It is expected that a MOU would be negotiated with the County to allow for hook up to and expansion of wastewater treatment facilities.

ON-SITE WASTEWATER TREATMENT

Alternatively, wastewater may be treated at an on-site WWTP, located to the south of the casino (**Figure 2-25**). To meet the wastewater treatment criteria, the Tribal Government would use an



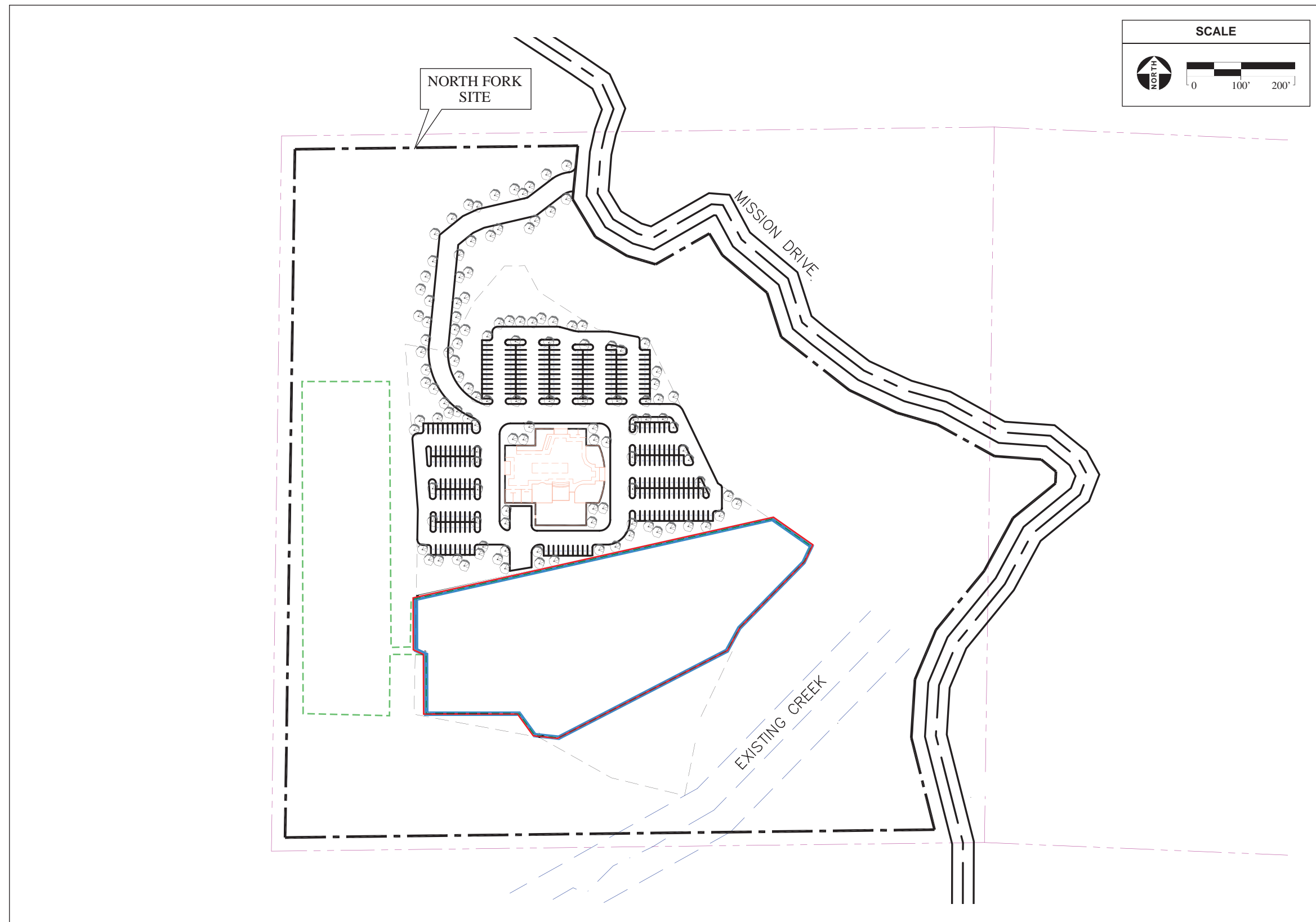
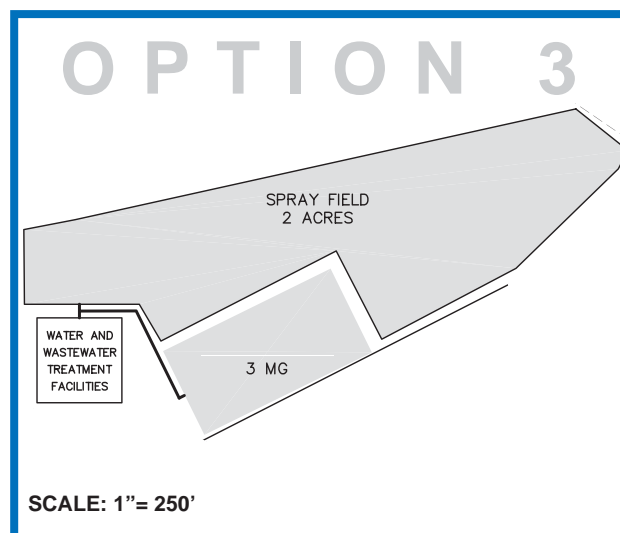
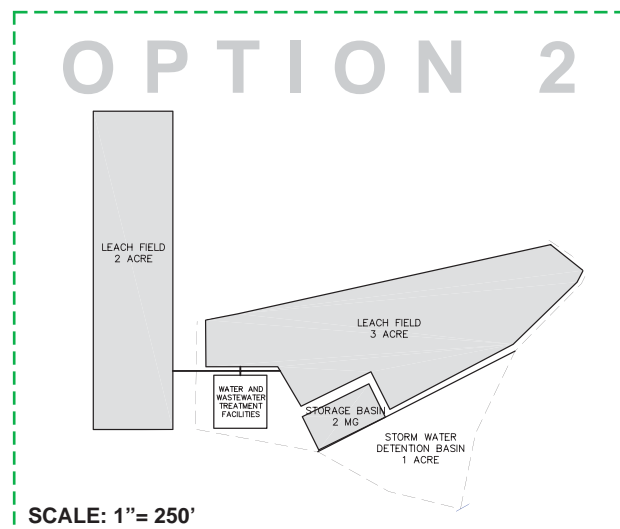
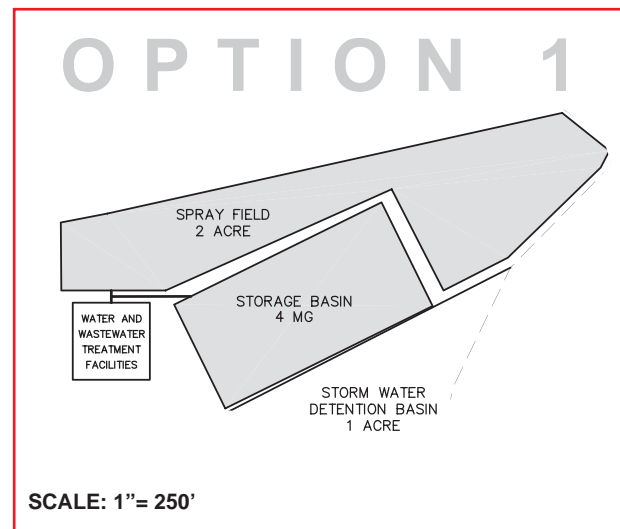




SOURCE: Hydrosience Engineers, 2005; AES, 2006

North Fork Casino EIS / 204502 ■

Figure 2-24
Alternative D – Municipal Water/Wastewater Options



immersed membrane bioreactor (MBR) system to provide the highest quality water for reuse or disposal, as discussed in **Section 2.2.7**. The location of the wastewater treatment facility would be determined by the treated effluent disposal method. A detailed description of the wastewater treatment facility is presented in **Appendix I**.

Reclaimed water from the on-site wastewater treatment plant would be utilized for casino toilet flushing and landscape irrigation. As described in **Section 2.2.7**, all water used for reclamation would meet Title 22 standards of the California Code of Regulations.

A pipeline would collect wastewater from the casino. A raw wastewater lift station could convey casino wastewater to the headworks of the WWTP. It is likely that a triplex sewage lift station would be used.

TREATED EFFLUENT REUSE FACILITIES

Effluent reuse would require a recycled water storage tank, a recycled water pump station, on-site landscape irrigation facilities, and dual plumbing. The purpose of the recycled water storage tank would be to provide equalization storage for on-site recycled water use for toilet flushing, on-site landscaping, and effluent discharge. Recycled water would also be used to supply water for fire protection, such as sprinkler systems and fire hydrants. For Alternative D, the recycled water storage tank would hold approximately 100,000 gallons and would be constructed of welded steel. A booster station may be required to maintain pressure in the recycled water distribution system.

The primary transmission line from the recycled water storage tank would supply the gaming facility and landscaping with recycled water. Surplus recycled water would be used for landscape irrigation or disposed of as discussed in the following section. In order to use recycled water for “in-building” purposes, the plumbing system within the building would have recycled water lines plumbed separately from the building’s potable water system with no cross connections. The dual plumbing systems would be distinctly marked and color-coded.

TREATED EFFLUENT DISPOSAL

The average day disposal flows would be approximately 30,000 gpd. Treated effluent may be discharged through surface water disposal, spray disposal, sub-surface disposal, or a combination of these methods.

Surface Water Disposal

An unnamed tributary of Willow Creek flows through the North Fork site. Willow Creek empties into the San Joaquin River, upstream of Millerton Lake. The designated beneficial uses of the San Joaquin River include use as a surface water body for municipalities, communities, industries, and warm freshwater habitat. The San Joaquin River is designated as part of the RWQCB’s 303(d) listing of impaired water bodies. The unnamed tributary is the proposed discharge point and is

located within the North Fork site. In order to discharge effluent to the tributary, an NPDES permit would be required. Since the point of discharge is fully contained within trust lands, the NPDES permit would be issued and regulated by the USEPA.

Sprayfield Disposal

The location of the wastewater treatment plant and spray fields is shown in **Figure 2-25**. Under this option, 2 acres of land in the southern corner of the North Fork site would be used for spray disposal. A seasonal storage basin would be located near the WWTP and would hold 4 MG of treated effluent.

Sub-Surface Disposal

Leachfields may be used to dispose of treated wastewater effluent. The location of the wastewater treatment plant and leach fields is shown in **Figure 2-25**. A maximum of 5 acres of leachfields would be required for effluent disposal. A seasonal storage basin would contain 2 MG of treated effluent. Field-testing would be required to determine if any portions of the North Fork site are not conducive to leachfields.

Combination of Surface and Sub-Surface Disposal

Under this option, sprayfields would be used in conjunction with leachfields. The combined area would be approximately 2 acres. A seasonal storage basin would also be required to hold 3 MG. The location of the WWTP and combination spray and leach fields is shown in **Figure 2-25**.

2.5.7 WATER SUPPLY

Water demands from the Alternative D facilities are estimated to be 27,000 gpd / 19 gpm. Should an on-site WWTP be developed, recycled water would be used for indoor non-potable uses and for landscaping, dropping the average day demand to 14,000 gpd / 10 gpm.

Water for domestic use, emergency supply, and fire protection would be provided by on-site groundwater or by Madera County. The Madera County Maintenance District 8A provides water to the town of North Fork and a U.S. Forest Service complex. The water system has one well, designated the Library well, which pumps 240 gpm into a 200,000-gallon storage tank. The well was drilled in 1994 to a depth of 520 feet. An additional existing well, known as the North Fork Center Well, is currently inactive but available for future use. To exercise this option, the Tribe would connect to the water line at the intersection of Minarets Road (Road 225) and Road 274. A water connection pipeline would follow the same path along Minarets Road as a connection to the North Fork WWTP (**Figure 2-24**). It would connect to the municipal water line at the intersection of Minarets Road and Road 274. If the Madera County Maintenance District supplies water, it is likely that the District would require investigation of the North Fork Center Well capacity and treatment requirements. Further investigation is necessary to determine if enough water is available in the District's existing 200,000-gallon storage tank to meet fire flow capacity for

Alternative D. If fire flow capacity is not met, then an on-site water storage tank would be required.

Alternatively, water may also be supplied solely by an on-site well. If on-site groundwater were used, two on-site wells would be drilled. One well would be used for continuous supply and the other for redundancy in case of malfunction or maintenance of the primary well. Each well would have a firm water supply capacity of either 19 (no water recycling) or 10 (with water recycling) gpm.

Water from the on-site wells would be stored in a water storage tank. The actual required capacity of the tank is dependant on the development's fire flow requirements. Based on storage requirements for similar facilities and the recommendation of the Madera Fire Marshall, the recommended capacity of the storage tank is 400,000 gallons. A pump station would be utilized to maintain pressure in the distribution system. The pump station would be required to convey water from the storage tank to the casino. The ultimate pumping capacity would be dependent on fire flow requirements.

2.5.8 FUEL STORAGE

Fuel storage requirements would be substantially reduced in size and scope when compared to those proposed in **Section 2.2.9** for Alternative A. Fuel storage practices would be similar to those proposed for Alternative A.

2.5.9 MEMORANDA OF UNDERSTANDING

Given the alternate location proposed for Alternative D, the MOUs with the City, County, and MID described in **Section 2.2.10** would not apply.

Provisions included within the Building and Construction Trades Council and UNITE HERE Labor Agreements, described in Section 2.2.10, additionally apply to Alternative D.

2.5.10 TRIBAL-STATE COMPACT

The Tribal-State Compact in **Appendix X** applies only to a casino on the Madera site, and thus would not apply to Alternative D. Given that Class III gaming is proposed under Alternative D, however, a Tribal-State Compact would need to be negotiated prior to operation of the casino. It is likely that the terms of the compact would be similar to the Madera site compact contained in Appendix X, except that revenue sharing requirements may be reduced given the more marginal profits that may be expected under Alternative D.

2.6 ALTERNATIVE E – NO ACTION

Under Alternative E, the No Action Alternative, neither site would be developed as described under any of the alternatives identified. The Madera site would not be taken into trust and would

continue to be utilized for open space, agricultural, and rural residential uses. The North Fork site would continue to be utilized for open space and rural residential uses. None of the Memoranda of Understanding nor the Tribal-State Compact would apply to the No Action Alternative.

2.7 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

2.7.1 ALTERNATIVE SITES FOR GAMING

TRUST LANDS

HUD Tract

At present, there are no lands owned by the Tribe in fee or held by the United States in trust for the benefit of the Tribe that have been determined to be eligible for gaming. The only land held in trust for the benefit of the Tribe is a 61.5-acre tract located on a steep hillside in the small town of North Fork (the “HUD tract”). The U.S. Department of Housing and Urban Development (HUD) provided the Tribe with funds to purchase the HUD tract in 2000 on the understanding that the Tribe would use the tract for low income Indian housing, an endangered species conservation reserve, and related uses (Kroll, 2000). In 2001, the Tribe entered into a local cooperative agreement with Madera County for low-income Indian housing. Under the agreement, the North Fork Rancheria Indian Housing Authority (“NFRIHA”) agreed to provide payments for each low-income Indian housing unit to the County in exchange for services. On June 27, 2002, the NFRIHA entered into a municipal services agreement with Madera County for water and sewer hookups for the housing development.

The Tribe applied to the BIA to have the HUD tract accepted into trust for the benefit of the Tribe and stated in its fee-to-trust application that the Indian housing plan for the tract “does not include space for commercial development and the Tribe has no intention at the time to alter the plan once the land is placed into trust... The Tribe does not contemplate, nor is there room for, commercial development on the property.” In late 2002, the BIA placed the HUD tract in trust for the Tribe on the understanding that the Tribe would use the land for tribal housing and related uses. Since then, the North Fork Rancheria Housing Authority has expended nearly \$2.5 million of HUD funding to develop the HUD tract. This funding has been used to construct a community center and to develop infrastructure, including roads, water, sewer, and pads for nine single-family homes. One of the nine homes and a youth center being built as an addition to the community center are currently under construction. Once the nine homes are built, the development of additional homes will depend on physical and environmental development constraints, infrastructure, and funding availability. While the Tribe had at one time anticipated the construction of up to 45 homes on the HUD tract, the steep topography has made development of the parcel far more difficult and expensive than anticipated and it is unclear how many additional homes can be built on the HUD

tract. **Figure 2-26** includes a rough display of proposed land uses over a topographical map of the HUD tract.

Section 20 of the Indian Gaming Regulatory Act (“IGRA”) provides that lands acquired by the Secretary in trust for the benefit of an Indian tribe after October 17, 1988 are not eligible for gaming unless one of the exceptions set forth in Section 20 of IGRA is applicable. Because the HUD tract was not taken into trust pursuant to the procedures applicable to lands to be used for gaming, no federal agency has determined that the lands qualify for one of the exceptions in Section 20 of IGRA. The HUD tract would be eligible for gaming only if, among other things, the Tribe requested an eligibility determination and: (1) the lands were deemed to have been taken into trust as part of the restoration of lands for an Indian tribe that is restored to federal recognition pursuant to Section 20(b)(1)(B)(iii) of IGRA, or (ii) pursuant to Section 20(b)(1)(A) of IGRA, the Secretary determined that, after consultation with the Indian tribe and appropriate State and local officials, including officials of other nearby Indian tribes, it would be in the best interest of the Indian tribe and its members, and would not be detrimental to the surrounding community, but only if the Governor of California concurred in the Secretary’s determination.

However, eligibility for gaming was never considered, as the Tribe does not intend to use the HUD tract for anything other than a housing development and related uses. The Tribe is fully committed to addressing the housing needs of its more than 1,400 tribal citizens, and the development of the HUD tract for housing is a critical component of its strategy to address those needs. As explained above, the Tribe has stated unequivocally to the federal government and the community that it would not use the HUD tract for commercial purposes, and has never considered using the land for any other purpose besides the present use. In addition to this intention not to change the use of the HUD tract, development of the HUD tract for commercial purposes (such as a casino) would be very difficult due to the steep and varied topography and sensitive biological features (the presence of habitat for the threatened valley elderberry longhorn beetle habitat, for instance) (HUD, 1999). Also, access to the HUD tract is via a single steep access road from a two-lane County roadway. The topography, biological factors, limited access, and rural location would necessitate the development of a very small facility. Few jobs would be created. The draw to the facility would likely be further limited by the proximity of three existing tribal gaming facilities located within 20 miles of the town of North Fork. The expensive construction costs and limited returns would likely constrain or eliminate the Tribe’s options for financing a casino development on the trust land, further limiting the potential revenue stream to fund tribal programs. Therefore, for the reasons stated above, development of the HUD tract for commercial purposes would not meet the purpose and need for the project and has been eliminated from further consideration.

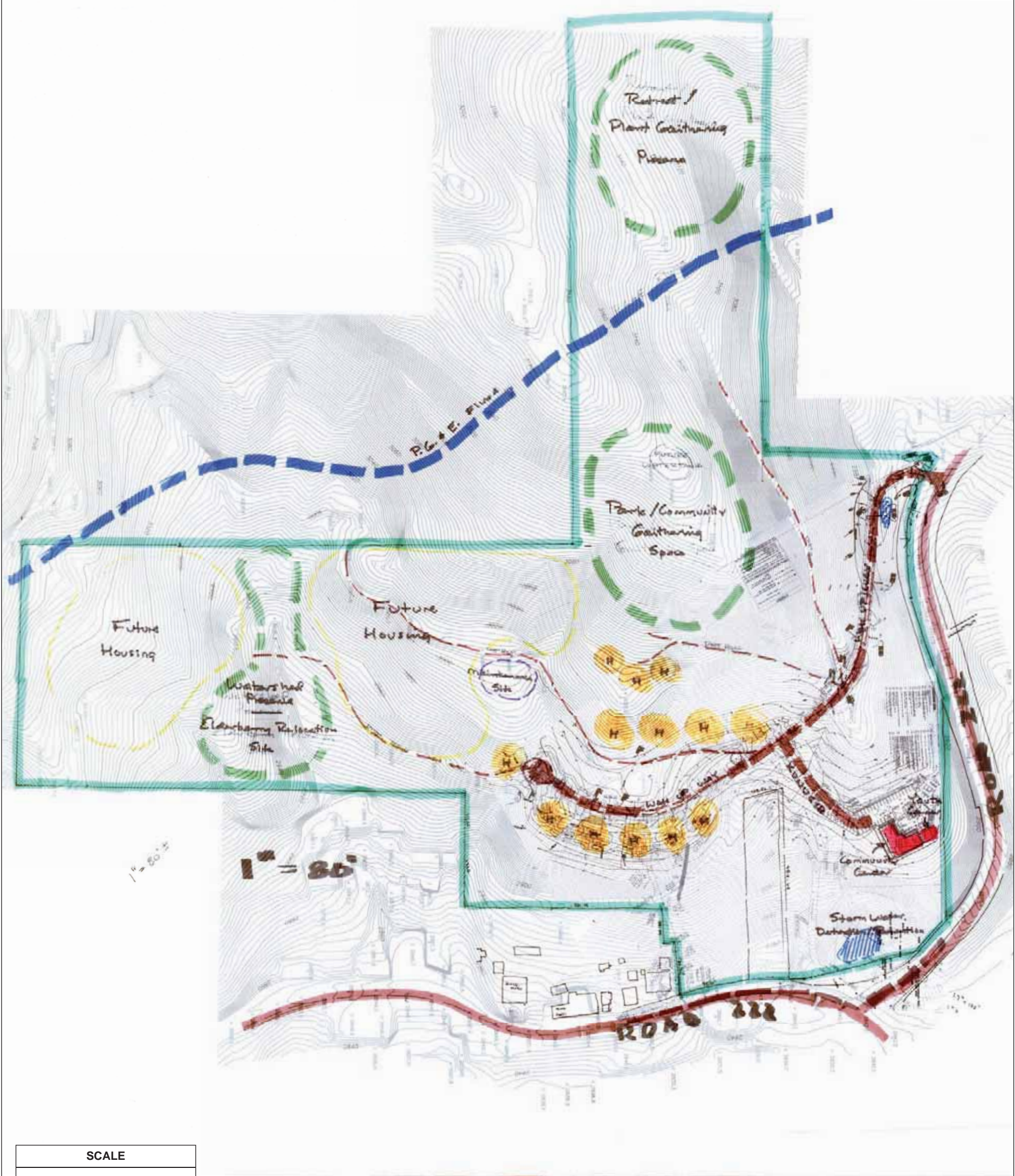


Figure 2-26
HUD Tract – Land Use Plan

North Fork Rancheria

The 80-acre North Fork Rancheria is located near the HUD tract, approximately two miles east of the town of North Fork. The original boundaries of the North Fork Rancheria were restored in 1987 pursuant to the Stipulation for Entry of Judgment (Madera County) in *Tillie Hardwick et al. v. United States of America*, Civil No. C-79-1710-SW (N.D. Cal. 1987). The stipulation provided that the lands within the exterior boundaries of the Rancheria shall be treated as any other federally recognized Indian reservation. Thus, the lands within the North Fork Rancheria are technically eligible for gaming under the IGRA. However, none of the lands within the exterior boundaries of the North Fork Rancheria are owned by, or held in trust for, the Tribe. Instead, all of such lands are held in trust for individual Indians. Neither the stipulation nor case law provides the Tribe with any special right to acquire or lease these lands on behalf of the Tribe. None of the beneficial owners of the North Fork Rancheria lands are required to convey an interest in those lands to the Tribe, and the Tribe would not be able to conduct gaming on the North Fork Rancheria lands unless it was able to obtain beneficial title to or a leasehold interest in those lands.

In addition, many of the same constraints to development of the HUD tract are also present on the North Fork Rancheria (particularly varied and steep topography). Unlike the HUD tract, no development has been completed or is proposed for the North Fork Rancheria other than scattered existing rural residences on the Rancheria. Also unlike the HUD tract, most of the Rancheria is undeveloped, with numerous and varied biological resources present throughout.

The Tribe also believes that a facility in the North Fork vicinity would generate considerable political opposition while doing little to advance the needs of its many tribal citizens or of the community. A relatively small facility on the Rancheria or the HUD tract would provide few jobs and generate only minimal revenues for the Tribe and even fewer for the larger community. Further, a facility around North Fork would likely be opposed by most local residents, many of who are retirees who recently moved to North Fork to enjoy the beauty of the Sierra foothills and escape the stress of city living. Based on informal conversations with North Fork residents and community leaders, the Tribe has concluded that local residents would resent the development of gaming operation as threatening the rural character of the North Fork area. Without the ability to cite real benefits to County residents in terms of jobs or revenues, the County Board of Supervisors would likely defer to the local community and possibly end up opposing commercial development in the North Fork area. Finally, any gaming facility in the North Fork area would likely be limited to a small facility with high construction costs, likely constraining or eliminating the Tribe's options for financing a casino development. An independent analysis by the Innovation Group (2006) confirmed that, if construction estimates were correct, a casino development on the North Fork Rancheria could not be successfully financed.

Therefore, for the reasons mentioned above, the Tribe did not consider development of a casino on the North Fork Rancheria. Nonetheless, development of a casino on the North Fork Rancheria (the North Fork site) is fully analyzed in this EIS as Alternative D (see **Section 2.5**) because commenters during the scoping period recommended that it be included as an alternative site, the site is eligible for gaming, it might be possible to lower construction costs to improve the viability of a casino development on the site, and the disruption of existing development would be limited.

NON-TRUST LANDS

Before undertaking a search for a proposed development site, Tribal representatives contacted the North Fork district representative of the Board of Supervisors of Madera County in 2003 to explore the possibility of developing a gaming facility in Madera County. The District Supervisor agreed that development of a gaming facility on the North Fork site would provide little benefit to the Tribe for the reasons discussed above. Recognizing the potential for hundreds of new jobs and other significant economic benefits for County residents, and welcoming the idea of working in cooperation with a local tribal government, the District Supervisor agreed to assist the Tribe in arranging meetings with community leaders so that the Tribe could consult with them to determine an appropriate location for its proposed gaming facility. As a result, the Tribe had the opportunity to consult with dozens of community leaders in the process of identifying an environmentally appropriate and viable location for its proposed gaming facility.

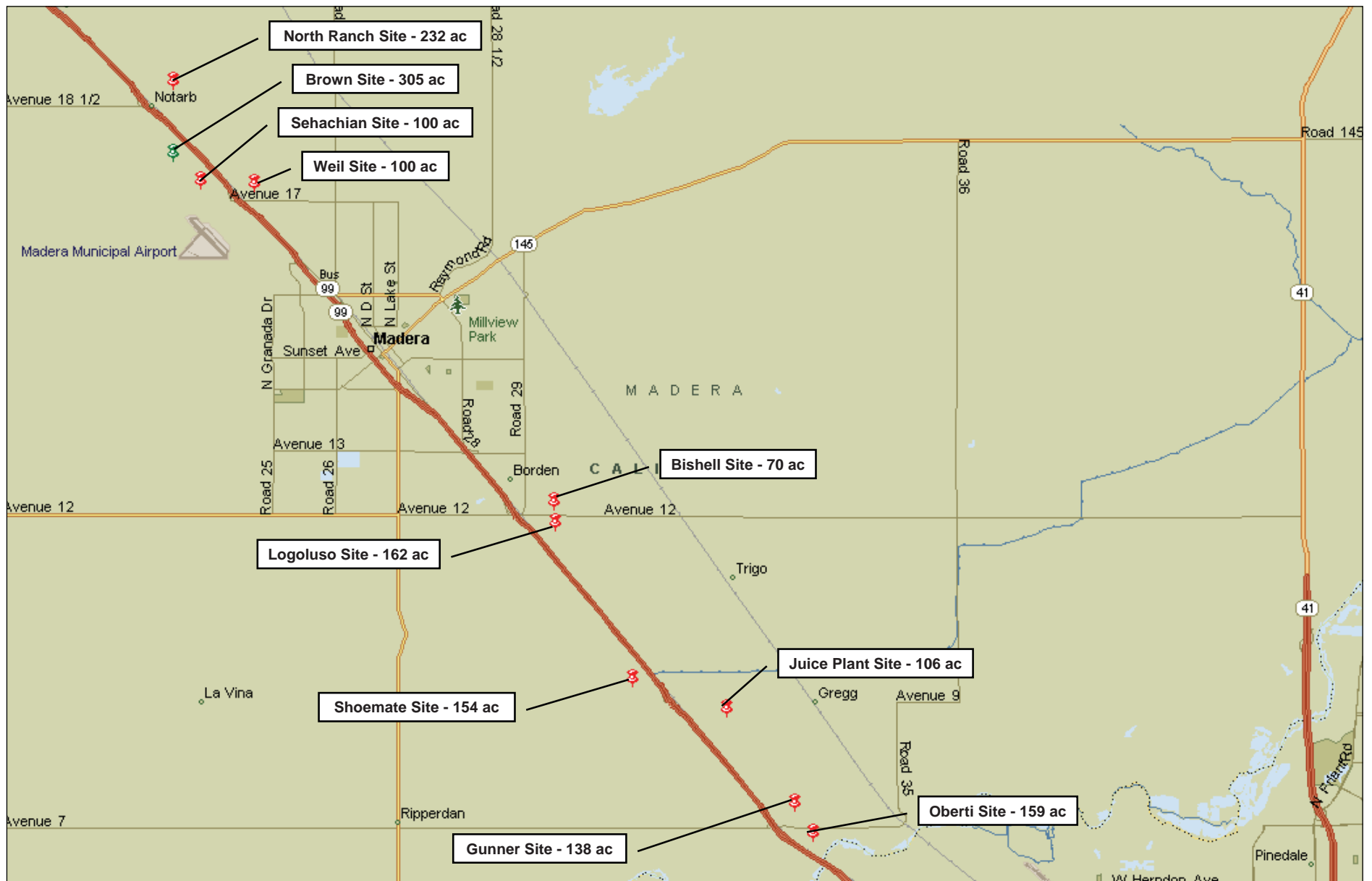
In searching for a proposed development site, the Tribe evaluated several properties that were available for purchase at the time of the Tribe's search. **Figure 2-27** displays the general location of the properties that were considered. In considering various alternative properties, the Tribe sought a location for its proposed development with the following characteristics:

- Within the Tribe's historic area in Madera County;
- Away from existing tribal gaming operations so as to minimize competitive effects on neighboring tribes;
- Where it would provide significant economic and other benefits to County residents;
- Consistent with existing or proposed land uses;
- Away from the environmentally sensitive foothills;
- Capable of generating enough revenues to significantly advance the health, education, and welfare of the Tribe's nearly 1,400 tribal citizens (i.e. economically viable);
- A reasonable distance away from neighborhoods, schools, and churches;
- Offering excellent traffic access and circulation;
- Large enough to provide water and on-site treatment of waste water;
- Raising as few environmental concerns as possible; and
- Large enough to mitigate any environmental concerns that might arise on-site.

The Tribe primarily focused its efforts to examining sites along the SR-99 corridor. SR-99 is a four-lane highway (the only one in Madera County), on the floor of the San Joaquin Valley that serves as the primary traffic corridor through Madera County. The only other main highway corridor, State Route 41 (SR-41), is a two-lane highway that runs from the south entrance of Yosemite south to Fresno. Although the SR-41 corridor is clearly within the Tribe's historic area and a facility there would be economically viable, most of the corridor situated in Madera County lies within the environmentally sensitive foothills. Development in the foothills is problematic because of problems associated with building on steep terrain, loss of habitat for native plants and animals, water scarcity, and other concerns. Development along much of the corridor would be in conflict with the scenic nature of the corridor, which is lined with rolling pastures sprinkled with oaks and large rock outcroppings in the vicinity of the intersection of State Route 145 (SR-145) leading to the City of Madera. North of SR-145 the road narrows and winds up into the Sierra foothills to the Sierra foothill towns of Coarsegold, Oakhurst and the south entrance of Yosemite.

The Tribe felt that proposing a development along SR-41 would have raised not only environmental concerns, but also traffic concerns because of the already overburdened two-lane system. Further, the Tribe was concerned that a development along the SR-41 corridor would potentially have a very detrimental competitive effect on the gaming operations of neighboring tribes, including the Picayune Rancheria (whose Chukchansi Gold facility is located along SR-41 near Coarsegold) and the Table Mountain Rancheria in Fresno County. Finally, the Tribe was concerned that, based on its proximity to Fresno, development along the southern portion of the corridor would have primarily benefited Fresno County residents and had minimal impact on improving the lives of Madera County residents.

The Tribe considered numerous properties that were available for sale along the SR-99 corridor. Economically, the most attractive properties were located just off of Avenue 7 near the Fresno County line, as well as a few miles north at Avenues 9 and 11. Specifically, the Tribe considered the 159-acre Oberti and 138-acre Gunner properties at Avenue 7, and the 106-acre "Juice Plant" and 154-acre Shoemate properties at Avenue 9. These properties were readily accessible from the large Fresno market, raised few environmental concerns, and there was little concern about the commercial development of the sites.



However, the Tribe decided to eliminate these properties from further consideration for a variety of reasons. Access to the properties was constrained by the train tracks that run just east and parallel to SR-99. Further, the Tribe was concerned about the impact a development there would have on the gaming operations of neighboring tribes, particularly the Picayune Rancheria and Table Mountain Rancheria. The operations of both tribes draw heavily from the wealthy northeast Fresno and Clovis markets. The Tribe was concerned that those patrons would be attracted by the short travel distance to a new development at Avenue 7. Further, the Tribe was concerned that a development near Fresno would inure primarily to the residents of Fresno and not Madera County. Equally important, the Tribe was concerned that development of a facility along the southern stretch of SR-99 in Madera County would be inconsistent with existing land uses. Most of the surrounding area was used for agriculture, including orchards, a horse ranch, vineyards, and various crops.

Consequently, the Tribe turned its attention to available sites further from Fresno and closer to areas of existing development near the City of Madera. The Tribe considered the 162-acre Logoluso and 70-acre Bishell properties near the Avenue 12 interchange at Highway 99. These properties were situated in the County but were understood to be within the urban growth boundary of the City of Madera. Again, development in this area would be economically viable and would be consistent with existing plans to develop the area. However, the Tribe was concerned that a gaming facility might not fit with the proposed development of a large retail center surrounded by subdivisions of single-family homes. In addition, there was concern that the community might object to building a gaming facility near the community college located several miles east of the Avenue 12 interchange. Further, the Bishell property was deemed too small to provide the area necessary for wastewater spray fields, should the Tribe choose that option for wastewater disposal, and had potential wetland and flood plain issues. Ultimately, the Tribe concluded that a gaming facility on either property in the area, coupled with the proposed development, might put too much pressure on existing roads and infrastructure, and conflict with the County and City's vision for the area.

The Tribe did not seriously consider properties inside the City of Madera in order to avoid neighborhoods and schools and to avoid creating traffic issues. Having eliminated properties south of the City, the Tribe therefore considered properties north of the City at Avenue 17 and 18½. Specifically, the Tribe considered the 305-acre Brown property northwest of the Avenue 17 interchange, the 100-acre Sehachen property just south of the Brown property and north of Avenue 17, the 100-acre Weil property site on the northeast corner of the interchange, and the 232-acre North Ranch property at Avenue 18½. The two smaller properties (Sehachen and Weil) were rejected out of concern that they might not be large enough for wastewater sprayfields, in the event they were needed, or to accommodate other potential environmental mitigation needs. Further, the Weil property was located in close proximity to a residential neighborhood, and presented potential environmental issues based on its prior use as a dairy.

In March 2004, the Tribe announced that it had secured purchase options on the Brown and North Ranch properties located respectively at Avenues 17 and 18½. Following further discussions with community representatives and after conducting a preliminary constraints analysis, the Brown property (Madera site) ultimately became the proposed development site (the location for Alternatives A, B, and C). The North Ranch property was eliminated from further consideration for the reasons summarized below.

The North Ranch property consists of eleven adjacent parcels totaling approximately 353 acres (**Table 2-6**). It is located just northeast of the SR-99/Avenue 18½ interchange, approximately two miles north of the Madera site (**Figure 2-28**). The North Ranch property is bounded on the north by Avenue 19, light industrial land, and agricultural land; on the east by Road 24, agricultural land, and rural residential land; on the south by Avenue 18½, Dry Creek, and agricultural land; and on the west by Southern Pacific Railroad Tracks and SR-99. The North Ranch property is presently utilized for growing agricultural crops. A residence and associated outbuildings are located along the property's north-central border.

One of the primary reasons for eliminating the North Ranch property from further consideration was the encumbrance by Williamson Act contracts on more than half of the property (**Figure 2-29**). Under the provisions of the Williamson Act (California Land Conservation Act of 1965, Section 51200), landowners contract with the County to maintain agricultural or open space use of their lands in return for reduced property tax assessment. The contract is self-renewing and the landowner may notify the County at any time of intent to withdraw the land from its preserve status. Withdrawal involves a ten-year period of tax adjustment to full market value before protected open space can be converted to urban uses. Consequently, land under a Williamson Act contract can be in either a renewal status or a non-renewal status. Lands with a non-renewal status indicate the owner has withdrawn from a Williamson Act contract and is waiting for a period of tax adjustment for the land to reach its full assessed tax value.

It is possible to bypass the ten-year waiting period and cancel the Williamson Act contract. The Williamson Act discourages cancellation, however, and requires an onerous process, including various findings by the County, prior to allowing the cancellation of a contract. Specifically, the landowner must submit a petition to the Board of Supervisors for cancellation of the contract accompanied by a proposal for a specified alternative use of the land.

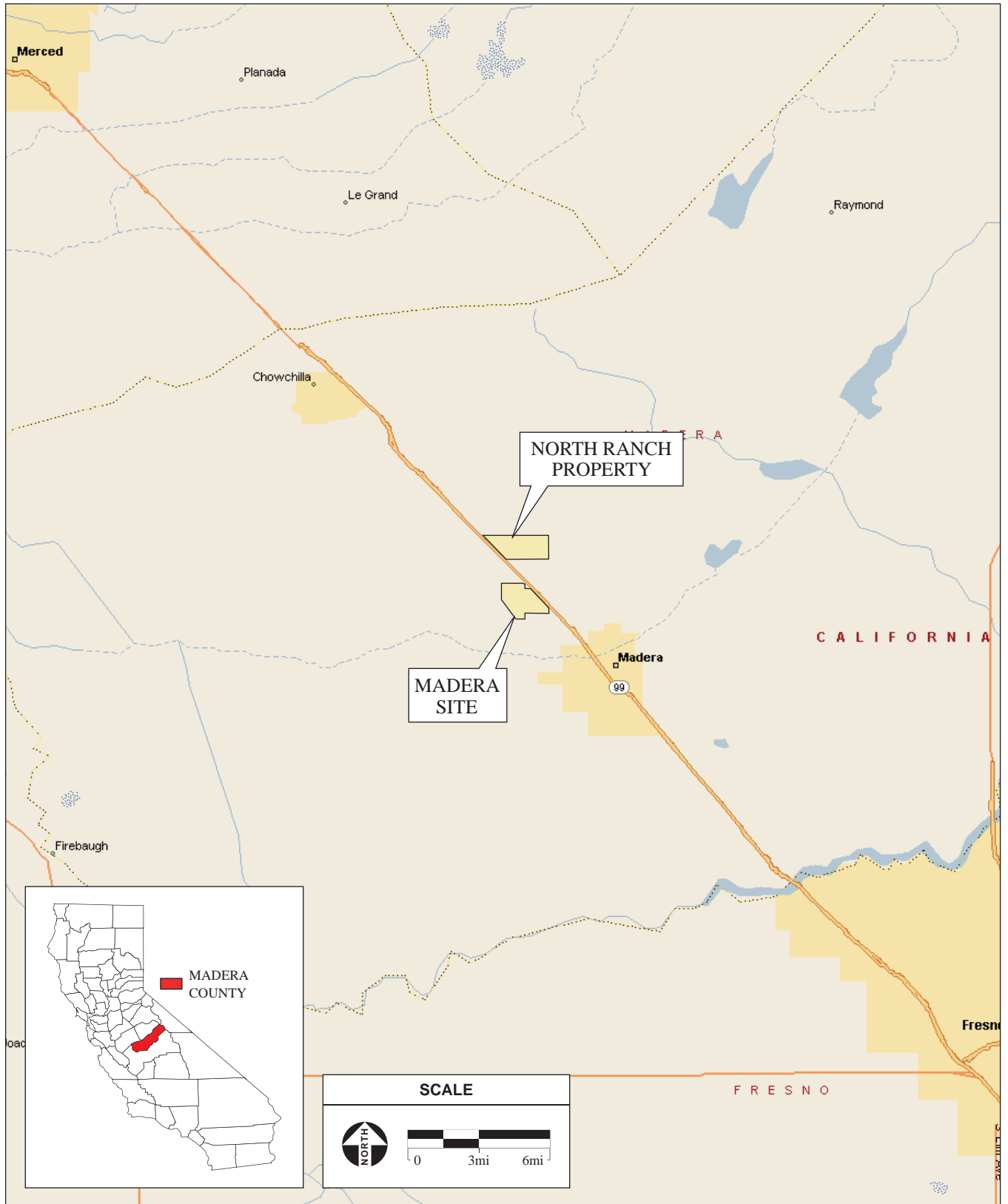
TABLE 2-6
NORTH RANCH PROPERTY – PARCELS

Assessors Parcel Number (APN)	Acres
029-260-001-000	19.77
029-260-002-000	26.63
029-280-007-000	19.54
029-280-008-000	18.54
029-280-009-000	9.77
029-280-033-000	137.94
029-280-050-000	15.98
029-280-051-000	8.76
029-280-052-000	8.76
029-280-029-000	77.14
029-280-010-000	9.77
TOTAL	352.60

SOURCE: Chicago Title Company, 2004; AES, 2004.

The Board may deny this request; however, the Williamson Act allows the Board to grant tentative approval of the cancellation if the Board makes a formal finding that the cancellation is in the public interest (this finding can only be made if the Board finds that public concerns substantially outweigh the objectives of the Williamson Act and there is no proximate noncontracted land which is available and suitable for the use proposed for the contracted land) or that cancellation is consistent with the purposes of the Williamson Act (this finding can only be made if the land is in nonrenewal, cancellation is not likely to result in the removal of adjacent lands from agricultural use, the cancellation is for an alternative use consistent with local planning designations, the cancellation will not result in discontinuous patterns of development, and there is no proximate noncontract land which is available and suitable for the use proposed for the contracted land). Successful Williamson Act contract cancellation is rare and did not appear to be a likely option for the North Ranch property Williamson Act contracts.

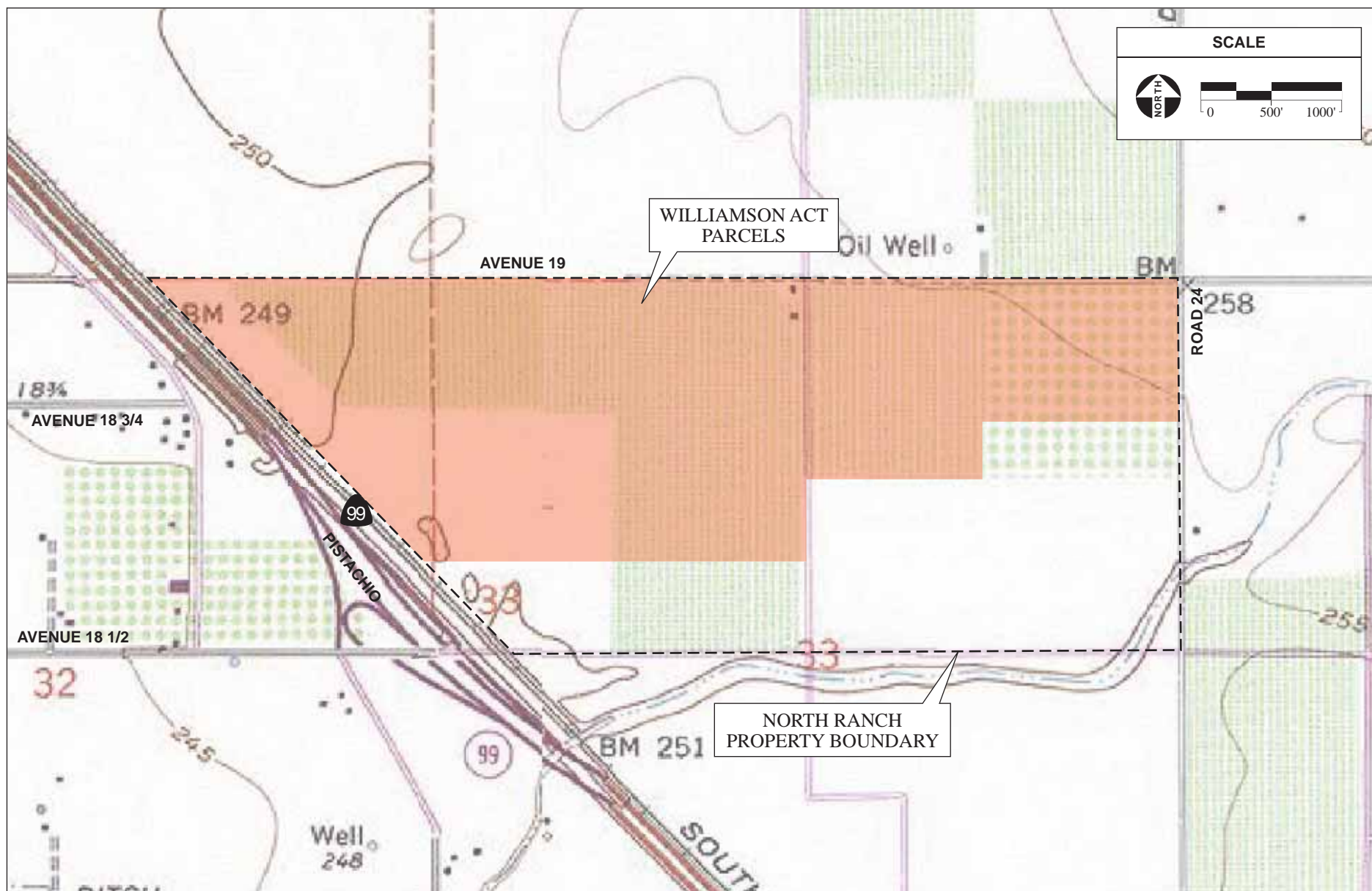
The northern-most six parcels of the North Ranch property, totaling 232.19 acres, are currently protected by the Williamson Act (**Figure 2-29**). A notice of non-renewal was filed for these parcels on May 21, 2003. Thus, the Williamson Act contracts will expire on May 21, 2013 and development on these lands would be possible at that time. The southern-most six parcels, totaling 120.41 acres and bordering Avenue 18½, are not currently protected by the Williamson Act (AES, 2004). The BIA has, in the past, been unwilling to take land into trust that is encumbered by the Williamson Act when that encumbrance may prevent the use of the site for its intended purpose.



SOURCE: Microsoft Streets & Trips, 2004; AES, 2006

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Figure 2-28
North Ranch Property – Regional Location Map



SOURCE: "Berenda, CA" & "Kismet, CA" USGS 7.5 Minute Topographic Quadrangles, Sections 32 & 33, T10S, R17E and Section 4, T11S, R17E, Mt. Diablo Baseline and Meridian; AES, 2006

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Figure 2-29

North Ranch Property – Williamson Act Parcels

Thus, assuming the BIA agreed to take the North Ranch property into trust so encumbered, any proposed development would be limited to the southern 120 acres of the property. These southern 120 acres are further constrained by the presence of Dry Creek on the property's southeastern corner. Dry Creek is an intermittent tributary to the Fresno River. It contains suitable aquatic habitat for several special status fishes, amphibians, and reptiles and is a jurisdictional water of the U.S. under the federal Clean Water Act.

Another constraint to development discovered on the North Ranch property was a close proximity to the Southern Pacific Railroad Tracks (along the property's western boundary). The close proximity of the railroad would result in frequent loud noises, which could disturb patrons of the proposed resort.

Finally, potentially hazardous materials were discovered on the North Ranch property. The property contains a 500-gallon aboveground storage tank, with no secondary containment measures and evidence of stained soils in the vicinity of the tank. The property also contains a fairly large debris pile, which appeared to contain mostly non-hazardous wastes, but was not inventoried (AES, 2004). Given the above constraints to development, the North Ranch property was eliminated from further consideration.

Old Mill Site

Several commenters during the DEIS comment period mentioned the location of the "Old Mill" in North Fork as a desirable alternative site for the development of a casino. The Old Mill site is a 135-acre site that housed a working lumber mill between 1941 and 1994. The site is currently owned by the North Fork Community Development Council (CDC), a charitable nonprofit California corporation. In 1998, after several years of community meetings, the CDC adopted a Master Plan for reuse of the mill site. The Master Plan reflects the community's desire that 60 percent of the developable land be used for some type of light industry, 30 percent for a recreational vehicle park and Visitor Center, and 10 percent for community serving uses such as picnic areas and trails. Finally, some areas were proposed to remain undeveloped, particularly in riparian areas. More recently the CDC has been overseeing various community development and cleanup related activities on the site and has just recently (January 2008) listed the site for sale in the amount of \$6,000,000 (CDC, 2008). Most recently the CDC has been pursuing the subdivision of the Old Mill site into 45 different parcels for mixed use (Christianson, 2008b).

The BIA has carefully considered these comments and has independently examined this site but has ultimately decided to eliminate this site from further consideration for the reasons stated below.

The site is the location of a long standing mill operation and has been found to be contaminated with petroleum hydrocarbons in the soil and water, pentachlorophenol (PCP) and dioxins, furans,

asbestos, and lead-based paint. Groundwater impacts from diesel fuels are believed to be the result of water leaching through impacted surface soils. Although groundwater samples collected in some onsite wells exceeded the Maximum Contaminant Level (MCL) taste and odor threshold of 100 micrograms per liter (ug/L), once the affected soils are removed from the NFLMS, the levels of diesel should decrease to levels that would not require remediation. The final phase of clean up of hydrocarbon impacted soils is expected to occur in 2008. This final phase of soil remediation will require excavation and removal of impacted soils. It is estimated 100 cubic yards of surface soils impacted with diesel hydrocarbons remain onsite. In addition to soil affected with diesel fuels, soils remain onsite that contain elevated levels of dioxins, furans, and pentachlorophenol (PCP). The areas affected with dioxins were identified as a former dip tank area and three large soil stockpiles. Samples exceeded the USEPA Preliminary Remediation Goals (PRGs) for PCP, but were below hazardous waste classification. The PCP excursions are not widespread and are limited to the dip tank area. The soil stockpiles were found to have dioxins and furans that would prevent onsite use. Given the presence of these materials onsite, several remedial actions were offered to DTSC to allow unrestricted use of the NFLMS. Remedial options include excavation, off-site disposal and treatment, on-site bioremediation, chemical treatment, and natural attenuation. Based on information provided in the March 2006 Focused Feasibility Study and Focused Health Evaluation prepared by Bryan A. Stirrat and Associates, INC, NFLMS site has been extensively sampled and constituents have been identified and delineated. As stated above, the primary areas of concern are several soil stockpiles and the former dip tank area. The CVRWQCB case worker was contacted to discuss current remedial options at the site. The remedial action that was chosen is excavation and offsite removal of impacted soils. According to the case worker, Jeff Hammel, a Soil Removal Workplan is expected to be submitted to DTSC and the CVRWQCB before fall of 2008. The workplan will outline soil removal activities for all affected onsite soils. It is believed the removal of affected soils would allow for unrestricted use of NFLMS although the potential for the presence of unknown contamination related to past uses on the site remains. Thus, although some remediation has occurred and the completion of remediation for the proposed uses (primarily light industrial) is expected by 2009, the potential for unanticipated discoveries of contamination remains elevated and therefore potential liability remains for future remediation should such contamination be uncovered.

Given that the Old Mill site is in a relatively remote location near the Rancheria and HUD sites, similar disadvantages attracting customers would be present, reducing the potential for job development and the ability of the project to create a revenue stream sufficient to fund Tribal programs. Peckinpah Creek and a tributary to this creek run through the Old Mill site, creating constraints to development through the presence of waters of the U.S. and species habitat.

Finally, when the CDC learned that the BIA was considering the Old Mill site as an alternative for the Tribe's proposed casino project, it sent two letters to the BIA stating that the site would not be sold for the development of a casino project given that such a use was inconsistent with its Master Plan (Christianson, 2008a). According to the CDC, the idea of locating a casino at the site was

discussed with the community during the preparation of the Master Plan. Apparently, the concept “gained no public support to speak of (including from the Rancheria), and actually received widespread community disapproval. The CDC Board feels confident that there is a strong community disposition against there being a casino located at the mill site (Christianson, 2008b).”

2.7.2 REDESIGN ALTERNATIVE

The proposed project has been designed to avoid and minimize impacts to the environment, including impacts to any potential jurisdictional wetlands or waters of the U.S., which are typically sensitive biological habitats. The project facilities have also been sited near the center of the site in order to maximize the distance between project facilities and nearby residences and agricultural operations. Other financially and technically feasible site designs were considered in an attempt to further reduce environmental effects. However, the relative uniformity of natural features and surrounding uses resulted in an inability to devise a site plan that would further avoid or minimize significant environmental effects. Therefore, a redesign alternative was eliminated from further consideration.

2.7.3 LARGE GAMING/HOTEL RESORT ON NORTH FORK SITE

After the North Fork site was chosen as an alternative site that would be analyzed in this EIS (see **Section 2.5**), a site plan was prepared for the development of a casino on the site. Various sized facilities were considered. A resort of a size proposed under Alternative A was ultimately eliminated from further consideration, for the reasons explained below, in favor of a smaller casino facility.

In an effort to determine whether and what sized development would be feasible, primarily from an environmental and economic standpoint, a civil engineer and a socioeconomic consultant were consulted. According to the civil engineer, although slopes are relatively steep throughout the North Fork site (estimated at 25% from the eastern to western boundary), the portion of the property to the west of the existing access road has slightly less steep slopes and would require slightly less cut and fill to prepare a building pad (Karn, 2005). This assessment was based on a review of the U.S. Geological Survey topographic map for the North Fork site. Development of the western portion of the property would also ensure that existing residences north of the access road would not need to be relocated.

It was the opinion of the proposed management company, SC Madera Management, LLC, that due to the remote location of the North Fork site and considering existing competition, any development, and especially a large development, would be difficult to finance and operate profitably (Dunkeson, 2005). Therefore, in order to determine what size facility could be feasible alternative on the North Fork site from a profitability perspective, an independent socioeconomic consultant (the Innovation Group) was contacted to make a recommendation.

In April 2005, the Innovation Group completed a market potential and facility sizing analysis for a development on the North Fork site (**Appendix R**, see Appendix 1 to the Socioeconomic Assessment). This analysis concluded that to accommodate potential gamer visits and to have as competitive a facility as possible, a facility with approximately 275 slot machines and 6 tables would be advised on the North Fork site. According to the Innovation Group, by subtracting more than 25 machines from this number, the scale of the facility would be too small to warrant visitation and provide variety, given the level of competition in the market. Similarly, adding more than 25 devices would provide for diminishing marginal returns, with the level of investment necessary far outweighing any economic benefits that could be received. In fact, the Innovation Group noted that, although a specific analysis of construction costs was not performed, due to the challenges on the site (steep slope, potentially minimal soil depth to bedrock), such costs were estimated at over \$20 million (these costs were later estimated at approximately \$41 million in the April 2005 Socioeconomic Assessment), which would make it difficult to successfully finance any casino on the site, even the optimally sized 275 slot machine variety. Thus, although a 275-slot facility has marginal potential for profitability on the North Fork site, possibly aided by an effective advertising campaign and a possible reduction in construction costs if financing could be obtained, a facility sized similarly to the proposed project would be far too expensive to construct on the North Fork site considering the potential profitability, and would not constitute a feasible alternative. The Alternative D casino was therefore sized to accommodate approximately 275 slot machines and six table games on the western side of the existing access road. A larger facility on the North Fork site was eliminated from further consideration.

2.8 PREFERRED ALTERNATIVE

Consistent with the BIA NEPA Handbook, the Department of the Interior Departmental Manual (515 DM 4), the CEQ NEPA Regulations (40 C.F.R. § 1502.14), and the CEQ NEPA Forty Most Asked Questions guidance document (46 Fed. Reg. 18026 (1981)), the BIA considers an alternative's ability to meet the purpose and need of the proposed action and the overall impact on the environment when selecting a Preferred Alternative. In this case, the proposed project (Alternative A) would best meet the purpose and need of the proposed action, given that it would maximize long-term Tribal revenues. This revenue source would be used to effectuate the purpose of IGRA to promote "tribal economic development, self-sufficiency, and strong tribal governments (25 U.S.C. Section 2702)." The development of the proposed project would meet this purpose better than the other development alternatives, due to the reduced revenues that would be expected from the operation of Alternatives B-D and the difficulty in obtaining financing for Alternative D. The proposed project would result in greater sustained revenues for the Tribe. The No Action Alternative (Alternative G) would not result in revenues to the Tribe and would therefore not meet the purpose and need of the proposed action.

Of the alternatives considered, the Madera site alternatives would result in the lowest overall impact on the human environment relative to their economic benefits to the Tribe given that the

Madera site is less biologically sensitive than the North Fork site and is closer to existing development and infrastructure. As explained above, of the three alternatives located on the Madera site (A, B, and C), Alternative A would best meet the purpose and need. Alternatives B and C would generally result in slightly lower environmental impacts, due to the reduced intensity of development. Mitigation measures, however would provide that most post-mitigation impacts of Alternative A would be similar to post-mitigation impacts of Alternatives B and C (for example, while the impacts to neighboring wells may be slightly higher under Alternative A, mitigation measures contained in **Section 5.2.2** would serve to restore neighboring well owners to a similar pre-project condition no matter which alternative is developed). Thus, Alternative A is judged by the BIA to best meet the purpose and need while minimizing impacts on the human environment. Therefore, the BIA has selected the proposed project (Alternative A) as its Preferred Alternative.

SECTION 3.0

AFFECTED ENVIRONMENT

SECTION 3.0

AFFECTED ENVIRONMENT

3.1 INTRODUCTION

This section describes the existing environment of the area that may be affected by the Proposed Project or alternatives as required by Council on Environmental Quality (CEQ) Guidelines (40 C.F.R. § 1502.15). Resources that are described include Land Resources, Water Resources, Air Quality, Biological Resources, Cultural Resources, Socioeconomic Conditions, Resource Use Patterns, and other values including Noise and Hazardous Materials.

3.2 LAND RESOURCES

This section describes the topography, soils, geology, seismicity, and mineral resources at the Madera and North Fork sites and in the Madera County region.

3.2.1 GENERAL ISSUES

GEOLOGICAL SETTING

Madera County's geological profile includes portions of two geological provinces, the "Great Valley Province" and the "Sierra Nevada Province." The Great Valley Province consists of the San Joaquin and Sacramento Valleys, and is approximately 435 miles in length along its north-south axis, and approximately 93 miles wide along its east-west axis. Its north-south axis is bounded by the Klamath Mountains to the north and the Transverse Ranges to the south. The province's east-west axis is bounded by the Sierra Nevada Province, consisting of the Sierra Nevada Mountains to the east, and the Coast Ranges to the west.

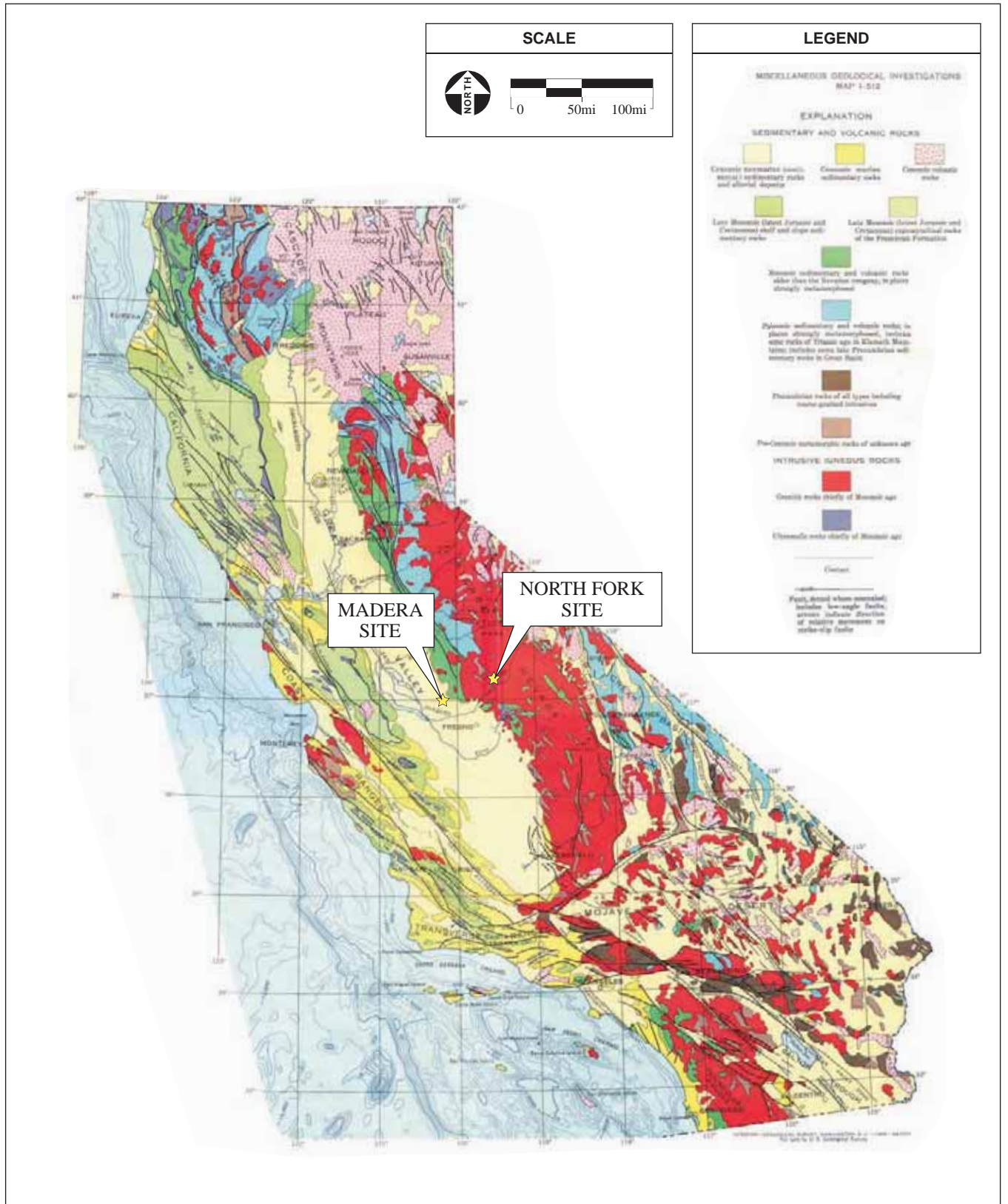
The Sierra Nevada portion of Madera County is shown in **Figure 3.2-1** to be composed primarily of granitic rock structures of Mesozoic age. The intermediate area, shaded in green, is identified as Mesozoic age sedimentary and volcanic rock structures, in some places strongly metamorphosed. Rock formations in western Madera County, in the Great Valley Province, are shown as sedimentary rock and alluvial deposits of Cenozoic Era (approximately 65 million years ago to the present). Further discussion on geology appears under the *Paleontological Resources* heading in **Section 3.6**. Site-specific discussion on geology appears below.

MADERA COUNTY TOPOGRAPHY

A color shaded relief map of the region including and around Madera County appears in **Figure 3.2-2**. The topographical profile of Madera County is characterized as elevated in the Sierra Nevada Province to the east, and lower in its western portion, which lies within the San Joaquin Valley. The highest point in Madera County is found at Mt. Ritter (13,157 feet) among the Sierra Nevada Mountains and in the northeast, near Madera County's border with Mono County. In this portion of the County, the elevation varies greatly, owing to the peak-and-saddle topography of the Sierra Nevada Mountains. The lowest elevations in Madera County are found in the western portion, with elevations of 115 feet found along the border with Merced County, at the town of Dos Palos. Site-specific discussion on topography appears below.

MADERA COUNTY SOILS

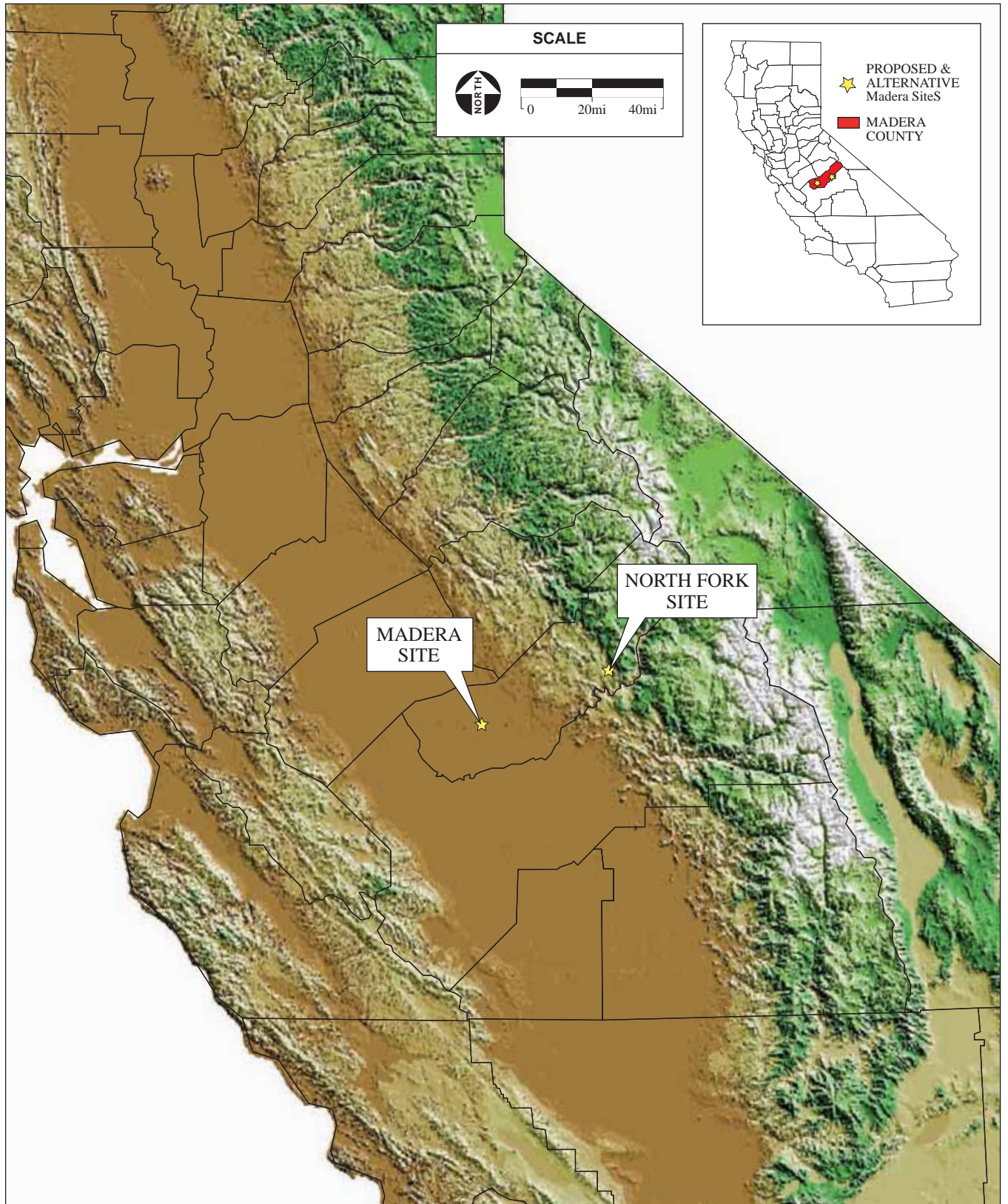
The ground surface of the Great Valley province was formed by long-term deposition of sediments, from the late Mesozoic era (approximately 150 million years ago) and the Cenozoic era, originating in many locales from the Sierra Nevada Province to the east.



SOURCE: U.S.G.S and California Division of Mines and Geology, 1966; AES, 2008

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Figure 3.2-1
Central California Geological Profile



SOURCE: ESRI Data; AES, 2006

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Figure 3.2-2
Madera County Topography – Color Shaded Relief

The result is a variety of soil types and provenances. Older alluvial deposits are sometimes exposed on the eastern edge of the Great Valley province. In this area, older river channels marked by fluvial debris had become covered with other sediments or igneous and pyroclastic materials, derived from volcanic processes. Soils in the Sierra Nevada Province and the foothills are generally shallower, with common outcroppings of granitic rocks. Because of the iron content of the mafic parent rocks, soils in the Sierra Nevada Province are reddish in color in many areas. Site-specific discussion on soils appears below.

SEISMICITY

Seismic Intensity: The Modified Mercalli Intensity Scale

The Modified Mercalli Intensity (MMI) scale (**Table 3.2-1**) is a common measure of earthquake effects due to ground shaking intensity. The MMI values for intensity range from I (earthquake not felt) to XII (damage nearly total), and intensities ranging from IV to X could cause moderate to significant structural damage. The damage level represents the estimated overall level of damage that will occur for various MMI intensity levels. The damage, however, will not be uniform. Some buildings will experience substantially more damage than this overall level, and others will experience substantially less damage. Not all buildings perform identically in an earthquake. The age, material, type, method of construction, size, and shape of a building all affect its performance. Maximum peak ground acceleration intensities at the site are expected to cause MMI (VII) ground shaking. Ground shaking effects of this intensity include moderate structural damage to ordinary buildings, but negligible damage to buildings of good design and construction.

Magnitude

On a Richter scale, the magnitude of an earthquake is determined from the logarithm of the amplitude of waves recorded by seismographs. Adjustments are included for the variation in the distance between the various seismographs and the epicenter of the earthquakes. Magnitude is expressed in whole numbers and decimal fractions. For example, a magnitude 5.3 might be computed for a moderate earthquake, and a strong earthquake might be rated as magnitude 6.3. Because of the logarithmic basis of the scale, each whole number increase in magnitude represents a tenfold increase in measured amplitude; as an estimate of energy, each whole number step in the magnitude scale corresponds to the release of about 31 times more energy than the amount associated with the preceding whole number value.

Earthquakes with magnitude of about 2.0 or less are usually called microearthquakes; they are not commonly felt by people and are generally recorded only on local seismographs. Events with magnitudes of about 4.5 or greater are strong enough to be recorded by sensitive seismographs all over the world. Great earthquakes, such as the 1964 Good Friday earthquake in Alaska, have magnitudes of 8.0 or higher. The Richter scale is not used to express damage.

TABLE 3.2-1
MODIFIED MERCALLI INTENSITY SCALE

Intensity Value	Intensity Description	Average Peak Acceleration
I.	Not felt except by a very few persons under especially favorable circumstances.	< 0.0015 g ^a
II.	Felt only by a few persons at rest, especially on upper floors on buildings. Delicately suspended objects may swing.	< 0.0015 g
III.	Felt quite noticeably indoors, especially on upper floors of buildings, but many persons do not recognize it as an earthquake. Standing motorcars may rock slightly. Vibration similar to a passing of a truck. Duration estimated.	< 0.0015 g
IV.	During the day felt indoors by many, outdoors by few. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motorcars rocked noticeably.	0.015 g-0.02 g
V.	Felt by nearly everyone, many awakened. Some dishes, windows, etc., broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.	0.03 g-0.04 g
VI.	Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.	0.06 g-0.07 g
VII.	Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motorcars.	0.10 g-0.15 g
VIII.	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motorcars disturbed.	0.25 g-0.30 g
IX.	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.	0.50 g-0.55 g
X.	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.	> 0.60 g
XI.	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.	> 0.60 g
XII.	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown upward into the air.	> 0.60 g

NOTE: ^a g is gravity = 980 centimeters per second squared.

SOURCE: Bolt, Bruce A., *Earthquakes*, W. H. Freeman and Company, New York, 1988.

Liquefaction

Soil liquefaction can occur in seismic conditions. Liquefaction is the temporary transformation of saturated, non-cohesive material from a relatively stable, solid condition to a liquefied state as a result of increased soil pore water pressure. Soil pore water pressure is the water pressure between soil particles. Liquefaction can occur if three factors are present: seismic activity, loose sand or silt, and shallow ground water. Liquefaction potential has been found to be greatest where the ground water is within a depth of 50 feet or less, and submerged loose, fine sands occur within that depth. Liquefaction potential decreases with increasing grain size and clay and gravel content, but increases with increasing ground acceleration and duration of shaking.

3.2.2 MADERA SITE

TOPOGRAPHY

The Madera site is situated within the Great Valley Province; its mean elevation is 252 feet above sea level, with localized elevations ranging between 242 and 261 across the surface of the entire site. There are minor slopes resulting from the differences in elevation, however most of the ground surface is flat. An artificial drainage ditch, known as the Airport Ditch, lines the western boundary of the Madera site. A creek bed enters the Madera site from the southeast quadrant, and is channeled through the middle of the southern half of the Madera site. The channel proceeds directly west until it runs off site. There are no other remarkable topographical features on the Madera site.

SOILS

Madera County Soil Survey

The Natural Resource Conservation Service (NRCS) soil survey for Madera County (1990) identifies and plots soil units, and provides a summary of major physical characteristics for each unit for management considerations. In the land capability classification system used by the NRCS, soils are grouped by Soils Capability Class. A Soils Capability Class indicates limitations for practical use for food, fiber, or forage production. Classes are designated by Roman numerals I through VIII, with additional coding by subclass indicated by lower case letters. Class I is the least restricted with Class VIII being severely limited and nearly precluded from use for commercial crop production. Prime soils are those located on land which has a combination of physical and chemical characteristics best suited to produce forage, feed, food, and other crops. Soils Capability Class I and II soils form prime crop and pasture land, which, under provisions of the Farmland Protection Policy Act of 1980 (FPPA), must be evaluated in implementation of the National Environmental Policy Act (NEPA) for potential environmental effects if they are to be used for non-agricultural development. Further discussion related to the FPPA appears in **Section 3.8.3.**

The Land Capability Classification System is broken down into capability classes, subclasses and units, as applicable to the site. The Land Capability Classification System reflects a degree of limitation on soils for the suitability of most kinds of field crops. The soils in one capability unit are similar enough to require like constraints and management planning.

Madera Site Soils

The Madera site consists of the various soils shown on **Table 3.2-2**. The spatial distribution of these soils is shown on **Figure 3.2-3**. San Joaquin sandy loam (SaA) soils constitute the majority of soils on the Madera site. Areas of Atwater loamy sand, Hanford sandy loam, and Tujunga sandy loam are also present on the site. The San Joaquin, Atwater, and Hanford soils are all underlain by hardpans, while the Tujunga soil is associated with former and current drainages and swales. Pachappa and Alamo soils are located in the vicinity of the Madera site, outside the site boundary. All of the soils listed are identified as alluvial deposits.

Alamo series soils are generally poorly drained clays that overlie an iron-silica hardpan. The parent materials are mainly derived from granitic materials. Soils bearing the AsA symbol are typically associated with San Joaquin and Madera soils, usually in small areas. These soils are variable in depth, with poor drainage and very slow internal drainage. The erosion hazard of these soils is severe, with a moderate available water capacity. Runoff usually becomes ponded.

Soils of the Atwater series are well drained, and typically very deep, and are derived from parent materials comprising older granitic alluvium. Soil under the AwA symbol is moderately deep to deep over hardpan and well drained, with rapid internal drainage. Erosion hazard is severe, with a moderate available water capacity and very slow runoff.

Hanford series soils are generally textured, young alluvium derived from granitic materials with a high micaceous content; that is, containing high aluminum-silica compounds. Soils under the HfA symbol are moderately deep and well drained, with rapid internal drainage. The available water capacity of these soils is low. Erosion hazard is low, with moderately rapid runoff characteristics. Soils under the HgA symbol are shallow and well drained, with rapid internal drainage. Erosion hazard is slight, with a low available water capacity. Runoff characteristics are moderately rapid.

Soils of the Pachappa series are characteristic of alluvial fans mainly comprising older granitic alluvium. PaA soils are very deep, with good drainage and medium internal drainage. Erosion hazard is slight, with a moderate available water capacity. Runoff is very slow.

San Joaquin series soils are basically shallow hardpan consisting of micaceous materials derived from granitic rocks. SaA soils are shallow, with good external drainage and slow internal drainage. Erosion hazard is slight, with a low available water capacity. Runoff is slow, and in

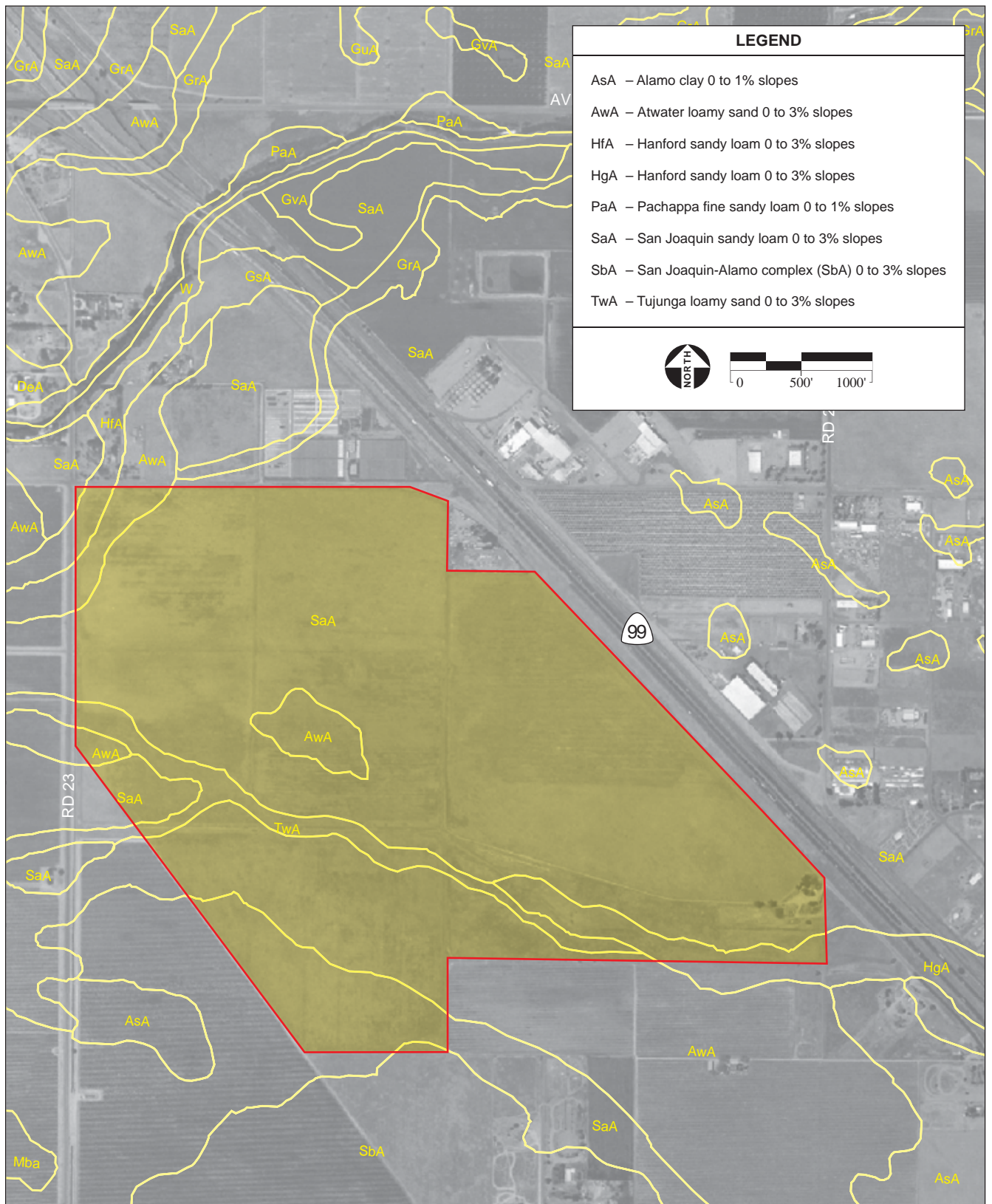
some places very slow. Soils in the San Joaquin-Alamo complex (SbA) differ in that they are variable in depth, with poor drainage and very slow internal drainage. While there is no erosion hazard, the available water capacity is moderate, and runoff is often ponded.

TABLE 3.2-2
SOIL LIMITATIONS

Soils	Depth	Drainage	Internal Drainage	Erosion	Available Water Capacity	Runoff	Storie Index Rating	Capability Subclass
Alamo clay (AsA) 0 to 1% slopes	Variable	Poor	Very slow	None	Moderate	Ponded	13	IIIW-5
Atwater loamy sand (AwA) 0 to 3% slopes	Variable	Well drained	Moderately rapid	Severe	Moderate	Very slow	76	IIle-4
Hanford sandy loam (HfA) 0 to 3% slopes	Moderately deep	Well drained	Rapid	Slight	Low	Moderately rapid	95	I-1
Hanford sandy loam (HgA) 0 to 3% slopes	Shallow	Well drained	Rapid	Slight	Low	Moderately rapid	67	IIIs-3
Pachappa fine sandy loam (PaA) 0 to 1% slopes	Very deep	Good	Medium	Slight	Moderate	Very slow	95	I-1
San Joaquin sandy loam (SaA) 0 to 3% slopes	Shallow	Good	Slow	Slight	Low	Slow to very slow	27	IVs-3
San Joaquin-Alamo complex (SbA) 0 to 3% slopes	Variable	Poor	Very slow	None	Moderate	Ponded	17	IVs-3
Tujunga loamy sand (TwA) 0 to 3% slopes	Moderate	Somewhat excessive	Very rapid	Severe	Low	Very slow	56	IIle-4

NOTE: Capability Class: Class I soils are considered to be very good for crops, with few limitations; Class III soils have severe limitations that reduce the choice of plants, that require special conservation practices, or both; Class IV soils have very severe limitations that can restrict the choice of plants or require very careful management.

SOURCE: NRCS 1990 Madera County Soil Survey; AES 2005.



SOURCE: U.S. Dept. of Agriculture, Natural Resources Conservation Service; AES, 2006

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Figure 3.2-3
Madera Site Soils

Tujunga series soils are derived from granitic alluvium. Soils under the TwA symbol are moderately deep, with somewhat excessive drainage. Internal drainage is very rapid, and there is a severe erosion hazard. The available water capacity of these soils is low. Runoff is very slow.

Madera Site Seismicity

The nearest seismic hazard is the San Andreas Fault, which is approximately 40 miles southwest of the Madera site, affecting the overall seismic risk factor for Madera County. **Figure 3.2-4** shows the seismic hazards associated with the region in and around Madera County. The Madera site is shown by the United States Geological Survey (USGS) to lie within an area considered subject to 0.2g to 0.3g maximum peak acceleration, with a 2 percent chance of exceedance in 50 years. On **Table 3.2-1** above, the MMI scale value assigned to such an event would be VIII. The description provided lists the following conditions: damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures, panel walls thrown out of frame structures, fall of chimneys, factory stacks, columns, monuments and walls. Heavy furniture overturned, sand and mud ejected in small amounts, changes occur in well water, and persons driving motorcars disturbed.

MINERAL RESOURCES

No mineral resources are known to exist on the Madera site. No mineral extraction or other mining activities take place on or in the vicinity of the Madera site.

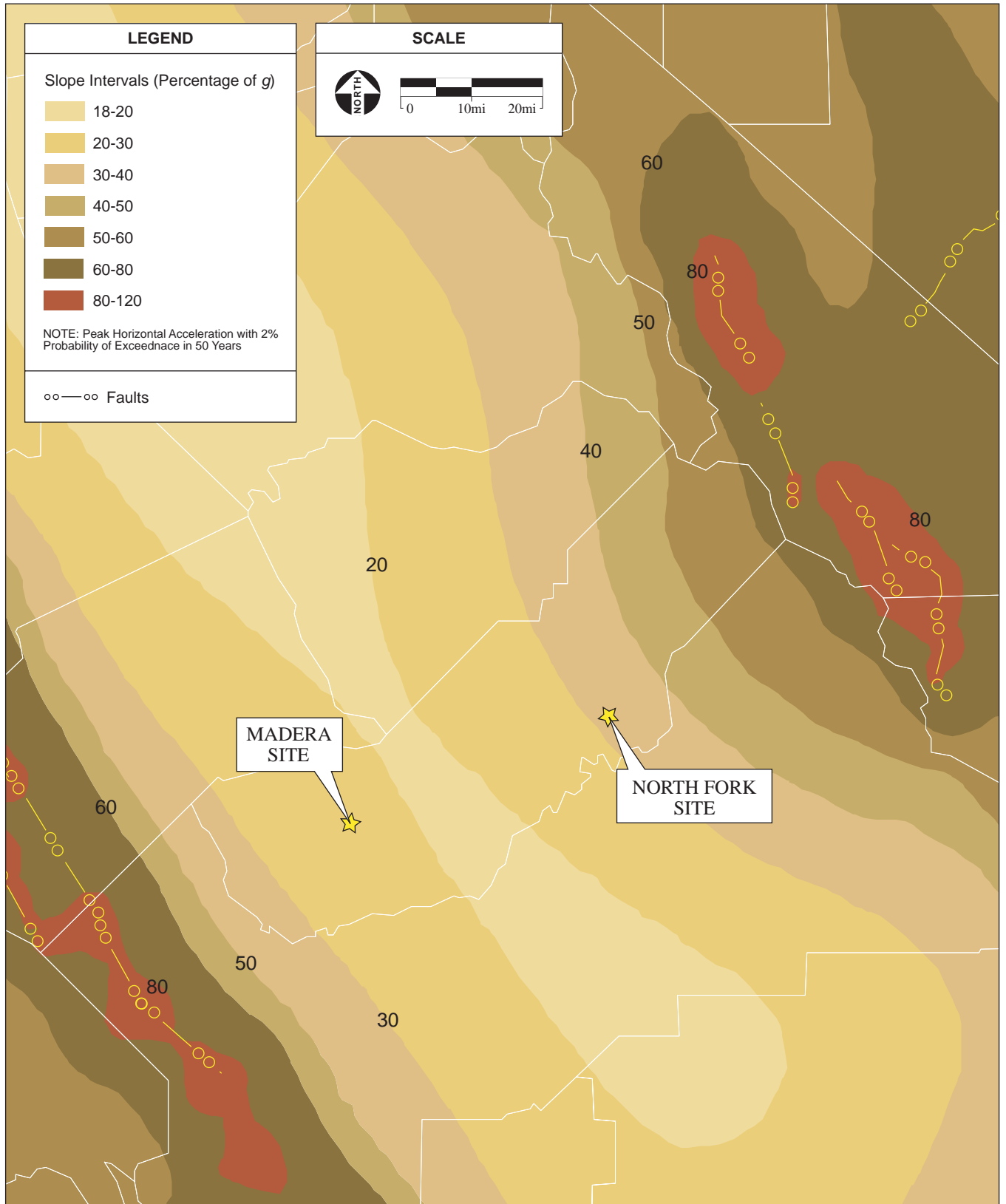
3.2.3 NORTH FORK SITE

TOPOGRAPHY

The North Fork Rancheria is located in the Sierra Nevada Geomorphic Province. Its maximum elevation is 3,340 ft in the northeast corner, while its minimum elevation is 2,860 ft in the southwest corner, resulting in a slope of approximately 17% from the northeast to southwest corners.

SOILS

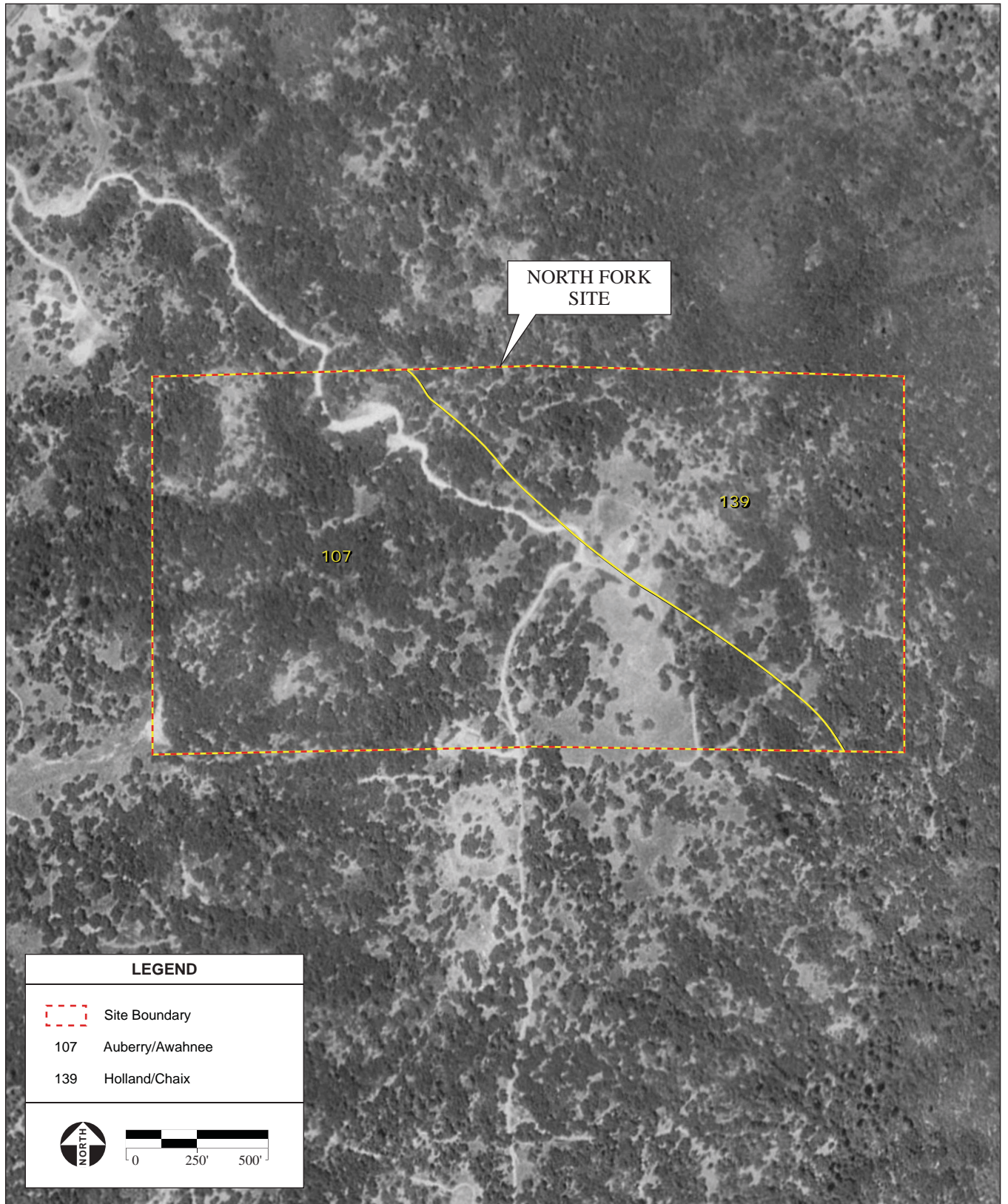
The soils of the North Fork site are mapped by the NRCS (NRCS, 2008). The North Fork site is composed primarily of granitic rock structures of Mesozoic age (**Figure 3.2-1**). The soils on the North Fork Rancheria have been identified as belonging to the Auberry-Ahwanee association and Holland-Chaix complex (**Figure 3.2.5**). Holland series soils are developed from coarse-grained granitic rocks, and are grayish-brown and reddish-brown in color. These soils are found at elevations between 2,700 and 5,500 feet, comparable to the North Fork site. Chaix soils are typically shallow (36-40 inches), and are also derived from weathered granitic rocks. Topography generally ranges from hilly to very steep for soils in this association, with slopes from 5-35%. Rock outcroppings are common in these soil areas. The Holland soils are deep,



SOURCE: U.S.G.S., 1996 National Seismic Hazards Map: U.S.G.S. Open File Report 96-532; AES, 2008

North Fork Casino EIS / 204502 ■

Figure 3.2-4
Madera County Seismic Hazard Map



SOURCE: NCRS Web Soil Survey, 2008; USGS Aerial Photograph, 7/16/1993; AES, 2008

North Fork Casino EIS / 204502 ■

Figure 3.2-5
North Fork Site Soils

whereas the Chaix soils are generally shallow, and found on sharper inclines. Auberry-Ahwahnee soils are associated with elevation ranging from 1,000 to 2,800 feet, on slopes that average 5 to 35 percent. Components include coarse sandy loam at/or near the surface and weathered bedrock at depth.

PROJECT AREA SEISMICITY

Figure 3.2-4 shows the seismic hazards associated with the region in and around Madera County. The North Fork Rancheria is approximately 80 miles northeast of the San Andreas Fault, with the continued uplift of intrusive igneous matter creating another fault system approximately six miles to the northeast. The North Fork site is shown by the USGS to lie within an area considered subject to 0.3g to 0.4g maximum peak acceleration, with a 2 percent chance of exceedance in 50 years. On **Table 3.2-1** above, the Modified Mercalli Intensity Scale value assigned to such an event would be between VIII and IX. The description provided lists the following conditions in a seismic event with an intensity value of IX: damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.

MINERAL RESOURCES

Historical records indicate extensive gold mining in the eastern Madera County town of Coarsegold. While some mining operations continue for the extraction of other mineral resources in the area, there is no known mineral resources contained on the North Fork site and no mining activity has taken place on the site.

3.3 WATER RESOURCES

This section addresses the existing water resources of the Madera County region, the Madera site and the North Fork site. Issues discussed in this section include a description of associated watersheds, existing runoff from the Madera and North Fork sites, the potential for flooding, and a characterization of surface and groundwater features and quality. Other sections of this document also address water resources. **Section 3.5 *Biological Resources*** provides a detailed characterization and map of the streams and wetlands on the Madera and North Fork sites. **Section 3.9 *Public Services*** describes the water supply for the City of Madera and groundwater wells on and near the Madera and North Fork sites. **Section 3.9** also provides details on existing water supply facilities, and regulatory requirements for wastewater treatment and disposal.

3.3.1 SURFACE WATER, DRAINAGE, AND FLOODING

REGIONAL SETTING

The topography of Madera County is composed of flat to moderately sloped alluvial fans and plains. Precipitation varies from year to year, but averages 11 to 12 inches annually. Most precipitation falls as rain in the winter, with a 25 year, 24 hour precipitation rainfall event of about 2.1 inches [Western Regional Climate Center (WRCC), 2005a] and a 100 year, 24 hour precipitation rainfall event of about 2.4 inches (WRCC, 2005b). The annual average evapotranspiration in the Madera region is 57.9 inches, with the highest evapotranspiration rates occurring during the summer months. Stream flow is dominated by precipitation and snowmelt in the Sierra Nevada. Dams and reservoirs regulate major streams and rivers, and water is diverted for irrigation.

Regionally, Madera County is located entirely within the San Joaquin River Hydrological Drainage Basin, the boundaries of which are formed by the ridgelines of the Sierra Nevada, the Tehachapi, and the Coast Ranges. The San Joaquin Drainage Basin covers an area over 10 million acres and includes all tributary watersheds for the San Joaquin River and the Delta south of the Sacramento River. Principal streams and larger tributaries in Madera County are the San Joaquin, Fresno, and Chowchilla Rivers. Runoff from the City of Madera is drained from east to west by several small rivers and streams, which are tributaries to Dry Creek. Dry Creek flows west from the City of Madera where it drains into the Fresno River and the Chowchilla River from the North. These rivers run parallel to each other and flow westward into the San Joaquin River. The San Joaquin River originates in the Sierra Nevada at an elevation over 10,000 feet above mean sea level (amsl) and enters the San Joaquin Valley near Friant. Below Friant Dam, the river flows west to the center of the valley, turns sharply north at Mendota Pool and flows through the valley to the Delta. Along the valley floor, the San Joaquin River receives flow from

the Merced, Tuolumne, and Stanislaus Rivers, and from smaller tributaries draining the east and west sides of the valley.

Madera County has experienced flooding on an average of every nine years since 1861; however, the construction of Hidden and Buchanan Dams in 1975 eliminated major flood concerns in the County. Flooding in Madera County can occur as a result of heavy rains, dam failure, excessive snowmelt and runoff, levee failure, and localized drainage problems. Principal flood problems, as identified in a Flood Insurance Study completed by the Federal Emergency Management Agency (FEMA) in 1987, lie along Cottonwood, Root, Dry, and Schmidt Creeks, and the Schmidt Creek Tributary (Madera County, 1995b). All have perennial flow, and all of the channels are poorly defined and subject to flooding. The most recent flooding occurred in January of 1993, in which parts of Madera County experienced flooding and soil erosion along the Fresno River and its tributaries. The construction of Buchanan, Hidden, and Friant dams, as well as levee improvements along the sloughs and rivers, have eliminated major flooding problems along the San Joaquin, Fresno, and Chowchilla Rivers.

MADERA SITE

Watershed

The Madera site lies within the Middle San Joaquin-Lower Chowchilla River Basin [United States Geologic Survey (USGS) Hydrologic Unit Catalog (HUC) No. 18040001], which includes the lower portions of the Chowchilla and Fresno Rivers (**Figure 3.3-1**). The Madera site lies approximately 2.25 miles north of the Fresno River, and less than 0.25 mile south of Dry Creek. Schmidt Creek is an ephemeral stream, flowing onto the Madera site along its eastern boundary. This stream is now channelized across the Madera site. Airport Ditch, a canal operated by Madera Irrigation District, runs along the western site boundary.

Drainage

The existing topography of the Madera site is relatively flat. The site slopes from its easterly boundary to Road 23 passing through the property at an average slope of 0.1 percent. Schmidt Creek flows westerly through the site from State Highway 99 to Road 23 and into Dry Creek. Existing storm runoff from the site sheet flows into tributary ditches of Schmidt Creek then to Dry Creek, then to the Fresno River. Schmidt Creek Ditch is a realigned channel of Schmidt Creek that was historically within a shallow swale of the site and flowed to the west according to the USGS “Kismet, CA” 7.5 Minute Topographic Quadrangle map. An irrigation canal (Airport Ditch) parallels Road 23 along the western edge of the property; however, it is not hydrologically connected with the Schmidt Creek Ditch (H. T. Harvey & Associates, 2004; **Appendix K**).

Floodplain

Schmidt Creek is the nearest water body that may cause potential flooding problems on the Madera site. The Madera site is currently situated within the boundaries of a delineated special flood hazard inundation zone as shown on the FEMA Flood Insurance Rate Maps (FIRM), panel numbers 0601700605B and 0601700600B (FEMA, 1987). The specific inundation zone is “Zone AO,” which represents an area of “100-year shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet.” In addition, oral interviews with the current land tenant who has lived on site for 10 years indicates that the Madera site floods often during the winter months (Flower, pers. communication, 2005). **Figure 3.3-2** depicts the delineated 100-year floodplain boundary in relationship to the Madera site.

Average flood depths for the Madera site are one foot, which are derived from the detailed hydraulic analyses shown within the flood zone map (Komex, 2008). Floodwaters on site progress from east to west as a result of excess runoff associated with Dry Creek and Schmidt Creek. The average floodplain width in proximity to the Madera site is about 11,100 feet (2± miles), and the overall terrain slope is mild from east to west. A small linear area along the eastern edge of the property boundary adjacent to Highway 99 is designated as Zone X, which is determined to be outside the 100-year and 500-year floodplains. Aside from this zone, the remaining area of the Madera site is designated as flood Zone AO, as described above.

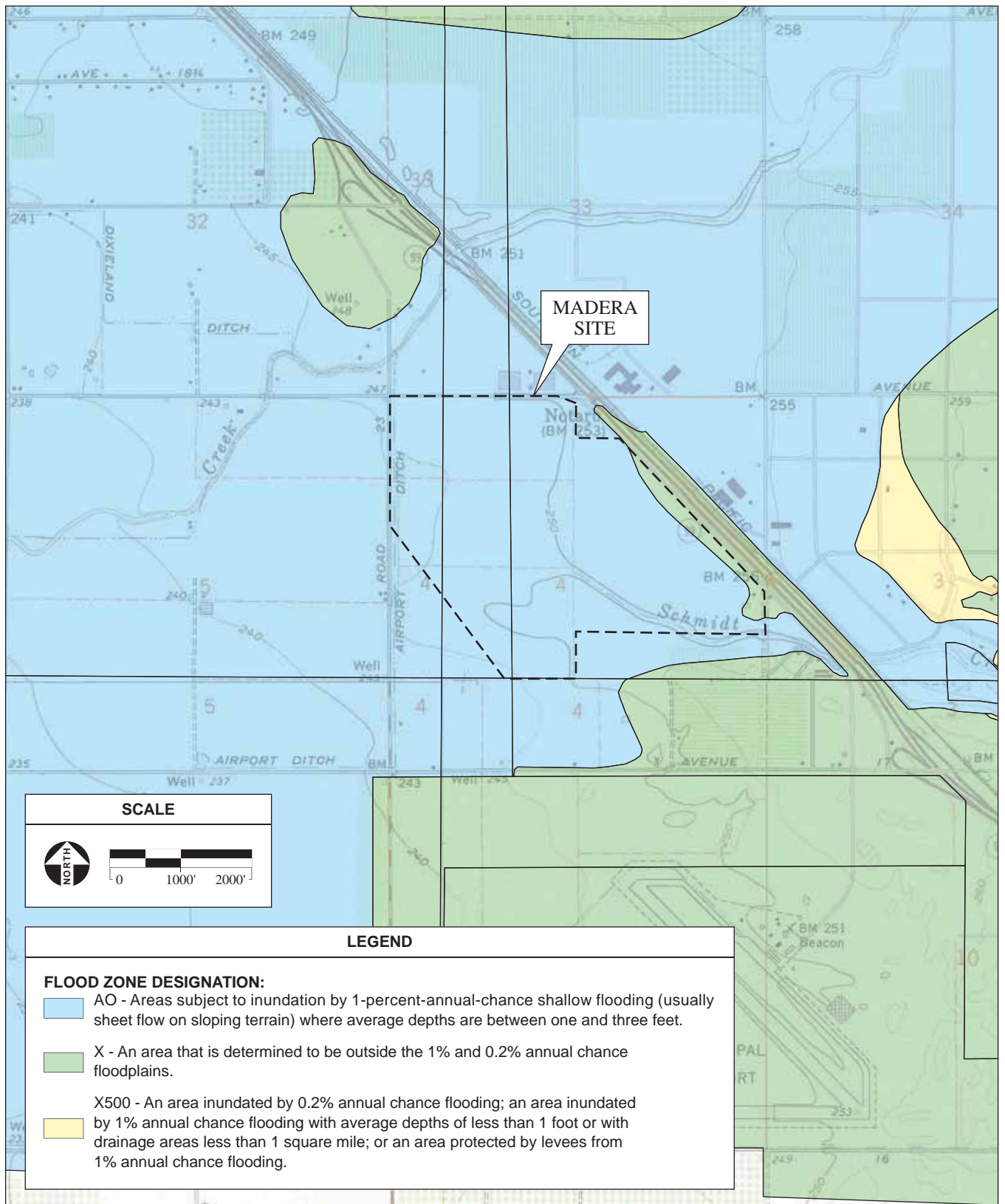
NORTH FORK SITE

Watershed

Locally, the North Fork site lies within the Upper San Joaquin Watershed Sub-basin (USGS HUC No. 18040006) (**Figure 3.3-3**), which includes the Middle, North, and South Forks of the San Joaquin River. A tributary stream to Whisky Creek flows across the eastern part of the North Fork site. Another stream, tributary to Willow Creek, originates near the southwestern corner of the property. Whisky Creek is located about 400± feet from the southeast corner of the property at the most adjacent location (**Figure 1-5**).

Drainage

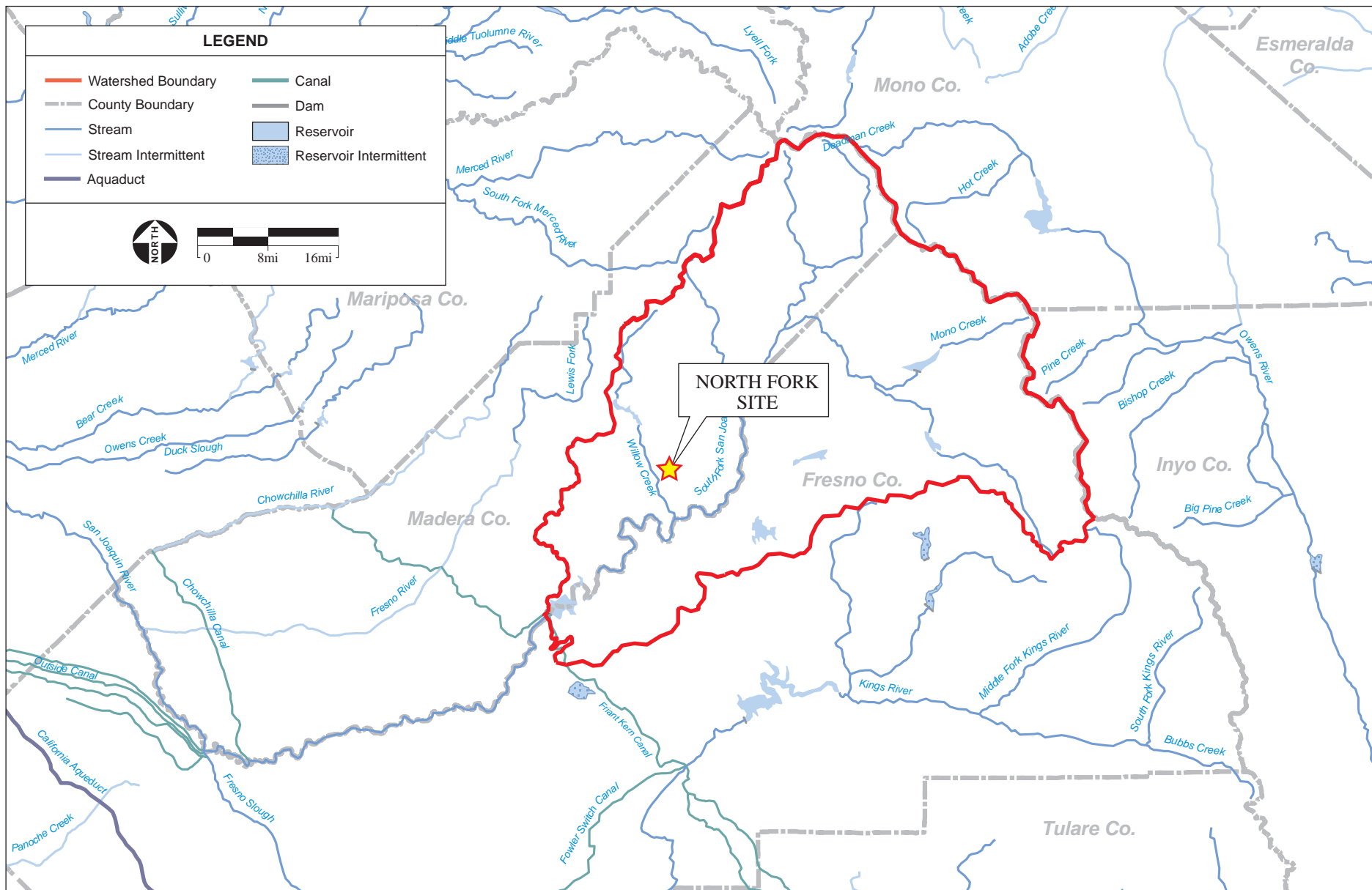
The North Fork site occupies wooded, south-facing slopes of the Sierra foothills, ranging in elevation from approximately 2,920 feet amsl in the southwest, to approximately 3,480 portion of the property to the eastern portion of the property. The site accepts runoff from the property east of Mission Drive and runoff sheet flows to the westerly property line into Whisky Creek. Whisky Creek flows south from the North Fork site into Willow Creek, which is a tributary of the San Joaquin River.



SOURCE: "Berenda, CA" & "Kismet, CA" USGS 7.5 Minute Topographic Quadrangles, Sections 32 & 33, T10S, R17E and Section 4, T11S, R17E, Mt. Diablo Baseline and Meridian ; FEMA National Flood Insurance Program Q3 Flood Data, May 1996; AES, 2006

North Fork Casino EIS / 204502 ■

Figure 3.3-2
Madera Site FEMA Flood Zone Map



SOURCE: AES, 2006

North Fork Casino EIS / 204502 ■

Figure 3.3-3
Upper San Joaquin Watershed Map

Floodplain

Whiskey Creek is the nearest water body that may cause potential flooding problems on the North Fork site. Based on the FIRM, panel number 0601700375B prepared by FEMA, the entire site is contained within Zone D, which is the flood insurance rate zone that corresponds to “an area of undetermined but possible flood hazards.” Based on the topography (**Figure 1-5**) and the relatively low flow of streams crossing the North Fork site, flooding is unlikely to occur, except in areas immediately adjacent to streambeds. In those adjacent areas, flooding is likely to be minor and temporary, possibly occurring during heavy storm events.

3.3.2 GROUNDWATER

REGIONAL SETTING

Groundwater is the water occurring beneath the earth’s surface that completely fills (saturates) the void space of rocks or sediment. Given that all rock has some open space (voids), groundwater can be found underlying nearly any location. In the San Joaquin Valley of western Madera County, potable groundwater occurs mainly in the unconsolidated alluvial deposits of Pleistocene and Holocene age [California Department of Water Resources (CDWR), 2004]. In the foothills to the east, groundwater occurs predominantly in fractured bedrock, but also in gravel- and silt-filled stream courses and meadows (Komex, 2008).

The Madera Sub-basin No. 5-22.06 of the larger San Joaquin River Hydrologic Unit underlies both the Madera site and the North Fork site. According to California’s Groundwater Bulletin 118, the Madera Sub-basin (the Sub-basin) contains no apparent groundwater barriers (CDWR, 2004). The Sub-basin consists of lands overlying the alluvium in Madera County. Although younger alluvium and flood-basin deposits yield small quantities of water to wells, the most important aquifer in the area is the older alluvium, which consists mostly of intercalated lenses of clay, silt, sand, and some gravel. The estimated average specific yield of the groundwater Sub-basin is 10.4 percent (CDWR, 2004).

Ground surface elevations in Madera County range from less than 300 feet amsl in the west to over 13,000 feet amsl in the east. Groundwater flow is generally southwestward in the eastern part of the Sub-basin and to the northwest in the southern portion, away from the recharge area along the San Joaquin River. According to calculations using an estimated specific yield of 10.4 percent and water levels collected by the CDWR, the total storage capacity of the Sub-basin is estimated to be 18,500,000 acre feet (af) to a depth of 300 feet and 40,900,000 af to the base of fresh groundwater.

MADERA SITE

The Madera site lies within the Madera Sub-basin of the San Joaquin Valley Groundwater Basin. Water-bearing units in the Madera Sub-basin comprise unconsolidated deposits of Pleistocene and Holocene age (CDWR, 2004). Borehole logs drilled near to the Madera site, obtained from CDWR, indicate alternating sandy and clayey layers to at least 700 feet below ground surface (bgs) with the sandier horizons generally accounting for between 25 percent and 40 percent of the total thickness (Komex, 2008). These drillings indicate the Madera site overlies the Older Alluvium aquifer found within Madera County (Komex, 2008). According to Komex (2008), an important regional aquitard, the E-clay or Corcoran Clay, is not thought to be present beneath the Madera site; its eastern boundary lies about 4 miles to the southwest.

Groundwater levels in the vicinity of the Madera site have been declining over time consistent with an overdraft situation, with accelerated declines occurring in the past few years, possibly due to a local increase in pumping and statewide drought. Specifically, between 1958 and 2006 the groundwater surface level declined approximately 115 feet (Komex, 2008 – **Appendix L**).

On-Site Groundwater Wells

One active agricultural well exists on the property. Komex attempted to measure the depth to groundwater, but an obstruction was met before groundwater was reached on each occasion. In lieu of direct measurements, maps produced by CDWR were used to approximate groundwater elevation levels as interpreted from spring measurements in designated wells. CDWR interpretations based on records for nearby wells exhibit an overall decline in groundwater levels of approximately 115 feet between 1958 and 2006, with the current groundwater level interpolated to be about 195 feet bgs (**Appendix L**). The dominant influence on groundwater flow direction in the area over the last 15 years appears to be a pumping depression located northwest of the Madera site, beneath an area approximately half way between the Cities of Madera and Chowchilla (Komex, 2008). Comparison of local well hydrographs, precipitation records and reservoir storage data shows short-term correlations between rainfall amount/storage and groundwater levels, but also a long-term decline in groundwater levels that are independent of climatic factors and related to an ongoing overdraft condition (**Appendix L**).

Municipal Water Supply

Currently, no municipal water supply exists at the Madera site. The City of Madera uses groundwater as its municipal supply and is regulated by the City's Public Works Department. Municipal Well Number 26 is located about one mile south of the Madera site at the intersection of Airport Drive and Aviation Drive. This well is approximately 600 feet deep and has a capacity of approximately 1,300 gpm. Municipal Well Number 25 is also located about 1.5 miles southeast of the Madera site, and is approximately 500 feet deep with a capacity of approximately 2,200 gpm. The groundwater level has been dropping in the region; however, the City has not

experienced any significant problems with supply or quality, although it has had to lower pump intakes in a number of municipal supply wells in recent years (City of Madera, 1992; Ward, 2008). Accordingly, the City plans to use groundwater to serve future development. Unincorporated areas generally rely on individual wells, but some are linked to the City's water system. New development in the State Center Community College Area is proposed to hook up to the City's water and sewer systems. The Fresno River runs through the center of Madera, but is not used for domestic water supply.

The Madera site is also located within the Madera Irrigation District (MID), which is one of four irrigation districts that manage surface water supply for agricultural irrigation in Madera County. The MID is the main water supplier in Madera County, covering the most acreage and managing the Madera Canal (located east of the Madera site) for the United States Army Corps of Engineers (USACE). A MID water supply ditch is located along the western border of the Madera site and the nearest public residential water supply lines are located about ½ mile south of the property along Airport Drive. The majority of the Madera site is classified by MID as capable of receiving irrigation water from the MID ditch; however, the existing owner of the property utilizes private groundwater wells for water supply and is currently not under contract to receive MID water.

NORTH FORK SITE

The North Fork site overlies granitic basement rocks, within which groundwater is present in fractures. Little information is available on groundwater occurrence, levels, flow, or storage; however, groundwater is widely used for domestic supply in the area, with wells reportedly achieving yields of between 10 and 240 gallons per minute (gpm).

On-Site Groundwater Wells

Domestic water supply is currently provided by four active wells located at private residences. The water level in one of these wells was measured at approximately 60 feet below ground surface (bgs) on April 13, 2005 (**Appendix L**). The depth of the wells was not determined, but the yield of the well was estimated to be less than 10 gpm. Several springs were also reportedly located near the residences and had historically been developed for water supply; however, the capacities of these springs are not known. Anecdotal evidence from current residents and other local residents suggests that a number of springs and wells exist on land allotments adjacent to the North Fork site. One of these wells was reportedly drilled to 400 feet bgs, and yielded 55 gpm at the time of installation. Another well reportedly tested at 100 gpm, with no measurable drawdown. Other wells are reported to have been drilled to at least 700 feet bgs.

Based on a study conducted by Madera County in 2002, the median well yield of 1,492 well log records in the foothills region of eastern Madera County is 8.5 gpm and average well yield is 22 gpm (HydroScience Engineers, 2006). These well yields are based on drillers' airlift tests, so

actual production may be lower. In 2007, Kenneth D. Schmidt and Associates (KDSA) conducted a hydrogeologic evaluation of the North Fork area. The KDSA study air-tested a total of 66 wells in the North Fork – Willow Creek subarea (the subarea that includes the North Fork site). These tests found that 30 percent of the wells had yields of less than 5 gpm, which is moderately low and 10 percent had yields exceeding 50 gpm, which is excellent. The remaining 60 percent of wells had yields between 5 and 50 gpm.

Overall water balance and current water demands in the foothill region suggest that a sufficient quantity of water is available on a regional basis to meet current demands and support some future development (City of Madera, 1992; Madera County, 1995b). This finding was confirmed by the recent KDSA study, which determined that groundwater recharge generally appears to be adequate compared to groundwater demand in the North Fork area, due to relatively high precipitation and low to moderate pumpage. Therefore, groundwater appears to be plentiful in the area of the North Fork site.

Municipal Water Supply

Currently there is no municipal water supply at the North Fork site. The North Fork Maintenance District 8A supplies water to the Town of North Fork, which is located approximately 5 miles west of the site. The water system has one 520-foot deep groundwater well, pumping 240 gpm into a 200,000-gallon storage tank. In 2002, water shortages had not been reported as an issue for this district (Komex, 2008). An additional existing well is currently inactive but available for future use.

Cascadel Water Company additionally supplies a community located about 4,000 feet northeast of the North Fork site. Water has been supplied from a spring and three wells. Wells 1 (525 feet deep) and 1A (650 feet deep) produce 57 gpm combined, and Well 2 (600 feet deep) produces 25 gpm (Cascadel Water Company, 2005).

3.3.3 WATER QUALITY

REGULATORY SETTING

In 1972, Congress passed the Federal Clean Water Act (CWA), which sets forth national goals for the quality of surface waters, applying to both point and non-point sources of pollution (33 USC Sections 402 and 319 respectively). These goals include maintaining waters safe for fishing and swimming, eliminating harmful discharges of pollution, and the protection of the nation's wetlands. The CWA also requires states to establish beneficial uses and set water quality standards for all contaminants in the surface waters and to review and update them on a triennial basis (Section 303(c)).

As a result of the 1987 CWA amendments, the United States Environmental Protection Agency (USEPA) established the National Pollutant Discharge Elimination System (NPDES), pursuant to the CWA (Sections 1251 to 1387). NPDES is a national program for regulating and administering permits for discharges to receiving waters. In some states, including California, the USEPA has delegated permitting authority to the state water quality management agencies; however, the USEPA continues to regulate discharges originating on Tribal lands into receiving waters. Under the CWA, Indian Tribes can be treated as states, implying the use of Tribal Government Regulations, for the purpose of NPDES program [33 USC § 1377(e)].

Section 303(d) of the CWA requires states to periodically prepare a list of all surface waters in the state for which beneficial uses of the water are impaired by pollutants. These are estuaries, lakes, streams, and groundwater basins that fall short of state surface water quality standards, and are not expected to improve within the next two years. States are also required to establish a priority ranking of these impaired waters for purposes of developing plans that include Total Maximum Daily Loads (TMDLs). A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards and an allocation of that amount to the pollutant's sources. These plans describe how an impaired water body will meet water quality standards through the use of TMDLs.

The State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Board (RWQCB) have adopted a Water Quality Control Plan for the State of California. The purpose is to provide a program of actions designed to preserve and enhance water quality and to protect the water supply for beneficial uses. The SWRCB has primary responsibility for establishing water quality standards in Madera County. In addition, the California Department of Fish and Game (CDFG) and the County Environmental Health Department have codes and ordinances, which also provide for water quality protection.

While the RWQCB does not have approval authority over the project alternatives, the goals and policies relating to Fresno River, Dry Creek, Schmidt Creek, and its tributaries contained within the Water Quality Control Plan for the Sacramento-San Joaquin Region (Basin Plan) are summarized to characterize the water quality issues in the project area.

Under the mandate of the Safe Drinking Water Act, the USEPA defines National Primary Drinking Water Regulations for groundwater (primary standards). These are legally enforceable standards that apply to public water systems. These standards are established to protect human health by limiting the levels of contaminants in drinking water. The USEPA also defines National Secondary Drinking Water Regulations (secondary standards). These secondary standards are non-enforceable. They regulate contaminants that cause cosmetic effects or aesthetic effects. USEPA recommends these standards to water systems but does not require systems to comply.

Both primary and secondary drinking water standards are defined as either Maximum Contaminant Levels (MCL) which are the highest level allowed in drinking water, or Maximum Contaminant Level Goals (MCLG) which are the level of contaminant below which there is no known or expected risk to health. The 1996 amendments to the Safe Drinking Water Act also require that states complete source water assessments for all public drinking water systems and include MCLs or MCLGs for all potential contaminants. Contaminants that may be present in untreated water include microbial contaminants, inorganic contaminants, pesticides and herbicides, radioactive contaminants, and organic chemical contaminants.

REGIONAL SETTING

Surface water quality in Madera County differs from east to west and from north to south, due to varying degrees of turbidity, color, odor and chemical characteristics. The differences in surface water quality are caused by the climate and the differences in the physical character of the geology in the smaller watersheds. The Sierra Nevada Mountains dispense low amounts of dissolved solids into east side streams and rivers, while the west side streams have a much higher salinity rate due to the sediments that comprise the Diablo Range of the Coastal Mountains. Similarly, the stream flow into the Merced River in the northern part of the County is of very good quality, but gradually decreases south through the Valley due to the inflow of excess irrigation waters.

The majority of the Madera Sub-basin is generally a calcium-sodium bicarbonate type, with sodium bicarbonate and sodium chloride at the western margin of the Sub-basin along the San Joaquin River (CDWR, 2004). The quality of groundwater is determined primarily by salt concentrations, and to a lesser degree by levels of nutrients, pesticides and other contaminants. Low quality groundwater is found throughout much of the San Joaquin Valley Basin with high levels of soil boron and total dissolved solids occurring west of the San Joaquin River. Additionally, concentrations of nitrates and pesticides are generally found in shallow wells northwest of Atwater. Overall groundwater quality is generally similar to surface water quality; it is good to excellent in the high foothill areas and decrease in quality toward the Valley center low areas.

Concentrations of total dissolved solids (TDS) within the Madera Sub-basin are in the 100 to 300 parts per million (ppm) range, but several wells in the Hillview Water Company systems had TDS concentrations that exceeded 10,000 ppm. Although these levels do not present a health concern, a more mineralized taste may result (HydroScience Engineers, 2005). Some water quality problems do occur in the County systems, including elevated concentrations of total coliform bacteria, gross alpha/uranium, arsenic, iron, and manganese. Although naturally occurring and typically related to the granitic rocks of the Sierra Nevada, elevated concentrations of gross alpha uranium and arsenic have rendered some sources of supply nonpotable. Elevated concentrations of iron and manganese seem to correlate to elevated turbidity in the sample and

may indicate iron and manganese that are in soil/rock particles in the sample and not actually dissolved in the water (Madera County, 1995b).

MADERA SITE

Surface Water Quality

The Madera site is located within the Middle San Joaquin-Lower Chowchilla Watershed area of the southern portion of the San Joaquin River Basin. The beneficial and potential beneficial uses of the Fresno River, Chowchilla River, and related tributaries are identified in the Sacramento-San Joaquin Basin Plan as follows:

- Municipal and Domestic Supply
- Agricultural Supply
- Water Contact Recreation
- Non-Contact Recreation
- Warm Freshwater Habitat
- Wildlife Habitat

The water quality objectives for the Sacramento-San Joaquin River Basin inland surface waters, including the Fresno River, are summarized in **Table 3.3-1** below.

Schmidt Creek and Fresno River are not designated as part of the RWQCB's 303(d) listing of impaired water bodies; however, the Fresno River drains into the San Joaquin River, which is listed as an impaired water body. The receiving waters are designated by the RWQCB to have existing beneficial uses as previously described.

TABLE 3.3-1
WATER QUALITY OBJECTIVES FOR INLAND SURFACE WATERS OF THE
SACRAMENTO-SAN JOAQUIN RIVER BASIN

Constituent	Water Quality Objective
Bacteria	In waters designated for contact recreation (REC-1) the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than ten percent of the total number of samples taken during any 30-day period exceed 400/100 ml.
Chemical Constituents	Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. Water designated for use as domestic or municipal (MUN) water supply shall not contain concentration of chemical constituents in excess of the maximum contaminant levels specified in the provisions of Title 22 of the California Code of Regulations. Water designated for use as MUN shall not contain lead in excess of 0.015 mg/l.
Color	Water shall be free of discoloration that causes nuisance or adversely affects beneficial uses.
Dissolved Oxygen	The dissolved oxygen concentrations shall not be reduced below the following minimum levels at any time for the following designated waters: <ol style="list-style-type: none"> 1. Cold Freshwater Habitat – 5.0 mg/l 2. Warm Freshwater Habitat – 7.0 mg/l 3. Spawning, Reproduction, and/or Early Development – 7.0 mg/l

Constituent	Water Quality Objective
Floating Material	Water shall not contain floating material in amounts that cause nuisance or adversely affect beneficial uses.
Oil and Grease	Waters shall not contain oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating of the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.
pH	The pH shall not be depressed below 6.5 nor raised above 8.5. changes in normal ambient pH levels shall not exceed 0.5 in waters designated cold freshwater habitat or warm fresh water habitat.
Pesticides	<p>Water quality objectives for pesticides include the following:</p> <ol style="list-style-type: none"> 1. No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses. 2. Discharges shall not result in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses 3. Total identifiable persistent chlorinated hydrocarbon pesticides shall not be present at concentrations detectable within the accuracy of analytical methods approved by the Environmental Protection Agency or the Executive Officer. 4. Pesticide concentrations shall not exceed those allowable by applicable anti-degradation policies. 5. Pesticide concentrations shall not exceed the lowest levels technically and economically achievable. 6. Waters designated for domestic or municipal supply shall not contain concentrations in excess of the Maximum Contaminant Levels set forth in the California Code of Regulations, Title 22, Division 4, Chapter 15. 7. Waters designated for domestic or municipal supply shall not contain concentrations of thiobencarb in excess of 1.0 µg/l.
Radioactivity	Radionuclides shall not be present in concentrations that are harmful to human, plant, animal or aquatic life that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to those life beings.
Sediment	The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
Settleable Material.	Waters shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.
Suspended Material	Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.
Tastes and Odors	Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic municipal water supplies or to fish flesh or other edible produces of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.
Temperature	The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses. At no time shall the temperature of Cold Freshwater Habitat or Warm Freshwater Habitat be increased more than 5 degrees Fahrenheit above natural receiving water temperature.
Toxicity	All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses to human, plant, animal, or aquatic life. This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances as specified by the Regional Water Board and other appropriate agencies to evaluate compliance with this objective.

Constituent	Water Quality Objective
Turbidity	Increased in turbidity attributable to controllable water quality factors shall not exceed the following: <ol style="list-style-type: none"> 1. Where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs) increases shall not exceed 1 NTU. 2. Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent. 3. Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs. 4. Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.

SOURCE: California RWQCB, 1998.

Groundwater Quality

Since the protection of designated beneficial uses are also relevant to groundwater quality, water quality objectives for the Sacramento-San Joaquin River Basin ground waters are also included in the Sacramento-San Joaquin Basin Plan (RWQCB, 1998). **Table 3.3-2** summarizes groundwater quality objectives.

TABLE 3.3-2
WATER QUALITY OBJECTIVES FOR GROUND WATERS OF THE SACRAMENTO-
SAN JOAQUIN RIVER BASIN

Constituent	Water Quality Objective
Bacteria	In ground waters used for domestic or municipal supply the most probably number of coliform organisms over any seven day period shall be less than 2.2/100 ml.
Chemical Constituents	Ground waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At a minimum, ground waters designated for use as domestic or municipal supply shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCL's) specified by the applicable provisions of Title 22 of the California Code of Regulations. At minimum, water designated for use as domestic or municipal supply shall not contain lead in excess of 0.015 mg/l.
Radioactivity	At a minimum ground waters designated for use as domestic or municipal supply shall not contain concentrations of radionuclides in excess of the maximum in excess of the maximum contaminant levels (MCL's) specified by the applicable provisions of Title 22 of the California Code of Regulations.
Tastes and Odors	Ground waters shall not contain taste – or odor- producing substances in concentrations that cause nuisance or adversely affect beneficial uses.
Toxicity	Ground waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial uses. This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances.

SOURCE: California RWQCB, 1998.

Groundwater quality is generally good, but manganese levels tend to increase with depth north of the City (HydroScience Engineers, Inc., 2006). Nitrogen problems appear to be the dominant land use related pollution problem. Sources of groundwater nitrogen pollution include fertilizers, animal manures, treated sewage from percolation ponds or land disposal, septic systems, natural geologic sources and plant residues from cropland and native vegetation.

According to the Madera County General Plan, there appears to be adequate groundwater in the County to sustain growth in the near term. In addition, according to Marvin Ward, Water Quality Specialist for the Madera Public Works Department, existing water supply capacity as of April 2008 is approximately 40.9 million gallons per day (mgd), with an average demand of 12.4 mgd. Mr. Ward stated that some of the extra capacity was used to provide a buffer during droughts and maintenance. Mr. Ward also noted that a new well (Well 32) was drilled in 2004 and brought online in May 2008. Another new well (Well 33) was brought online in 2005.

A source water assessment conducted for the City of Madera water system during February and March 2004 was included as an Appendix in the Water and Wastewater Feasibility Report (HydroScience Engineers, 2006) (**Appendix I**).

The summary of the assessment indicated that City Water Well No. 26, the nearest potential source of offsite water supply for the Madera site, was considered most vulnerable to airport activities (maintenance/fueling areas), automobiles (gas stations), historic waste dumps/landfills, and metal plating/finishing/fabricating. The activities indicated above were not associated with any detected contaminants and no current MCL exceedances from the Water Quality Inquiry database or from the State Department of Health Services exist for City Water Well No. 26.

Table 3.3-3 shows the contaminants found in the City of Madera water system. The State allows the City to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. .

Wastewater Effluent Quality

The nearest public sewer main is located about ½ mile south of the Madera site along Airport Drive. This main is operated by the City of Madera, which is served by a municipal wastewater treatment plant. The City of Madera has an activated sludge wastewater treatment plant, which is located at 13048 Road 21½ (at the intersection of Road 21½ and Avenue 13), and is approximately 5 miles southwest of the Madera site. The wastewater treatment plant (WWTP) currently treats an average of about 5.8 million gallons per day (mgd) and has a capacity of 10.1 mgd. Expansion to a 10.1 mgd capacity has recently been constructed to accommodate anticipated growth. The treated wastewater is conveyed to percolation beds for disposal. Wastewater effluent is treated to USEPA standards prior to discharge.

NORTH FORK SITE

Surface Water Quality

The North Fork site is located within the Upper Chowchilla-Upper Fresno Watershed area of the southern portion of the San Joaquin River Basin. The beneficial and potential beneficial uses of

the Fresno River, Chowchilla River, and related tributaries are identified in the Sacramento-San Joaquin Basin Plan as follows:

- Municipal and Domestic Supply
- Agricultural Supply
- Water Contact Recreation
- Non-Contact Recreation
- Warm Freshwater Habitat
- Wildlife Habitat

TABLE 3.3-3
CITY OF MADERA SOURCE WATER ASSESSMENT

Chemical Compound	MCL	MCLG	Range of Detection	Average	Typical Source of Contaminant
Primary Standards					
Arsenic (µg/L)	50	n/a	n/d – 4	0.67	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes.
Barium (µg/L)	1,000	2,000	n/d – 180	30	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits.
Nitrate (mg/L) [as NO ₃]	45	45	3 – 29	8.89	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits.
DBCP (µg/L)	0.20	n/a	n/d – 0.20	0.02	Banned nematocide that may still be present in soils due to runoff/leaching from former use on soybeans, cotton, vineyards, tomatoes, and tree fruit.
Ethylene dibromide (µg/L)	0.05	0.01	0.00 – 0.51	0.03	
Tetrachloroethylene (µg/L)	5	n/a	n/d – 2	0.22	Discharge from factories, dry cleaners, or auto shops.
Secondary Standards					
Chloride (mg/L)	500		16 – 42	22.40	Runoff/leaching from natural deposits; seawater influence.
Iron (µg/L)	300		n/d – 220	14.67	Leaching from natural deposits; industrial waste
Odor (TON)	3		1 – 1	1	Naturally occurring organic materials
pH (Std. Units)	6.5 – 8.5		5.9 – 7.4	6.55	
Specific Conductance (umho/cm)	1,600		190 – 600	273.33	Substances that form ions when in water, seawater influence.
Total Filterable Residue (mg/L)	1,000		140 – 400	200	Runoff/leaching from natural deposits.
Sulfate (mg/L)	500		3 – 17	6.75	Runoff/leaching from natural deposits, industrial waste.

Chemical Compound	MCL	MCLG	Range of Detection	Average	Typical Source of Contaminant
Lab Turbidity (NTU)	5		0 – 0.40	0.12	
General Minerals					
Copper (mg/L)	1.30	0.17	0 – 0.19	0.114	Internal corrosion of household plumbing systems, erosion of natural deposits, leaching from wood preservatives.
Fluoride (µg/L)	2,000	100	n/d – 100	13.35	Erosion of natural deposits, from water additive that promotes strong teeth.
Lead (mg/L)	0.02	0.002	n/d – 0.01	0.0002	Internal corrosion of household plumbing systems, discharge from industrial manufacturers, erosion of natural deposits.
Organics					
Tetrachlorethylene (µg/L)	5	60	0 – 2	0.22	Discharge from factories, dry cleaners and auto shops (metal degreaser)
Radioactivity					
Gross Alpha (pCi/L)	15		-0.24 – 11.3	0.96	Erosion of natural and man-made deposit.
Uranium (pCi/L)	20		-0.05 – 8.41	0.97	Erosion of natural deposits.

NOTES: Numbers shown in bold represent an exceedance of the correlating MCL. This exceedance was not representative of contaminants found at Well No. 26.

MCL = maximum contaminant level; DBCP = dibromochloropropane; µg/L = micrograms per liter or parts per billion; mg/L – milligrams per liter or parts per million; NTU = nephelometric turbidity units; MCLG = maximum contaminant level goal; n/a = not applicable; n/d = non-detect.

SOURCE: City of Madera, 2004.

The water quality objectives for the Sacramento-San Joaquin River Basin inland surface waters, including the Fresno River, are summarized in **Table 3.3-1** above.

Neither Whiskey Creek, the Fresno River, nor the Chowchilla River are designated as part of the RWQCB's 303(d) listing of impaired water bodies; however, the Fresno River drains into the San Joaquin River, which is listed as an impaired water body. The receiving waters are designated by the RWQCB to have existing beneficial uses as previously described for the Madera site.

Groundwater Quality

The Sacramento-San Joaquin Basin Plan includes water quality objectives for the Sacramento-San Joaquin River Basin ground waters for additional protection of designated beneficial uses (RWQCB, 1998). **Table 3.3-2** summarizes groundwater quality objectives above.

Although a source water assessment has not been conducted for wells on the North Fork site, a Phase I was performed by AES in 2005 (**Appendix P**). The Phase I included interviews with tribal residents and record searches for on-site water quality testing. According to tribal residents, the domestic water from the well located on the North Fork site has an unpleasant taste and odor.

The water was tested in 1998 and 2004 for general minerals, inorganic chemicals, and fecal coliform. The analytical results were compared to USEPA Title 22 drinking water standards that are protective of human health. The water samples from 1998 exceeded both maximum contaminant levels (MCLs) for iron and manganese. Elevated iron and manganese concentrations may be due to elevated turbidity in the sample and may not reflect actual groundwater concentrations. The resident only uses the water for bathing and no longer drinks the water from the well. Additionally, according to a member of the Tribe, a sheen on the surface of the water has been known to be present (AES, 2005).

The KDSA study noted that water quality was found to be excellent, with the exception of arsenic concentrations slightly exceeding the MCL in a relatively small area in and around the community of North Fork. Also, gross alpha radiation (an indicator of uranium) exceeded the MCL in wells over a fairly large area northwest of North Fork and south of Bass Lake (**Appendix L**).

Wastewater Effluent Quality

Currently there are no wastewater treatment facilities located on the North Fork site. Residential units currently utilize individual septic systems. The County-operated WWTP for the community of North Fork is located approximately one mile northwest of the site, near the intersection of Road 225 and Road 228. The WWTP uses extended aeration treatment for the 31,000 gpd it treats. Effluent is disposed of in sprayfields. Plans are underway to expand the existing wastewater treatment plant in the town of North Fork to a capacity of 60,000 gpd. The wastewater treatment plant expansion will use leachfields, in addition to the existing spray fields, for disposal of the disinfected effluent.

3.4 AIR QUALITY

3.4.1 REGIONAL METEOROLOGY

The Madera site is located in southwest Madera County, just north of the City of Madera and adjacent to State Route 99 in the San Joaquin Valley (SJV). The North Fork site is also in Madera County, but in the mountainous areas at around 3,000 feet elevation. Madera County is part of the San Joaquin Valley Air Basin (SJVAB). The California Air Resources Board (CARB) has divided California into regional air basins according to topographic air drainage features. The SJVAB is approximately 250 miles long and averages 35 miles in width, and is the second largest air basin in the State. Air pollution is directly related to a region's topographic features. The entire SJVAB is defined by the Sierra Nevada mountains in the east (8,000 to 14,000 feet in elevation), the Coast Ranges in the west (averaging 3,000 feet in elevation), and the Tehachapi mountains in the south (6,000 to 8,000 feet in elevation). The valley is basically flat with a slight downward gradient to the northwest. The valley opens to the sea at the Carquinez Straits where the San Joaquin-Sacramento Delta empties into San Francisco Bay. Thus, the SJV could be considered a "bowl" open only to the north.

Although marine air generally flows into the basin from the San Joaquin River Delta, the region's topographic features restrict air movement through and out of the basin. The Coast Ranges hinder wind access into the SJV from the west, the Tehachapis prevent southerly passage of airflow, and the high Sierra Nevada range is a significant barrier to the east. These topographic features result in weak airflow, which becomes blocked vertically by high barometric pressure over the SJV. As a result, the valley floor of the SJVAB is highly susceptible to pollutant accumulation over time. Most of the surrounding mountains are above the normal height of summer valley inversion layers (1,500 to 3,000 feet).

CLIMATE

Local climatological effects, including wind speed and direction, temperature, inversion layers, and precipitation and fog, can exacerbate the air quality problem in the valley portion of the SJVAB. In addition, microclimate conditions can exist that influence air quality within the mountainous areas of the SJVAB.

Wind Speed and Direction

Wind speed and direction play an important role in dispersion and transport of air pollutants. Wind at the surface and aloft can disperse pollution by mixing vertically and by transporting it to other locations.

During the summer, wind speed and direction data indicate that summer wind usually originates at the north end of the SJV and flows in a south-southeasterly direction through the SJV, through

Tehachapi pass, into the Southeast Desert Air Basin. The dominant wind flow pattern (day or night) in the valley portion of the SJVAB is from the northwest to the southeast, along the axis of the valley.

During the winter, wind speed and direction data indicate that wind occasionally originates from the south end of the SJV and flows in a north-northwesterly direction. Also during the winter months, the SJV experiences light, variable winds, less than 10 mph.

Superimposed on this seasonal regime is the diurnal wind cycle. In the SJV this cycle takes the form of a combination of sea breeze-land breeze and mountain-valley regimes. The sea breeze-land breeze regime has a sea breeze flowing into the SJV from the north during the day and a land breeze flowing out of the SJV at night. The mountain-valley regime has an upslope (mountain) flow during the day and a downslope (valley) flow at night. These phenomena add to the complexity of regional wind flow and pollutant transport within the SJVAB.

At night, the same general wind flow pattern continues, with some important exceptions. First, the air is no longer able to exit the southern end of the SJVAB because it encounters cooler drainage winds from the surrounding mountains. Consequently, it is forced back north to set up a circular flow pattern known as the Fresno eddy. The eddy circulates pollutants in a counterclockwise pattern, and returns polluted air to urban areas where more precursors are added the next day. Another important difference about the nighttime winds in the SJVAB is that they typically are caused by a jet stream of fast moving air at an altitude of about 1000 ft and a speed of up to 30 mph. Lastly, some of the pollutants transported to higher altitudes from daytime heating return to the valley at night because of drainage winds from the mountains.

Temperature

The SJVAB has an “inland Mediterranean” climate averaging over 260 sunny days per year. The valley floor (including the Madera site) is characterized by warm, dry summers and cooler winters. Summer high temperatures in the valley floor often exceed 100 °F, averaging in the low 90s in the northern valley and high 90s in the south. In the entire valley, high daily temperature readings in summer average 95 °F. Over the last 30 years, the valley averaged 106 days a year 90 °F or hotter, and 40 days a year 100 °F or hotter. The daily summer temperature variation can be as high as 30 °F.

Climate in the North Fork site area is demonstrated by data from the Western Regional Climate Center (2005) for the North Fork Ranger Station, approximately 2 miles south southwest of the North Fork site. Maximum high temperatures at the North Fork Ranger station since 1948 have averaged 90.7 °F during the summer months and the minimum nighttime temperatures have averaged 31.3 °F during the winter months. This station has recorded extremes of up to 110 °F in

October of 1951 and down to 6 °F in January of 1950. In the summer, the site can expect over 60 days above or equal to 90 °F and in the winter, over 50 days of sub freezing nights.

In winter, as the cyclonic storm track moves southward, the storm systems moving in from the Pacific Ocean bring a decidedly maritime influence to the SJV. The high mountains to the east prevent the cold, continental air masses of the interior from influencing the valley. Thus, winters are mild and humid. Temperatures below freezing are unusual. Average high temperatures in the winter are in the 50s, but highs in the 30s and 40s can occur on days with persistent fog and low cloudiness. The average daily low temperature is 45 °F.

Temperature Inversions

The vertical dispersion of air pollutants in the SJV is limited by the presence of persistent temperature inversions. Because of expansional cooling of the atmosphere, air temperature usually decreases with altitude. A reversal of this atmospheric state, where the air temperature increases with height, is termed an inversion. Inversions can exist at the surface, or at any height above the ground. The height of the base of the inversion is known as the “mixing height”. This is the level to which pollutants can mix vertically. Semi-permanent systems of high barometric pressure fronts frequently establish themselves over the SJVAB, deflecting low-pressure systems that might otherwise bring cleansing rain and winds.

Air above and below the inversion base does not mix because of differences in air density. Warm air above the inversion is less dense air than below the base. The inversion base represents an abrupt density change where little exchange of air occurs. This phenomenon is similar to that of the abrupt density change that separates skim and whole milk. Pollutant concentration levels are often directly related to inversion layers due to the limitation of mixing space.

Precipitation and Fog

Precipitation and fog tend to reduce or limit some pollutant concentrations, especially those reliant on sunlight. Precipitation in the SJV is strongly influenced by the position of the semi-permanent subtropical high-pressure belt located off the Pacific coast (Pacific High). In the winter, this high-pressure system moves southward, allowing Pacific storms to move through the SJV. These storms bring in moist, maritime air that produces considerable precipitation on the western, upslope side of the Coast Ranges. Significant precipitation also occurs on the western side of the Sierra Nevada. On the valley floor, however, there is some downslope flow from the Coast Ranges. The resultant evaporation of moisture from associated warming results in minimal precipitation. Nevertheless, the majority of the precipitation in the SJV is produced by those storms during the winter. Precipitation during the summer months is in the form of convective rain showers and is rare. It is usually associated with an influx of moisture into the SJV through the San Francisco area during an anomalous flow pattern in the lower layers of the atmosphere.

Although the hourly rates of precipitation from these storms may be high, their rarity keeps monthly totals low.

Precipitation on the SJV floor and in the Sierra Nevada decreases from north to south. Stockton in the north receives about 20 inches of precipitation per year; Fresno in the center receives about 10 inches per year; and Bakersfield at the southern end of the valley receives less than 6 inches per year. This is primarily because the Pacific storm track often passes through the northern part of the State while the southern part of the State remains protected by the Pacific High.

Precipitation in the SJVAB is confined primarily to the winter months with some also occurring in late summer and fall. Average annual rainfall for the entire SJV is 9.25 inches on the SJV floor. The North Fork Ranger Station has had an average of 31.59 inches of rain per year since 1948 with 67 percent occurring in the months of December through March.

Snowstorms, hailstorms, and ice storms occur infrequently in the SJV and severe occurrences of any of these are very rare. The winds and unstable air conditions experienced during the passage of storms result in periods of low pollutant concentrations and excellent visibility. Between winter storms, high pressure and light winds allow cold moist air to pool on the SJV floor. This creates strong low-level temperature inversions and very stable air conditions. This situation leads to the SJV's famous Tule Fogs¹. The formation of natural fog is caused by local cooling of the atmosphere until it is saturated (dew point temperature). This type of fog, known as radiation fog, is more likely to occur inland. Cooling may also be accomplished by heat radiation losses or by horizontal movement of a mass of air over a colder surface. This second type of fog, known as advection fog, generally occurs along the coast.

3.4.2 REGULATORY CONTEXT

FEDERAL CLEAN AIR ACT (CAA)

The Federal Clean Air Act (CAA) was first signed into law in 1963 with the purpose of controlling air pollution and providing a framework for national, state, and local air pollution control efforts. Congress amended the CAA in 1970, 1977, and 1990 (42 USC 7401 *et seq.*). Basic components of the CAA and its amendments include national ambient air quality standards (NAAQS) for major air pollutants, hazardous air pollutants standards, state implementation plan (SIP) requirements, motor vehicle emissions standards, and enforcement provisions.

National Ambient Air Quality Standards (NAAQS)

The NAAQS are ambient air quality standards that define clean air and are established to protect even the most sensitive individuals. An air quality standard defines the maximum amount of a

¹ Tule fog is a dense night and morning valley fog that is commonly known as "tule fog" because of its prevalence in marshy areas populated by tule reeds or cattails. Technically, it's a radiation fog, which forms as the ground cools off at night and radiates heat into space. (Null, 2001)

pollutant that can be present in outdoor air without harm to the public's health. NAAQS have been established for ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (PM), and lead.

State Implementation Plan (SIP)

The CAA requires states containing areas with air quality violating the NAAQS to prepare an air quality control plan, referred to as the SIP. The SIP contains the strategies and control measures that states such as California will use to attain the NAAQS. The SIP is not a single document, but a compilation of new and previously submitted plans, programs, rules, regulations, and controls. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, rules, and regulations of air basins as reported by the agencies with jurisdiction over them. Many of California's SIP documents rely on the same control strategies, including emission standards for cars and heavy trucks, fuel regulations, and limits on emissions from consumer products.

CALIFORNIA CLEAN AIR ACT (CCAA)

The California Clean Air Act (CCAA) was first signed into law by the State in 1988 (and amended in 1992), with the purpose of providing additional air quality planning requirements and other standards independent of the CAA. The CCAA delineates California's air quality goals, planning mechanisms, regulatory strategies, and standards of progress. The CCAA requires air districts like the SJVAPCD to develop and implement plans to attain California ambient air quality standards (CAAQS) established by CARB. In general, the district plans must be designed to achieve and maintain State ambient air quality standards through emission reductions from stationary and transportation sources by the "earliest practicable date," and must reduce excessive emissions of pollutants by five percent or more per year.

IMPLEMENTING AGENCIES

U.S. Environmental Protection Agency (EPA)

The United State Environmental Protection Agency (USEPA) has been charged with implementing the CAA at the national level. Unlike many Federal laws, the CAA calls for primary state and local oversight at the state and local level. If states are unsuccessful in regulating air quality, there are provisions in the CAA that allow the USEPA to assume authority from the state. For instance, the USEPA reviews SIPs to determine if they conform to the mandates of the CAA and will achieve air quality goals when implemented. If the USEPA determines a SIP to be inadequate, it may prepare a Federal Implementation Plan (FIP) for the non-attainment area and impose additional control measures.

Thus, the USEPA deals primarily with global, international, national, and interstate air pollution issues. Its primary role at the state level is one of oversight of state air quality agencies and

programs. The USEPA sets Federal standards for vehicle and stationary sources and provides research and guidance in air pollution programs.

California Air Resources Board (CARB)

CARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California; for implementing the CCAA; and for implementing much of the CAA within California. CARB's primary responsibilities include establishing CAAQS, approving local air plans, submitting the SIP to the USEPA, regulating mobile emission sources, and overseeing and providing technical support to California's 35 air districts, which are organized at the county or regional level. State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies, such as the Bureau of Automotive Repair, prepare SIP elements and submit them to CARB for review and approval.

San Joaquin Valley Air Pollution Control District (SJVAPCD)

Air districts have the primary responsibility for control of air pollution from all sources other than motor vehicle emissions, which are the responsibility of CARB and USEPA. Air districts adopt and enforce rules and regulations to achieve State and Federal ambient air quality standards and enforce applicable State and Federal law. Both the Madera and North Fork sites are located within the San Joaquin Valley Air Pollution Control District (SJVAPCD). The SJVAPCD has jurisdiction over air quality matters in the San Joaquin Valley Air Basin (SJVAB). Its headquarters are located in Fresno with regional offices located in Bakersfield in the Southern Region and Modesto in the Northern Region. Its jurisdiction includes the entire Counties of Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare and the central and western portion of Kern County.

Until the passage of the CCAA and 1990 CAA amendments, the primary role of air districts was controlling stationary sources of pollution, such as industrial processes and equipment. Air districts are now required to implement transportation control measures and are encouraged to adopt indirect source control programs to reduce mobile source emissions. These mandates created the necessity for air districts to work closely with cities, counties, and regional transportation planning agencies to develop new programs.

The SJVAPCD entered into a memorandum of understanding with the transportation planning agencies of the eight counties in the SJVAB in 1992. This memorandum of understanding ensures a coordinated approach in the development and implementation of transportation plans throughout the valley. This action has helped the regional transportation planning agencies comply with pertinent provisions of the CAA and CCAA, as well as related transportation legislation (such as the Intermodal Surface Transportation Efficiency Act).

AIR QUALITY STANDARDS, RULES, AND REGULATIONS

Federal and State Ambient Air Quality Standards

NAAQS and CAAQS have been established for certain “criteria pollutants” to protect public health and welfare. NAAQS have been established for ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (PM), and lead. For some of the pollutants, the USEPA and States have identified air quality standards expressed in more than one averaging time in order to address the typical exposures found in the environment. For example, CO is expressed as a one-hour averaging time and an eight-hour averaging time. Regulation of air pollution is achieved holding an area accountable to both national and state ambient air quality standards, as shown in **Table 3.4-1**, and setting emission limits for individual sources of air pollutants.

The USEPA has classified air basins or portions thereof as “unclassifiable²/attainment³” or “non-attainment⁴”, based on whether or not the NAAQS have been achieved or whether a determination is possible with available data. The USEPA has also classified the non-attainment areas according to the severity of pollution in each with each level requiring a different projected attainment date. There are five classes of non-attainment areas, ranging from marginal (relatively easy to clean up quickly) to extreme (will take a lot of work and a long time to clean up). The CAA uses the classification system to design cleanup requirements appropriate for the severity of the pollution and set realistic deadlines for reaching cleanup goals. Unclassified areas are those for which air monitoring has not been conducted but which are assumed to be in attainment.

As shown in **Table 3.4-2**, Madera County is part of the SJVAB, which was designated non-attainment under the Federal 8-hour ozone standard under subpart 2⁵ and classified as “serious” with an attainment deadline of June 2013. The entire County of Madera is also classified serious non-attainment for PM₁₀ and non-attainment for PM_{2.5}. Madera County meets the Federal standards or is unclassifiable for all other pollutants.

² Unclassifiable – any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant.

³ Attainment – any area that meets the national primary or secondary ambient air quality standard for the pollutant.

⁴ Non-attainment – any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for a pollutant.

⁵ Under subpart 2, areas are classified based on each area’s ozone design value. Control requirements depend on an area’s subpart 2 classification. Areas with more serious ozone pollution are subject to more prescribed requirements and are given longer to attain the standard. The requirements are designed to bring areas into attainment by their specified attainment dates.

TABLE 3.4-1
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	Standard		Violation Criteria	
		CAAQS	NAAQS	CAAQS	NAAQS
Ozone	1 hour	0.09 ppm	0.12ppm ^a	If exceeded	Revoked June 15, 2005
	8 hour	0.070 ppm	0.08 ppm	N/A	Average of the annual fourth highest daily maximum is greater than standard
Carbon monoxide	1 hour	20 ppm	35 ppm	If exceeded	If exceeded on more than 1 day per year
	8 hour	9 ppm	9 ppm	If exceeded	If exceeded on more than 1 day per year
Nitrogen dioxide	Annual average	N/A	0.053 ppm	N/A	If exceeded
	1 hour	0.25 ppm	N/A	If exceeded	N/A
Sulfur dioxide	Annual arithmetic mean	N/A	0.03 ppm	N/A	If exceeded
	24 hours	0.04 ppm	0.14 ppm	If exceeded	If exceeded on more than 1 day per year
	1 hour	0.25 ppm	N/A	If exceeded	N/A
Hydrogen sulfide	1 hour	0.03 ppm	N/A	If equaled or exceeded	N/A
Vinyl chloride	24 hours	0.01 ppm	N/A	If equaled or exceeded	N/A
Respirable particulate matter	Annual arithmetic mean	20 µg/m ³	50 µg/m ³	If exceeded	If exceeded
	24 hours	50 µg/m ³	150 µg/m ³	If exceeded	If expected number of days is < 1
Fine particulate matter	Annual arithmetic mean	12 µg/m ³	15 µg/m ³	If exceeded	If exceeded
	24 hours	N/A	65 µg/m ³	N/A	If 98% of daily averages, averaged over 3 years, greater than standard
Sulfate particles	24 hours	25 µg/m ³	N/A	If equaled or exceeded	N/A
Lead particles	Calendar quarter	N/A	1.5 µg/m ³	N/A	If exceeded no more than 1 day per year
	30-day average	1.5 µg/m ³	N/A	If equaled or exceeded	N/A

NOTES: National standards shown are the primary (health effects) standards.

N/A = not applicable.

^a This Standard was revoked June 15, 2005.

ppm = parts per million.

µg/m³ = micrograms per cubic meter.

SOURCE: CARB, 2005; AES, 2005.

TABLE 3.4-2
MADERA COUNTY NAAQS ATTAINMENT STATUS

Pollutant	Federal Attainment Status Designation – Classification
Ozone (8-hour)	Non-attainment ⁶ -- Serious
Respirable Particulate Matter (PM ₁₀)	Non-attainment -- Serious
Fine Particulate Matter (PM _{2.5})	Non-attainment ⁷
Carbon Monoxide	Unclassifiable/Attainment
Nitrogen Dioxide	Unclassifiable/Attainment
Sulfur Dioxide	Unclassifiable
Lead	Unclassifiable/Attainment

SOURCE: CARB 2005; AES, 2005.

CARB has classified air basins, or portions thereof, as unclassified⁸, transitional, attainment⁹, or non-attainment¹⁰, based on whether or not the CAAQS have been achieved or whether a determination is possible with available data. A non-attainment designation indicates a violation of the State standard. A non-attainment-transitional designation indicates improving air quality, with occasional violations or exceedances of the State standard. In contrast, an attainment designation indicates no violation of the State standard. Finally, an unclassified designation indicates either no or incomplete air quality data. CAAQS have been established for ozone (O₃), carbon monoxide (CO), particulate matter (PM), nitrogen dioxide, sulfur dioxide, sulfates, lead, hydrogen sulfide, and visibility-reducing particles.

In June 2002, CARB adopted a new State standard for fine particulate matter or PM_{2.5}. The State PM_{2.5} standard is 12 micrograms per cubic meter (µg/m³), measured as an annual arithmetic mean. When CARB adopted the State PM_{2.5} standard, it also made modifications to the existing State PM₁₀ and sulfates standards. CARB lowered the existing State annual PM₁₀ standard from 30 µg/m³ to 20 µg/m³ and revised the averaging method (from an annual geometric mean to an annual arithmetic mean). In addition, CARB changed the measurement method for the State sulfates standard, but left the level of the standard unchanged at 25 µg/m³ for a 24-hour averaging time. The old method for sulfates was based on

⁶ Ozone 8-hour non-attainment areas are those that have violated, or have contributed to violations of, the national 8-hour ozone standard over a three-year period.

⁷ PM_{2.5} non-attainment areas are those areas with air quality levels exceeding the standards, plus nearby areas contributing to such violations.

⁸ Unclassified – a pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or non-attainment.

⁹ Attainment – a pollutant is designated attainment if the state standard for that pollutant was not violated at any site in the area during a three-year period.

¹⁰ Non-attainment – a pollutant is designated non-attainment if there was at least one violation of a State standard for that pollutant in the area.

total suspended particulate matter or TSP measurements, while the new method is based on PM₁₀ measurements. All of these changes became effective on July 5, 2003. In addition, on April 28, 2005, CARB approved an 8-hour ozone standard of 0.070 ppm that became effective in May 17, 2006.

According to CARB and as presented in **Table 3.4-3**, the entire County of Madera has been designated non-attainment and classified severe under the 1-hour ozone designation, and is non-attainment for the State PM₁₀ 24-hour and annual average standards and the PM_{2.5} annual average standard. Madera County is either in attainment or unclassified for all other State standards.

TABLE 3.4-3
MADERA COUNTY CAAQS ATTAINMENT STATUS

Pollutant	State Attainment Status Designation – Classification
Ozone – 1-hour	Non-attainment – Severe
Respirable Particulate Matter (PM ₁₀) – 24-hour and annual average	Non-attainment
Fine Particulate Matter (PM _{2.5}) – annual average	Non-attainment
Carbon Monoxide – 8-hour and 1-hour	Unclassified
Nitrogen Dioxide – annual average and 1-hour	Attainment
Sulfur Dioxide – 24-hour and 1-hour	Attainment
Lead – 30-day average	Attainment
Particulate Sulfate – 24-hour	Attainment
Hydrogen Sulfide – 1-hour	Unclassified
Visibility Reducing Particles – 8-hour	Unclassified

SOURCE: CARB, 2005; AES, 2005.

A district with an area designated as non-attainment for any of the remaining pollutants is not subject to any specific statutory planning requirements. However, such districts must adopt and enforce rules and regulations to expeditiously attain the State standards for these pollutants (H&SC §§ 40001 and 40913). Furthermore, a non-attainment district has the option of developing and implementing an attainment plan or adopting regulations to control the emissions that contribute to these pollutants (H&SC § 40926).

State law does not impose any specific planning requirements upon districts with areas designated as attainment or unclassified. However, State law does require that the State standards not only be attained but also maintained. State law requires the districts and the Board to make a coordinated effort to protect and enhance the ambient air quality (H&SC §§39001 through 39003). As part of this effort, the districts must adopt rules and regulations sufficiently effective to achieve and maintain the State standards (H&SC §§40001 and 41500).

Health and Safety Code Section 39614

In 2003, the Legislature enacted Senate Bill 656, codified as Health and Safety Code (H&SC) Section 39614, to reduce public exposure to PM₁₀ and PM_{2.5}. Under H&SC Section 39614, CARB was required to develop, by January 1, 2005, a list of the most readily available, feasible, and cost-effective PM control measures available as of January 1, 2004 based on consultation with local air districts throughout the state of California. The resultant list is a collection of 103 rules that have been adopted by various air districts to reduce directly emitted PM or PM precursors (including oxides of nitrogen (NO_x), oxides of sulfur (SO_x), volatile organic compounds (VOCs)), carbon monoxide (CO), air toxic emissions, and ammonia. By July 31, 2005, Section 39614 required CARB and air districts to adopt implementation schedules for appropriate CARB and air district measures. Finally, no later than January 1, 2009, CARB must prepare a report describing actions taken to fulfill the requirements of the legislation as well as recommendations for further actions to assist in achieving the State PM standards. The bill requirements would sunset on January 1, 2011, unless extended.

SJVAPCD analyzed CARB measures and concluded that all but one of the measures that apply to District sources have been implemented or are in one of the District's attainment plans for adoption within the next two years. The exception was District Rule 4621 (Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants), which was to be amended in the third quarter of 2007. This rule is a control measure in the District's Extreme Ozone Attainment Demonstration Plan, but not within the two-year schedule window required by the State law. As a control measure in a Federal attainment plan, the rule did not represent a new commitment on the part of the District in order to meet the provisions of H&SC Section 39614. The District was already planning to adopt this control measure as part of the District's ozone control strategy.

Air Toxics Rules

Provisions in Title I of the CAA that address the control of hazardous air pollutant (HAP) emissions, or air toxics, are found in Section 112 of the CAA. Section 112 of the CAA includes provisions for the promulgation of National Emissions Standards for Hazardous Air Pollutants (NESHAP), or maximum achievable control technology (MACT) standards, as well as several related programs to enhance and support the program. The USEPA has identified 188 hazardous air pollutants. These pollutants are addressed by the NESHAP. The NESHAP are additional Federal emission limitations established for less widely emitted, but highly dangerous or toxic air pollutants that are not covered by the NAAQS. The 1990 CAA Amendments direct the USEPA to set standards for all major sources of air toxics (and some area sources that are of particular concern). The activities and responsibilities required under Section 112 directly affect not only the USEPA, but State and local regulatory agencies as well. The complexity and

number of these requirements necessitate a high degree of coordination and cooperation between the regulators to ensure that these programs are carried out effectively.

The SJVAPCD has regulations that require compliance with the asbestos demolition and renovation requirements developed by the USEPA in the NESHAP regulation, 40 CFR, Part 61, Subpart M. Regulated facilities subject to the NESHAP include all commercial buildings, residential buildings with more than four dwelling units, other structures, and non-portable equipment. A single-family dwelling or residential building with four or fewer dwelling units may be exempt, depending on its past use and future use of the property. The USEPA has extensive policy on NESHAP applicability to these structures.

The California Air Toxics Program establishes the process for the identification and control of toxic air contaminants and includes provisions to make the public aware of significant toxic exposures and for reducing risk. CARB's statewide comprehensive air toxics program was established in the early 1980's. California regulates air toxics through AB 1807, the Toxic Air Contaminant Identification and Control Act of 1983 and Assembly Bill (AB) 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987. Under AB 1807, CARB and the Office of Environmental Health Hazard Assessment (OEHHA) are required to list TACs based on a risk assessment process that evaluates the potential for human exposure and the health effects of a substance. AB 2588 supplements the AB 1807 program by requiring a Statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks. Individual emitters of toxic air contaminants (TAC) are required by AB 2588 to prepare Toxic Emission Inventory Plans and Reports, allowing the local air quality management district to identify and inventory toxic emissions. In 1993, the California Legislature passed AB 2728, requiring that the listed Federal hazardous air pollutants are identified as State TACs.

SJVAPCD Rules and Plans

SJVAPCD exercises permit authority through its rules and regulations. California Health and Safety Code Section 40702 specifies the SJVAPCD's rule-making authority. In addition, the District's rules and regulations are based on other Federal and State air quality requirements. Air quality rules and regulations are developed by District staff and adopted by the District's Board of Directors with specific requirements for public notification and public comment periods during the rule development process. Details of SJVAPCD rules and plans can be seen at <http://www.arb.ca.gov/drdb/sju/cur.htm>.

These plans include a 2003 PM₁₀ Plan, which met an annual 5 percent reduction requirement and provides for the implementation of best available control measures (BACM). The SJVAPCD is in the process of implementing the BACM contained in that plan and is also working on a 2006 PM₁₀ Plan as specified in USEPA's approval notice. On May 19, 2005, the Board adopted the 2005 Amendments to the 2003 PM₁₀ Plan, primarily to revise the contingency measure discussion and to update schedules for rule adoption.

Air districts continuously monitor their progress in implementing attainment plans and must periodically report on progress to CARB and the USEPA. They also periodically revise attainment plans to reflect new conditions and requirements in compliance with schedules mandated by the CCAA and the Federal CAA amendments. The California Health and Safety Code (CH&SC) requires non-attainment districts to prepare reports every three years summarizing progress in meeting the schedules for developing, adopting, and implementing the air pollution control measures contained in each district's plan for attaining the California standards. The CH&SC also requires districts to review and revise their State air quality attainment plans once every three years, beginning in 1994, to correct for deficiencies in meeting the interim measures of progress and to incorporate new data into the plan. To meet federal CAA requirements, the SJVAPCD submitted all required "Rate of Progress" and "Reasonable Further Progress" plans to show that programs adopted by the District would reduce air pollutant emissions.

The 1994 Ozone Attainment Demonstration Plan outlined the SJVAPCD's control strategy for meeting the Federal one-hour NAAQS by November 15, 1999. However, the SJVAB did not attain the Federal 1-hour ozone standard by November 15, 1999, which led to a series of USEPA actions requesting additional rulemaking and plan development activities. In response to SJVAPCD and CARB requests, the USEPA eventually classified the SJVAB as extreme non-attainment for the Federal 1-hour ozone standard (effective May 17, 2004), which requires attainment of the standard by November 15, 2010.

In December 2002, the SJVAPCD's Governing Board adopted the Amended 2002/2005 Rate of Progress (ROP) Plan for San Joaquin Valley Ozone. This plan demonstrated that the SJVAPCD's VOC and NO_x emissions reductions met Federal requirements for 2002 and 2005. This plan satisfied all of the USEPA's requirements except demonstration of attainment of the Federal 1-hour ozone standard. In July 2003, USEPA found the motor vehicle emissions budget in this plan to be adequate for transportation conformity purposes. In September 2003, USEPA found the 2002/2005 ROP Plan to be complete.

In 2003 and 2004, the SJVAPCD prepared the Extreme Ozone Attainment Demonstration Plan (OADP). The Extreme OADP demonstrates attainment of the Federal 1-hour ozone standard by November 15, 2010, demonstrates that VOC and NO_x emission reductions in the SJVAB meet Federal rate of progress requirements for 2008 and 2010, and fulfills State of California requirements for a triennial progress report on and revision of the District's 1991 Air Quality Attainment Plan, which is directed at attainment of the California ozone air quality standard.

The CARB submitted the 2004 Extreme OADP to USEPA on schedule on November 15, 2004. The Plan has been deemed complete and is currently in review at USEPA. The Extreme OADP sets forth the emission reductions and timeline for attaining the Federal 1-hour ozone ambient air quality standards in the SJVAB by November 15, 2010. The SJVAPCD, in conjunction with CARB, the USEPA, and the eight regional Transportation Planning Agencies (TPAs) in the valley, developed the plan to provide

healthy air for all of the valley's people and to meet Federal and State requirements for ozone planning documents.

On April 30, 2004 EPA issued a final rule revoking the Federal 1-hour ozone standard, effective June 15, 2005 (69 FR 23858). Therefore, effective June 15, 2005, the SJVAB was no longer non-attainment for the Federal 1-hour standard, and the November 15, 2010 date for attainment was eliminated. While the Federal 1-hour ozone standard was officially revoked on June 15, 2005, the new 8-hour rule also addresses anti-backsliding provisions in the CAA; so 8-hour ozone non-attainment areas remain subject to control measure commitments that applied under the 1-hour ozone standard. SJVAPCD focus has now shifted to the attainment of the 8-hour standard, and SJVAPCD and State emission control measures committed to in the Extreme OADP will be implemented for their contribution toward reducing 8-hour ozone levels.

Climate Change

Federal

In 1997 the Council on Environmental Quality (CEQ) circulated an internal draft memorandum (CEQ, 1997a) on how global climate change should be treated for the purposes of the National Environmental Policy Act (NEPA). The CEQ draft memorandum advised federal lead agencies to consider how proposed actions subject to NEPA would affect sources and sinks of greenhouse gases (GHGs). During the same year, CEQ released guidance on the assessment of cumulative effects in NEPA documents (CEQ, 1997b). Consistent with the CEQ draft memorandum, GHGs were offered as one example of a cumulative effect.

State

California has been a leader among the states in outlining and aggressively implementing a comprehensive climate change strategy that is designed to result in a substantial reduction in total statewide GHG emissions in the future. California's climate change strategy is multifaceted and involves a number of state agencies implementing a variety of state laws and policies. We have attempted to briefly summarize these laws and policies below.

Assembly Bill 1493 (AB 1493)

Signed by the Governor in 2002, AB 1493 requires that the CARB adopt regulations requiring a reduction in GHG emissions emitted by cars in the state. AB 1493 is intended to apply to 2009 and later vehicles, however recently the USEPA has denied a CAA waiver, which the state needs in order to implement AB 1493. Although the state is apparently planning to appeal this decision, at this time it is unclear whether AB 1493 will be implemented (Bee, 2007).

Executive Order S-3-05 (EO S-3-05)

Executive Order (EO) S-3-05 was signed by the Governor on June 1, 2005. EO S-3-05 established the following statewide emission reduction targets:

- Reduce GHG emissions to 2000 levels by 2010,
- Reduce GHG emissions to 1990 levels by 2020, and
- Reduce GHG emissions to 80 percent below 1990 levels by 2050.

EO S-3-05 created a “Climate Action Team” or “CAT” headed by the California Environmental Protection Agency and including several other state agencies. The CAT is tasked by EO S-3-05 with outlining the effects of climate change on California and recommending an adaptation plan. The CAT is also tasked with creating a strategy to meet the emission reduction target required by the EO. In April 2006 the CAT published an initial report that accomplished these two tasks (**Appendix W**).

Assembly Bill 32 (AB 32)

Signed by the Governor on September 27, 2006, AB 32 codifies a key requirement of EO S-3-05, specifically the requirement to reduce statewide GHG emissions to 1990 levels by 2020. AB 32 tasks CARB with monitoring state sources of GHGs and designing emission reduction measures to comply with the law’s emission reduction requirements. However, AB 32 also continues the CAT’s efforts to meet the requirements of EO S-3-05 and states that the CAT should coordinate overall state climate policy.

In order to accelerate the implementation of emission reduction strategies, AB 32 requires that CARB identify a list of discrete early action measures that can be implemented relatively quickly. In October 2007, CARB published a list of early action measures that it estimated could be implemented and would serve to meet about a quarter of the required 2020 emissions reductions (CARB, 2007a; **Appendix W**). In order to assist CARB in identifying early action measures, the CAT published a report in April 2007 that updated their 2006 report and identified strategies for reducing GHG emissions (CAT, 2007; **Appendix W**). In its October 2007 report, CARB cited the CAT strategies and other existing strategies that may be utilized in achieving the remainder of the emissions reductions. AB 32 requires that CARB prepare a comprehensive “scoping plan” that identifies all strategies necessary to fully achieve the required 2020 emissions reductions. According to AB 32 this scoping plan must be in place no later than January 1, 2009. CARB has initiated preparation of the scoping plan and plans on adopting a final plan in late 2008 (CARB, 2007b).

Executive Order S-01-07 (EO S-01-07)

EO S-01-07 was signed by the Governor on January 18, 2007. It mandates a statewide goal to reduce the carbon intensity of transportation fuels by at least 10 percent by 2020. This target reduction was identified by CARB as one of the AB 32 early action measures identified in their October 2007 report.

Western Regional Climate Initiative

The Western Regional Climate Initiative creates a coalition of western states (California, Washington, Oregon, Arizona, New Mexico) and British Columbia, Canada that have agreed to collaborate on identifying, evaluating, and implementing regional mechanisms for reducing GHG emissions. In light of this goal, the Initiative creates a regional emissions registry and plans the creation of a regional market-based multi-sector emissions reduction mechanism by August 2008.

Senate Bill 97 (SB 97)

Signed by the governor on August 24, 2007, SB 97 requires that no later than July 1, 2009, the state Office of Planning and Research (OPR) prepare California Environmental Quality Act (CEQA) guidelines for evaluating the effects of GHG emissions and for mitigating such effects. The Resources Agency is required to certify and adopt these guidelines by January 1, 2010. It is anticipated that this guidance would establish standardized significance criteria for the purposes of assessing project impacts pursuant to CEQA. In the absence of current guidelines, OPR has referred CEQA document authors to existing guidelines, examples of impact analysis in existing CEQA documents (which OPR acknowledges ranges greatly from little analysis due to the speculative nature of climate change impact analysis to the calculation of GHG emissions and the inclusion of mitigation), and to a variety of white papers on the subject of GHG impact analysis, including one prepared by the Association of Environmental Professionals (OPR, 2007).

3.4.3 POLLUTANTS OF CONCERN

Air pollution comes from many different sources. Sources are subdivided into four major emission categories: stationary sources, area-wide sources, mobile sources, and natural sources. Stationary source emissions are based on estimates made by facility operators and local air districts. Emissions from specific facilities can be identified by name and location. CARB and local air districts estimate area-wide emissions. Emissions from area-wide sources may be either from small individual sources, such as residential fireplaces, or from widely distributed sources that cannot be tied to a single location, such as consumer products and dust from unpaved roads. CARB staff estimates mobile source emissions with assistance from districts and other government agencies. Mobile sources include on-road cars, trucks, and buses and other sources such as boats, off-road recreational vehicles, aircraft, and trains. CARB staff and the air districts also estimate natural sources. These sources include biogenic hydrocarbons, geogenic

hydrocarbons, natural wind-blown dust, and wildfires. These pollution sources can emit a wide variety of pollutants, which can affect air quality in many ways. Following are the pollutants of particular concern in the SJVAB.

CARBON MONOXIDE

Carbon monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes about 56 percent of all CO emissions nationwide. Other non-road engines and vehicles (such as construction equipment and boats) contribute about 22 percent of all CO emissions nationwide. Higher levels of CO generally occur in areas with heavy traffic congestion. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are sources of CO indoors. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. Under inversion conditions warm air is unable to rise and the air pollution becomes trapped near the ground beneath a layer of warm air.

CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. The health threat from lower levels of CO is most serious for those who suffer from heart disease, like angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. High levels of CO can affect even healthy people. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

Motor vehicles are the dominant source of CO emissions in most areas. CO is described as having only a local influence because it dissipates quickly. High CO levels develop primarily during winter when periods of light winds combine with the formation of ground level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Because CO is a product of incomplete combustion, motor vehicles exhibit increased CO emission rates at low air temperatures. High CO concentrations occur in areas of limited geographic size sometimes referred to as hot spots. Since CO concentrations are strongly associated with motor vehicle emissions, high CO concentrations generally occur in the immediate vicinity of roadways with high traffic volumes and traffic congestion, in active parking lots, and in automobile tunnels. Areas adjacent to heavily traveled and congested intersections are particularly susceptible to high CO concentrations.

State and Federal CO standards have been set for both 1-hour and 8-hour averaging times. The State 1-hour standard is 20 parts per million (ppm) by volume, while the Federal 1-hour standard is 35 ppm. The 8-hour standard for both is 9 ppm. Madera County is designated unclassified for the State ambient CO standards and unclassifiable/attainment for the Federal CO standards.

OZONE

Ozone is a highly reactive gas molecule composed of three oxygen atoms (O_3); it has a light blue color at very high concentrations. Ozone occurs naturally at altitudes high in the stratosphere (35,000 to 65,000 feet, depending on latitude and season) where it shields life on earth from harmful ultraviolet radiation. Depletion of stratospheric ozone by chemical reactions involving anthropogenic chemicals (principally chlorofluorocarbons) allows this radiation to reach the earth's surface, thereby endangering the biosphere. Ozone is also present in the first few hundred feet of elevation above ground level (in the troposphere) due to chemical reactions between hydrocarbons and nitrogen oxides from natural and anthropogenic sources in the presence of sunlight. Because of its reactivity, tropospheric ozone present in high enough concentrations as an air pollutant adversely affects human health and damages crops and materials. All references to "ozone" in this document refer to tropospheric ozone.

Ozone is not emitted directly into the air, but is formed by a photochemical reaction in the atmosphere. Ozone is the product of a series of chemical reactions involving sunlight, reactive organic gases (ROG)¹¹, and nitrogen oxides (NO_x). ROG and NO_x are "ozone precursors" and are considered primary pollutants because they are emitted directly into the atmosphere. ROG is composed of hydrocarbon compounds that contribute to the formation of smog by its involvement in atmospheric chemical reactions. Ozone is considered a secondary pollutant because it is formed in the atmosphere from primary pollutants via photochemical reactions. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem and often the effects of the emitted ROG and NO_x are felt a distance downwind of the emission sources.

Generally, the higher the temperature, the more ozone is formed within the valley, since reaction rates increase with temperature. However, extremely hot temperatures can "lift" or "break" the inversion layer. Typically, if the inversion layer doesn't lift to allow the build-up of contaminants to be dispersed into the Southeast Desert, the ozone levels will peak in the late afternoon, sometimes as late as 3 to 7 p.m. If the inversion layer breaks and the resultant afternoon winds occur, the ozone will peak in the early afternoon and decrease in the late afternoon as the contaminants are transported to the Southeast Desert.

¹¹ Reactive organic gases are also sometimes called volatile organic compounds (VOCs). CARB originally expressed hydrocarbon emissions data as reactive organic gases rather than volatile organic compounds. However, CARB now considers the terms to be synonymous. VOC emissions are a subset of ROG emissions.

Because sunlight is required to form ozone and the chemical reactions are not instantaneous, the greatest concentrations of ozone are usually downwind of urban centers and usually occur on summer afternoons when sunlight is most intense. Occasionally during the summer months ozone levels are built up in the valley floor and get transported with the upslope (mountain) flow during the day, creating exacerbated air quality conditions in the foothills and lower mountains of the Sierras. In fact, Sequoia/Kings Canyon and Yosemite National Parks periodically experience some of the worst air quality in the National Park Service.

In summer, as weather systems move through the area, a cycle of stable and less-stable air masses over the valley results in alternating periods of higher and lower ozone concentrations. During the winter months, a number of factors contribute to reduced ozone concentrations: clouds and fog block the required solar radiation at ground level, the sun angle is lower, the days are shorter, wintertime storms produce good dispersion conditions that inhibit the buildup of pollutants, and temperatures are not high enough to produce ozone in great quantities.

Ozone can irritate lung airways and cause inflammation much like a sunburn. Other symptoms include wheezing, coughing, pain when taking a deep breath, and breathing difficulties during exercise or outdoor activities. People with respiratory problems are most vulnerable, but even healthy people that are active outdoors can be affected when ozone levels are high. Repeated exposure to ozone pollution for several months may cause permanent lung damage. Anyone who spends time outdoors in the summer is at risk, particularly children and other people who are active outdoors. Even at very low levels, ground-level ozone triggers a variety of health problems including aggravated asthma, reduced lung capacity, and increased susceptibility to respiratory illnesses like chronic obstructive pulmonary disease, pneumonia, and bronchitis.

In setting the 8-hour ozone standard, USEPA concluded that replacing the existing 1-hour standard with an 8-hour standard was appropriate to provide adequate and more uniform protection of public health from both short-term (1 to 3 hours) and prolonged (6 to 8 hours) exposures to ozone. In addition, the State adopted an 8-hour standard for ozone on April 28, 2005 of 0.070 ppm but the standard is not expected to become effective until early 2006.

Due to the fact that ozone is created over a period of time and sometimes miles downwind of the pollutant sources, ozone is considered a regional pollutant, i.e. entire regions are classified non-attainment. Ozone precursors can be transported well away from the source area before ozone concentrations peak. The SJVAB, which includes both valley and mountainous areas, has been designated as a “serious” non-attainment area for the Federal 8-hour ozone standard with an attainment deadline of June 2013. The region is also designated non-attainment for the State 1-hour ozone standard.

PARTICULATE MATTER

Particle matter (PM) is a mixture of microscopic solids and liquid droplets suspended in air. Like ozone, PM is considered a regional pollutant in part because of its tendency to remain suspended in the air over long periods of time. PM is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, soil or dust particles, and allergens (such as fragments of pollen or mold spores). The size of particles is directly linked to their potential for causing health problems. Small particles less than 10 micrometers in diameter pose the greatest problems because they can get deep into the lungs, and some may even get into the bloodstream. Exposure to such particles can affect both the lungs and the heart. Larger particles are of less concern, although they can irritate the eyes, nose, and throat. Particulate matter may be divided into many size fractions, measured in microns (a micron is one-millionth of a meter). CARB regulates two size classes of particles: particles up to 10 microns (PM_{10}) and particles up to 2.5 microns in size ($PM_{2.5}$). $PM_{2.5}$ particles are a subset of PM_{10} . **Figure 3.4-1** shows the relative sizes of particulate matter.

Particle exposure can lead to a variety of health effects. For example, numerous studies link particle levels to increased hospital admissions and emergency room visits, and even to death from heart or lung diseases. Both long- and short-term particle exposures have been linked to health problems. Long-term exposures, such as those experienced by people living for many years in areas with high particle levels, have been associated with problems such as reduced lung function and the

development of chronic bronchitis, and even premature death. Short-term exposures to particles (hours or days) can aggravate lung disease, causing asthma attacks and acute bronchitis, and may also increase susceptibility to respiratory infections. In people with heart disease, short-term exposures have been linked to heart attacks and arrhythmias. Healthy children and adults have not been reported to suffer serious effects from short-term exposures, although they may experience temporary minor irritation when particle levels are elevated.

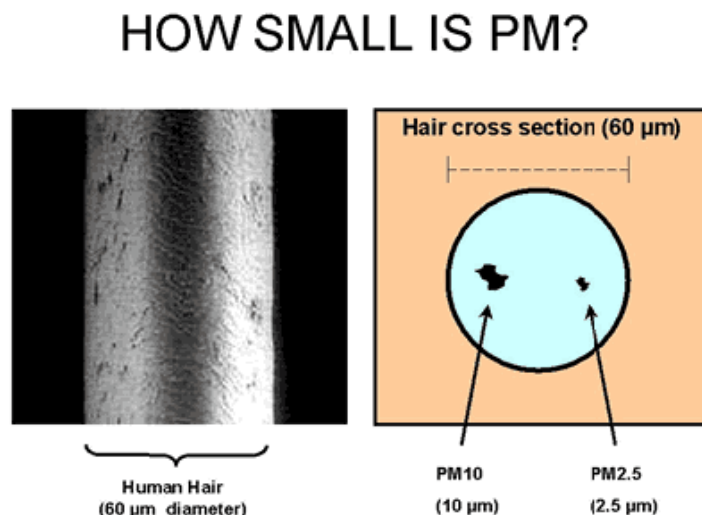


Figure 3.4-1 – Relative sizes of particulate matter pollution

Source: CARB, 2005.

USEPA first established NAAQS for PM in 1971. The primary standards (measured by the indicator total suspended particulates or TSP) were 260 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), 24-hour average, and 75 $\mu\text{g}/\text{m}^3$, annual geometric mean. In 1987, USEPA changed the indicator for particles from TSP to PM_{10} , the latter including particles with a mean aerodynamic diameter less than or equal to 10 μm , which delineates that subset of inhalable particles small enough to penetrate to the thoracic region of the respiratory tract. The standards were changed to 150 $\mu\text{g}/\text{m}^3$ for 24-hours and 50 $\mu\text{g}/\text{m}^3$ for annual geometric mean. In July 1997, while it was determined that the PM NAAQS should continue to focus on particles less than or equal to 10 μm in diameter, it was also determined that the fine and coarse fractions of PM_{10} should be considered separately. USEPA recently promulgated a new standard for $\text{PM}_{2.5}$, or fine particulate matter. The new NAAQS were 65 $\mu\text{g}/\text{m}^3$ for a 24-hour sample, and 15 $\mu\text{g}/\text{m}^3$ for an annual arithmetic mean. Due to the fact that specific monitoring data did not exist at the time, official designations did not occur until December 17, 2004. Now that non-attainment designations have taken effect, the State and local governments have three years to develop implementation plans for reducing air pollutant emissions contributing to fine particle concentrations, in order to lower PM levels.

In 1982, CARB adopted California standards for PM_{10} , i.e. 50 $\mu\text{g}/\text{m}^3$ as a 24-hour average and 30 $\mu\text{g}/\text{m}^3$ as an annual geometric mean. On July 5, 2003 the State modified the PM CAAQS with a new $\text{PM}_{2.5}$ standard of 12 $\mu\text{g}/\text{m}^3$ as an annual arithmetic mean, lowered the annual average PM_{10} to 20 $\mu\text{g}/\text{m}^3$, and retained the 24-hour PM_{10} .

The SJVAB has an extensive network of $\text{PM}_{10}/\text{PM}_{2.5}$ monitors; however, there are no PM_{10} or $\text{PM}_{2.5}$ monitors within 20 miles of the Madera site and none within 30 miles of the North Fork site. The closest $\text{PM}_{10}/\text{PM}_{2.5}$ monitor to the Madera site is in Fresno on 1st Street, which is about 25 miles southeast, but since Fresno is a larger metropolitan area than Madera, the $\text{PM}_{10}/\text{PM}_{2.5}$ monitor in Merced, which is 29 miles northwest of the Madera site, would probably be more representative. The closest $\text{PM}_{10}/\text{PM}_{2.5}$ monitor to the North Fork site is in Clovis on Villa Avenue, approximately 31 miles south southwest.

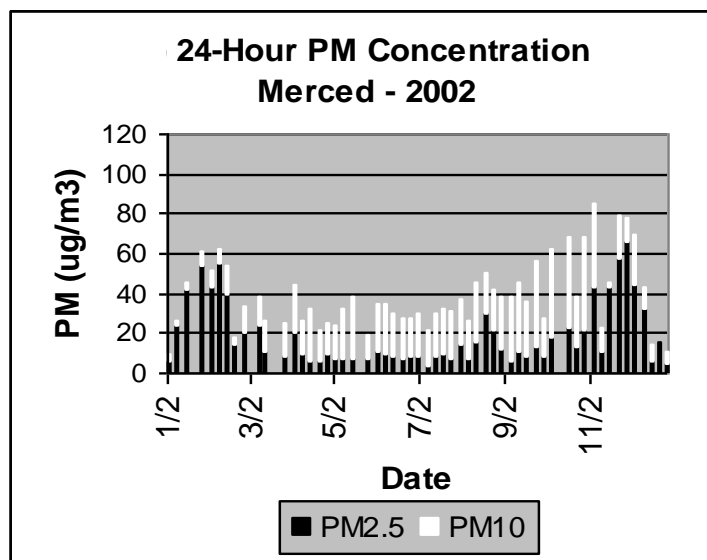


Figure 3.4-2 – Particulate matter concentrations in Merced in 2002

Source: CARB, 2005.

However, since the Clovis monitor is in the valley at only 86 feet elevation, it is not considered representative for the North Fork site area.

Figure 3.4-2 illustrates the variation in PM_{10} and $PM_{2.5}$ levels throughout 2002 in Merced. The total height of each bar represents the PM_{10} concentration, while the height of the black portion of each bar represents the $PM_{2.5}$ fraction. In Merced, the highest PM_{10} and $PM_{2.5}$ concentrations occurred during the winter. The colder, more stagnant conditions during this time of the year are conducive to the buildup of $PM_{2.5}$, including the formation of secondary ammonium nitrate. In addition, increased activity from residential wood combustion may also occur.

In contrast, the coarse fraction (particles between $PM_{2.5}$ and PM_{10} in size) was highest during the spring through the early fall. The coarse fraction is primarily due to activities that resuspend dust, such as emissions from paved and unpaved roads and construction. Based on 2000-2003 monitoring data, CARB estimates that throughout the entire valley portion of the SJVAB, $PM_{2.5}$ makes up approximately 70 percent of ambient PM_{10} during the winter (November through February). $PM_{2.5}$ makes up approximately 30 percent of ambient PM_{10} during the rest of the year. On an annual average basis, $PM_{2.5}$ makes up approximately 50 percent of ambient PM_{10} . Data does not exist to give a clear picture of the component make-up for the mountainous North Fork site area.

The County of Madera is designated non-attainment for the Federal PM_{10} standard and unclassifiable/attainment for the Federal $PM_{2.5}$ standard. It is classified non-attainment for both the State PM_{10} and $PM_{2.5}$ standards.

TOXIC AIR CONTAMINANTS

In addition to the above-listed criteria pollutants, Toxic Air Contaminants (TACs) are another group of pollutants of concern. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least forty different toxic air contaminants. The most important, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to TACs can result from emissions from normal operations, as well as accidental releases. Health effects of TACs include cancer, birth defects, neurological damage, and death.

OTHER CRITERIA POLLUTANTS

The standards for nitrogen dioxide (NO_2), sulfur dioxide (SO_2), sulfates, hydrogen sulfide, vinyl chloride, lead, and visibility-reducing particles are being met or are unclassifiable in the Madera County area, and the latest pollutant trends suggest that these standards will not be exceeded in the foreseeable future. Madera County is designated attainment or unclassified for all other State and Federal standards.

INDOOR AIR QUALITY

The total quantity of air pollutants emitted indoors is less than that emitted by outdoor sources. However, once emitted, indoor air pollutants are diluted much more slowly, due to the partial trapping effect of the building shell. Additionally, indoor emissions occur in closer proximity to people; Californians, like others from industrialized nations, spend most of their time indoors. California adults spend an average of 87 percent of their time indoors, and children under 12 years of age spend about 86 percent of their time indoors. Most of the time spent indoors is spent in the home; however, working adults spend about 25 percent of their time at other indoor locations such as office buildings, stores, and restaurants, primarily for work, while children spend about 21 percent of their time in school on a school day. Because of these time budgets, the trapping effect of buildings, and people's proximity to indoor emissions, there is a much higher likelihood that people will be exposed to indoor pollutants than outdoor pollutants. Investigators have calculated that pollutants emitted indoors are 1,000 times more likely to be inhaled than those emitted outdoors (CARB, 2005b).

Chemicals found in indoor air pollution can cause a variety of impacts on human health, from irritant effects to respiratory disease, cancer, and premature death. Indoor air pollutants can be elevated to levels that may result in adverse health effects. The major indoor pollutants that can have a substantial impact on Californians' health are listed in **Table 3.4-4**, along with their sources and associated health impacts. The health impacts of greatest significance include asthma, cancer, premature death, respiratory disease and symptoms, and irritant effects.

TABLE 3.4-4
SOURCES AND POTENTIAL HEALTH EFFECTS OF MAJOR INDOOR AIR POLLUTANTS

Pollutant	Major Indoor Sources	Potential Health Effects Associated with One or More of The Pollutants Listed*
Asbestos	Building materials in older homes disturbed during renovation. Naturally occurring in some soils.	Lung cancer, asbestosis, mesothelioma.
Biological Agents (bacteria, fungi, viruses, house dust mites, animal dander, cockroaches, microbial VOCs)	House and floor dust; bedding; poorly maintained air conditioners, humidifiers, dehumidifiers; moist structures; insect infestation; building occupants; pets.	Allergic reactions; asthma; eye, nose, and throat irritation; humidifier fever, influenza, other infectious diseases.
Carbon Monoxide	Unvented/malfunctioning gas and propane appliances, woodstoves, fireplaces, tobacco smoke, vehicles in garages.	Headache; nausea; angina; impaired vision and mental functioning; fatal at high concentrations.
Endocrine Disruptors (PBDEs, some phthalates, some pesticides)	Flame retardants, plastics, pesticides.	Mimic or block natural effects of hormones (estrogen and others); developmental abnormalities.
Environmental Tobacco Smoke (ETS)	Cigarettes, cigars, and pipes.	Respiratory irritation, bronchitis and pneumonia in children; asthma in preschool children; lung cancer; heart disease; aggravated asthma;

Pollutant	Major Indoor Sources	Potential Health Effects Associated with One or More of The Pollutants Listed*
Formaldehyde, Other Aldehydes	Composite wood products such as plywood and particleboard, furnishings, wallpaper, durable press fabrics, paints, combustion appliances, tobacco smoke.	decreased lung function. Cancer; eye, nose, and throat irritation; headache; allergic reactions; aggravated asthma, decreased lung function.
Lead	Lead paint chips, contaminated soil.	Learning impairment.
Nitrogen Dioxide	Unvented or malfunctioning gas appliances, other combustion appliances.	Aggravated asthma; decreased lung function; eye, nose, and throat irritation; increased respiratory disease in children.
Organic Chemicals (benzene, chloroform, paradichlorobenzene, methylene chloride, perchloroethylene, others)	Solvents, glues, cleaning agents, pesticides, building materials, paints, treated water; moth repellents, dry-cleaned clothing, air fresheners.	Cancer; eye, nose, throat irritation; aggravated asthma; decreased lung function; at high levels: loss of coordination, damage to liver, kidney, brain.
Ozone	Infiltration of outdoor air, some air "purifiers", office machines.	Lung inflammation, aggravated asthma, cough, wheeze, chest pain.
Particulate Matter	Cigarettes, wood stoves, fireplaces, cooking, candles, aerosol sprays, house dust.	Increased mortality and hospital admissions; lung cancer; irritation; susceptibility to sinus and respiratory infections; bronchitis; aggravated asthma; decreased lung function.
Pesticides	Insecticides, herbicides, sanitizers or disinfectants used indoors or tracked in or blown in from outdoors.	Neurological impairment; nausea, headache, dizziness; skin and eye irritation; hormone disruption.
Polycyclic Aromatic Hydrocarbons (PAH)	Cigarette smoke, cooking, wood burning.	Cancer, gene mutation.
Radon	Uranium-bearing soil under buildings, groundwater, construction materials.	Lung cancer (especially in smokers).

NOTE: *When multiple pollutants are listed in a group, each pollutant may not cause all of the health effects listed in the third column.

SOURCE: CARB, 2005b.

CLIMATE CHANGE

Introduction

The Fourth Assessment Report, issued by the International Panel on Climate Change (IPCC) in 2001, anticipates that the average global temperature between the years 2000 and 2100 could rise from 0.6 (33.0) to 4.0 °C (39.2 °F) (IPCC, 2007). The extent to which human activities affect global climate change is a subject of considerable scientific debate. While many in the scientific community contend that global

climate variation is a normal cyclical process that is not necessarily related to human activities, the IPCC report identifies anthropogenic GHGs as a contributing factor to changes in the Earth's climate (Michaels, 2004; IPCC, 2007). Preferring to error on the side of caution, the analysis in this Environmental Impact Statement (EIS) assumes anthropogenic GHGs are in fact contributing to global climate changes.

The U.S. Supreme Court has affirmed the authority of the USEPA to list GHGs as pollutants under the CAA. To date, however, regulatory action at the federal level has not occurred. The State of California, on the other hand, recently passed the Global Warming Solutions Act of 2006 (AB 32), legislation designed to result in substantial reductions GHG emissions generated by human activities in California.

The Greenhouse Effect and Climate Change

The Earth's temperature is regulated by a system known as the "greenhouse effect." GHGs are primarily water vapor (H₂O), carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) that trap the heat of the sun, preventing radiation from dissipating into space. Water vapor is the most abundant GHG and CO₂ is a distant second. Without the effect of these GHGs, which are both naturally occurring and anthropogenic, the average temperature on the Earth would be approximately -18 °C (-64.4 °F), instead of the current average of 15 °C (59 °F).

IPCC modeling estimates that anthropogenic CO₂ in the lower atmosphere has increased by approximately 31 percent since 1750. At the same time, average temperature in the lower atmosphere has increased approximately 0.6 (33.0) to 0.8 °C (33.4 °F). Due to the challenges inherent in modeling the complexities of the Earth's climate, the proportional importance of anthropogenic activities as opposed to natural feedback systems is exceptionally difficult to establish. Nonetheless, the IPCC concludes that "Most of the observed increase in globally-averaged temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic GHG concentrations." As noted above, this EIS assumes that an increase in anthropogenic GHG concentration is in fact contributing to global warming.

IPCC theorizes that a continuation of this warming trend could have profound implications, including flooding, erratic weather patterns, increased sea levels, and reduced arctic ice. The IPCC projects a number of future GHG emissions scenarios leading to a varying severity of impacts on the environment and the global economy. According to the 2007 IPCC report if anthropogenic GHG continue to increase in the atmosphere there will be a point at which the above impacts would become irreversible, this point is commonly referred to as the "tipping point." Although the 2007 IPCC Report states the tipping point may be as far off as 20 years, some experts contend the tipping point has already been reached.

Table 3.4-5 illustrates the state contribution to the global increase in GHG emissions. The 2020 estimates assume "business as usual." As shown, without modifications in human activities or the introduction of new technologies, GHG emissions are anticipated to increase.

TABLE 3.4-5
GLOBAL GREENHOUSE GAS EMISSIONS

Regions	Estimated GHG Emissions Million metric tons per year of CO ₂ e ¹
	1990
Global Emissions	626,395
California Emissions	427
	2020
Global Emissions	882,246
California Emissions	600

¹Carbon Dioxide Equivalent (see methodology in Section 4.12)

Source: CARB, 2007; IPCC, 2007

3.4.4 EXISTING AIR QUALITY DATA

The following is a description of existing air quality conditions in the Madera County area.

Madera County Emissions Summary

Table 3.4-6 summarizes estimated 2004 emissions in tons per year and tons per day of key criteria air pollutants from major categories of air pollutant sources. For each pollutant, estimated emissions are presented for Madera County as a whole and no further spatial refinement is available (CARB, 2005).

Since ozone is a reaction between reactive organic gases (ROGs) and nitrous oxides (NO_x), to get a clearer picture of the relative contribution to ozone, you have to evaluate emissions of both. NO_x is primarily a product of complete combustion of fossil fuels, and on-road vehicular influence on Madera County emissions is apparent. On-road motor vehicles contribute 31.3% of the total NO_x. However, industrial processes contribute an additional 26.9%, and other mobile sources contribute an additional 22.1%. For the on-road motor vehicles component, the vast majority of NO_x comes from heavy-duty diesel trucks, while the industrial processes component is primarily made up of food and agricultural operations. The other mobile sources component's primary contributors are farm equipment and trains. ROG is largely an evaporative emission, albeit also from combustion sources; therefore major contributors are less definitive. The largest single category of ROG emissions is also from on-road motor vehicles, but with only 26.6% of the total. Miscellaneous processes add another 23.8% and other mobile sources add another 19.7%. The primary on-road motor vehicles component is light-duty autos and trucks.

TABLE 3.4-6
MADERA COUNTY 2004 ANNUAL EMISSIONS IN TONS PER DAY (tpd) AND TONS PER YEAR (tpy)

Emission Category	ROG		CO		NO _x		PM ₁₀		PM _{2.5}	
	tpd	tpy	tpd	tpy	tpd	tpy	tpd	tpy	tpd	tpy
Fuel Combustion										
Electrical Utilities	0.0	2	0.2	64	0.3	101	0.2	69	0.2	65
Cogeneration	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Oil and Gas Production (Combustion)	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Manufacturing and Industrial	0.0	3	0.1	27	0.6	225	0.0	10	0.0	10
Food and Agricultural Processing	0.1	48	0.6	208	1.5	555	0.1	38	0.1	37
Service and Commercial	0.0	4	0.1	22	0.5	168	0.0	7	0.0	7
Other (Fuel Combustion)	0.0	13	0.0	18	0.1	36	0.0	1	0.0	1
Waste Disposal										
Other (Waste Disposal)	0.0	4	0.0	0	0.0	0	0.0	0	0.0	0
Cleaning and Surface Coatings										
Laundering	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Degreasing	0.0	16	0.0	0	0.0	0	0.0	0	0.0	0
Coatings and Related Process Solvents	0.4	151	0.0	0	0.0	0	0.0	0	0.0	0
Printing	0.1	28	0.0	0	0.0	0	0.0	0	0.0	0
Adhesives and Sealants	0.0	10	0.0	0	0.0	0	0.0	0	0.0	0
Other (Cleaning and Surface Coatings)	0.1	53	0.0	0	0.0	0	0.0	1	0.0	1
Petroleum Production and Marketing										
Oil and Gas Production	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0
Petroleum Marketing	0.3	120	0.0	0	0.0	0	0.0	0	0.0	0
Industrial Processes										
Chemical	0.1	19	0.0	0	0.0	0	0.0	1	0.0	1
Food and Agriculture	1.6	600	1.5	553	6.1	2,210	0.4	155	0.2	79
Mineral Processes	0.2	58	0.0	1	1.3	486	0.5	182	0.4	138
Metal Processes	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Wood and Paper	0.0	0	0.0	0	0.0	0	0.0	17	0.0	10
Glass and Related Product	0.0	3	0.1	54	1.4	518	0.1	54	0.1	51
Other (Industrial Processes)	0.0	1	0.0	0	0.0	0	0.0	13	0.0	9

Emission Category	ROG		CO		NO _x		PM ₁₀		PM _{2.5}	
	tpd	tpy	tpd	tpy	tpd	tpy	tpd	tpy	tpd	tpy
Solvent Evaporation										
Consumer Products	1.0	363	0.0	0	0.0	0	0.0	0	0.0	0
Architectural Coatings and Related Process Solvents	0.4	151	0.0	0	0.0	0	0.0	0	0.0	0
Pesticides/Fertilizers	0.9	316	0.0	0	0.0	0	0.0	0	0.0	0
Asphalt Paving/Roofing	0.0	15	0.0	0	0.0	0	0.0	0	0.0	0
Miscellaneous Processes										
Residential Fuel Combustion	0.6	227	7.3	2,647	0.3	101	1.0	383	1.0	369
Farming Operations	2.7	990	0.0	0	0.0	0	5.6	2,027	1.4	517
Construction and Demolition	0.0	0	0.0	0	0.0	0	0.5	174	0.1	36
Paved Road Dust	0.0	0	0.0	0	0.0	0	4.2	1,520	1.8	667
Unpaved Road Dust	0.0	0	0.0	0	0.0	0	3.3	1,195	0.6	231
Fugitive Windblown Dust	0.0	0	0.0	0	0.0	0	2.2	803	0.5	177
Fires	0.0	2	0.1	20	0.0	1	0.0	3	0.0	3
Waste Burning and Disposal	1.1	391	10.1	3,672	0.5	190	1.3	466	1.2	440
Cooking	0.0	5	0.0	0	0.0	0	0.0	15	0.0	9
On-Road Motor Vehicles										
Light-Duty Passenger	1.6	579	16.6	6,041	1.6	585	0.1	25	0.0	15
Light-Duty Trucks	1.8	675	22.9	8,364	2.4	896	0.1	27	0.1	18
Medium-Duty Trucks	0.3	120	4.1	1,489	0.6	212	0.0	6	0.0	4
Light Heavy-Duty Gas Trucks	0.2	77	1.4	520	0.1	58	0.0	1	0.0	1
Medium Heavy-Duty Gas Trucks	0.2	85	1.8	643	0.1	41	0.0	0	0	0.0
Heavy Heavy-Duty Gas Trucks	0.2	67	3.2	1,172	0.2	86	0.0	0	0.0	0
Light Heavy-Duty Diesel Trucks	0.0	8	0.1	24	0.3	115	0.0	1	0.0	1
Medium Heavy-Duty Diesel Trucks	0.0	9	0.2	61	0.7	272	0.0	9	0.0	8
Heavy Heavy-Duty Diesel Trucks	0.2	71	0.8	303	3.6	1,300	0.1	32	0.1	27
Motorcycles	0.1	38	0.8	306	0.0	8	0.0	0	0.0	0
Heavy Duty Urban Buses	0.1	46	1.2	443	0.2	89	0.0	1	0.0	1
School Buses	0.0	6	0.2	63	0.1	48	0.0	1	0.0	1
Motor Homes	0.1	23	1.7	610	0.2	60	0.0	0	0.0	0
Other Mobile Sources										
Aircraft	0.1	20	1.7	631	0.0	2	0.0	3	0.0	2
Trains	0.1	29	0.3	106	1.9	694	0.1	19	0.0	18

Emission Category	ROG		CO		NO _x		PM ₁₀		PM _{2.5}	
	tpd	tpy	tpd	tpy	tpd	tpy	tpd	tpy	tpd	tpy
Recreational Boats	1.5	540	9.0	3,285	0.4	147	0.1	41	0.1	31
Off-Road Recreational Vehicles	0.9	334	3.4	1,256	0.1	23	0.0	0	0.0	0
Off-Road Equipment	0.4	159	4.2	1,522	1.2	422	0.1	31	0.1	28
Farm Equipment	0.5	194	3.5	1,284	3.7	1,351	0.2	90	0.2	83
Fuel Storage and Handling	0.1	55	0.0	0	0.0	0	0.0	0	0.0	0
TOTAL	18.4	6,727	97.0	35,408	30.1	10,971	20.3	7,424	8.5	3,095

SOURCE: CARB, 2005.

The primary miscellaneous processes components are farming operations, and waste burning and disposal. The other mobile sources primary contributors are recreational boats and off-road recreational vehicles.

On road motor vehicles are the primarily contributor of CO in Madera County, with 56.2% of the total CO. Other mobile sources contribute an additional 22.7%. Again, light-duty vehicles and recreational boats are the major contributors.

Both PM₁₀ and PM_{2.5} are almost completely the result of miscellaneous processes (88.2% of PM₁₀ and 77.8% of PM_{2.5} emissions). The major contributors of PM₁₀ emissions from miscellaneous processes are farming operations and paved road dust. Since PM_{2.5} is more likely from combustion sources, the major contributors of PM_{2.5} emissions from miscellaneous processes are farming operations, paved road dust, waste burning and disposal, and residential fuel combustion.

AIR QUALITY MONITORING

CARB and local air districts operate a regional monitoring network that measures the ambient concentrations of the six criteria pollutants. The major pollutants of concern in the project area are ozone, CO, and particulate matter. Existing and probable future levels of air quality in the project area can generally be inferred from ambient air quality measurements conducted by the SJVAPCD and CARB at their monitoring stations. There is only one monitoring site in the County of Madera. It is the Madera Pump Yard site, located at Avenue 8 and Road 29½ in Madera, about 11 miles south southeast of the Madera site but 38 miles southwest of the North Fork site. The Madera Pump Yard site measures ozone, nitrogen oxides (NO₂), and total non-methane hydrocarbons. Other stations affecting the Madera site are in the more metropolitan areas north and south of Madera. The nearest monitoring station that measures CO is the Fresno Skypark Site, which is located about 18 miles southeast of the Madera site on Chennault Avenue in Fresno. The Fresno Skypark Site monitors NO₂ and ozone as well as CO. The nearest particulate samplers are about 25 miles southeast of the Madera site in Fresno on North First Street and about 29 miles northwest of the Madera site in Merced on M Street.

The North Fork site is in a more rural mountainous setting. Monitoring is predominantly limited to the urbanized areas. In the SJVAB, the monitoring sites are almost exclusively on the valley floor. In fact, the nearest monitor of any kind to the North Fork site is in Clovis at an elevation of 85 feet. All the other sites mentioned with regards to the Madera site are between 35 and 55 miles from the North Fork site and, again, represent more urbanized conditions at elevations of less than 100 feet. The most representative monitoring station for the North Fork site would probably be the Turtleback Dome site in Yosemite. It is about 36 miles north northwest of the North Fork site and is at 1,746 feet elevation.

Table 3.4-7 provides the latest three-year summary of monitoring data for ozone, CO, PM₁₀, and PM_{2.5} from these monitors.

When interpreting the data presented below, it is essential to understand the difference between an exceedance and a violation. An exceedance is any concentration that is higher than the level of the standard. In contrast, violations are a subset of the exceedances. A violation is any exceedance that is not affected by a highly irregular or infrequent event, and therefore cannot be excluded from the area designation process. An area is designated as non-attainment for a pollutant if air quality data show that a standard for the pollutant was violated at least once during the previous three calendar years. As explained above, exceedances that are affected by highly irregular or infrequent events are not considered violations of a standard and are not used as a basis for designating an area as non-attainment.

Based on the data shown in **Table 3.4-7**, the following interpretations can be made:

- **Ozone Ambient Data**

- While the Fresno station also showed 15 exceedances of the 1-hour ozone NAAQS in 2002, only 1 in 2003, and none in 2004, the Madera station only had 2 exceedances in 2002 and none in either 2003 or 2004.
- The Yosemite station showed no exceedances of the Federal 1-hour standard in 2002 and only one per year in 2003 and 2004.
- The Federal 8-hour ozone standard was exceeded many times at the Fresno station (from 78 times in 2002 to 12 times in 2004), but even though the Madera station also showed multiple exceedances of the standard in 2002 and 2003 (18 and 14 respectively), the site had no exceedances in 2004.
- The Yosemite station had multiple exceedances of the Federal 8-hour standard in the three monitoring years (from 24 in 2002 to only 8 in 2004).

- **CO Ambient Data**

- There were no exceedances of the CAAQS or NAAQS for CO at either monitoring station during the last three years.

- **PM₁₀ Ambient Data**

- The 24-hour Federal PM₁₀ standard was not exceeded at either the Merced M Street monitoring station or the Fresno First Street station in 2002, 2003, or 2004.
- The State 24-hour PM₁₀ standard was exceeded at both stations in all three years. In fact, it was calculated that the State standard was exceeded on over 90 days per year in 2002 at the Fresno station and on almost 85 days per year at the Merced station in 2002. By 2004 those calculated exceedances were down to over 30 days per year at Fresno and to just over a dozen days per year at Merced.

TABLE 3.4-7
AIR MONITORING RESULTS

Pollutant (Location)	CAAQS	NAAQS	2002	2003	2004
Ozone (Madera Pump Yard)					
Highest 1-Hour Average (ppm)	0.09	0.12	0.141	0.120	0.097
Highest 8-Hour Average (ppm)	0.070	0.08	0.110	0.102	0.084
Days > State 1-Hour Standard			21	15	3
Days > Federal 1-Hour Standard			2	0	0
Days > Federal 8-Hour Standard			18	14	0
Ozone (Fresno Skypark)					
Highest 1-Hour Average (ppm)	0.09	0.12	0.157	0.130	0.111
Highest 8-Hour Average (ppm)	0.070	0.08	0.132	0.112	0.095
Days > State 1-Hour Standard			66	35	16
Days > Federal 1-Hour Standard			15	1	0
Days > Federal 8-Hour Standard			78	32	12
Ozone (Yosemite Turtleback Dome)					
Highest 1-Hour Average (ppm)	0.09	0.12	0.106	0.135	0.137
Highest 8-Hour Average (ppm)	0.070	0.08	0.095	0.102	0.124
Days > State 1-Hour Standard			15	6	6
Days > Federal 1-Hour Standard			0	1	1
Days > Federal 8-Hour Standard			24	10	8
Carbon Monoxide (Fresno Skypark)					
Highest 8-Hour Average (ppm)	9.0	9	1.91	1.68	2.19
Days > State 8-Hour Standard			0	0	0
Days > Federal 8-Hour Standard			0	0	0
PM₁₀ (Merced M Street)					
Highest State 24-Hour Average (µg/m ³)	50		88	75	57
Highest Federal 24-Hour Average (µg/m ³)		150	85	74	56
Calculated Days > State Standard			84.8	44.4	12.3
Calculated Days > Federal Standard			0	0	0
State Annual Average	20		39.6	32.7	28.7
National Annual Average		50	38.8	32.1	27.9
PM₁₀ (Fresno First Street)					
Highest State 24-Hour Average (µg/m ³)	50		100	74	58
Highest Federal 24-Hour Average (µg/m ³)		150	96	74	54
Calculated Days > State Standard			90.4	79.6	30.2
Calculated Days > Federal Standard			0	0	0
State Annual Average	20		28.0	35.0	31.3
National Annual Average		50	38.9	34.7	30.9
PM_{2.5} (Merced M Street)					
Highest Federal 24-Hour Average (µg/m ³)		65	66	46.7	53.1
Days > Federal Standard			1	0	0
State Annual Average	12		18.7	15.7	15.2
National Annual Average		15	18.8	15.7	15.2
PM_{2.5} (Fresno First Street)					
Highest Federal 24-Hour Average (µg/m ³)		65	84	63	71
Days > Federal Standard			13	0	2
State Annual Average	12		N/A	17.7	16.8
National Annual Average		15	21.6	17.7	16.4

NOTES: The number of days that at least one measurement was greater than the level of the State or national standard is not necessarily the number of violations of the standard for the year, since the 1-hour and 8-hour standards can be violated more than once per day.

The 1-hour Federal ozone standard was in effect for these three monitoring years, even though it is now inapplicable.

ppm = parts per million; µg/m³ = micrograms per cubic meter.

Calculated days = days above the standard if measurements were made on a daily basis (PM is normally only measured once every six days).

SOURCE: CARB, 2005.

- The State annual average for PM_{10} was exceeded in each year for which data were available.
- The Federal annual average PM_{10} was not exceeded at either site during 2002, 2003, or 2004.

- **$PM_{2.5}$ Ambient Data**

- The Federal $PM_{2.5}$ 24-hour standard was exceeded at both the Fresno and Merced stations in 2002. Neither station exceeded the standard in 2003. In 2004 the Fresno station exceeded the standard while the Merced did not exceed it.
- The annual averages for both the State and Federal standards were exceeded at both stations in all three years.

ODORS

Existing odor sources in the area of the Madera site are primarily limited to those associated with various agricultural activities, including fertilization and scattered cattle grazing activities. There is one potential odor source in the area of the Madera site. An existing facility that uses fiberglass in its product is located about a mile southeast. That facility is discussed in more detail below. During site visits, AES observed no detectable odors from the Madera site area.

Existing odor sources in the area of the North Fork site are limited. During site visits, AES observed no detectable odors from the North Fork site area.

TOXIC AIR CONTAMINANTS

A major source of toxics is defined as a source that emits 10 tons per year of any listed toxic air pollutant or 25 tons per year of a mixture of air toxics. An area source is defined as a source that emits less than these levels of air toxics and which is a concern because there are a large number of these small emitters within a single area. A search of the USEPA Toxic Release Inventory shows a major source of toxic emissions located about a mile southeast of the Madera site. Florestone Products Company, located on Falcon Drive, is a manufacturing plant producing products like molded shower receptors, gel-coated fiberglass reinforced bathtubs, showers, tub/showers and whirlpools. The company also produces acrylic bathtubs, whirlpools, shower receptors and utility sinks and shower doors. Florestone was reported to have emitted over 50 tons of styrene in 2002 (EPA, 2005). The SJVAPCD (McVeigh, 2005) stated that the Florestone facility is not considered a “Hot Spot” at this time; styrene is exempt unless emitted in copious quantities.

No major source of toxics has been identified in the area surrounding the North Fork site.

SENSITIVE RECEPTORS

Current land uses in the vicinity of the Madera site are largely agricultural. There are some rural residential land uses near the northwest corner of the Madera site. Just southwest of the Madera site is another collection of rural residential land uses, near the northern entrance to the Madera Airport. Whereas there are mostly commercial operations immediately adjacent to State Highway 99 (SR-99) on the northeastern side, there is a collection of residential units west of the Madera site.

Several private and public school facilities are within a 3-mile radius of the Madera site. Two private schools are located about 2 miles east of the Madera site on Road 26 (Crossroads Christian and Madera Christian School); a private day care center is located about 3 miles southeast on Schnoor Street (Kiddie Kountry Club); and a Merced County Office of Education facility is located about 3 miles east on Road 26.

Current land uses in the vicinity of the North Fork site are largely open space and unused. There are few rural residential land uses in the area of the North Fork site.

3.5 BIOLOGICAL RESOURCES

The assessment of existing conditions and analysis of effects to biological resources was based upon biological field surveys conducted to document existing habitat types and determine the potential for occurrence of Federally listed species within the Madera and North Fork sites, and upon a review of the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants, California Department of Fish and Game (CDFG) Natural Diversity Data Base (CNDDDB), and informal consultation with the U.S. Fish and Wildlife Service (USFWS) for reported occurrences of Federally listed species within the vicinity of the Madera site (**Appendix D**) and North Fork site (**Appendix G**). Biological surveys were conducted in 2004 at the Madera site (H. T. Harvey & Associates, 2004; **Appendix E**) and in 2005 at the North Fork site (H. T. Harvey & Associates, 2004; **Appendix H**). Biologists from Analytical Environmental Services (AES) obtained supplementary background information and surveyed the Madera site in 2004. H. T. Harvey & Associates conducted a wetland delineation of the Madera site in 2005 (**Appendix F**).

3.5.1 REGIONAL SETTING

MADERA SITE

The 305-acre Madera site is located approximately seven miles north of Madera, California, between Avenue 17 and Avenue 18, west of Highway 99 and the Union Pacific Railroad. The project vicinity is dominated by agriculture that includes dry land crops, vineyards, and orchards. The property is mostly flat and is situated at an elevation of 250 ft. San Joaquin sandy loam and areas of Atwater loamy sand, Hanford sandy loam, and Tujunga sandy loam underlie the site. The San Joaquin, Atwater, and Hanford soils are all underlain by hardpans, while the Tujunga soil is associated with former and current drainages and swales (H. T. Harvey & Associates, 2004; **Appendix E**).

A historic alignment of Schmidt Creek transects the property from the southeast corner of the site diagonally to the northwest along a narrow band of Tujunga and Hanford soils. The creek has been realigned as a ditch that extends to the western boundary of the parcel and beyond. The limited areas of existing development and Schmidt Creek Ditch are dominated by ruderal habitat. The remainder of the parcel is farmed.

NORTH FORK SITE

The 78.8-acre North Fork site is approximately two miles east of the foothill community of North Fork, east of Mammoth Pool Road, and 0.5 miles southwest of Hill 3954 (1.5 miles southwest of the village of Cascadel), in portions of sections 17, 20, and 21 in Township 8 South, Range 23 East, Mount Diablo Base Line and Meridian, Madera County, California. The property is on a southwest-facing slope with foothill woodland and interior live oak woodland habitats, situated at an elevation of 2,960 to 3,400 feet (H. T. Harvey & Associates, 2005; **Appendix H**).

3.5.2 VEGETATION COMMUNITIES

MADERA SITE

Vegetation communities occurring within the Madera site include dryland wheat (*Triticum aestivum*), ruderal/developed, Schmidt Creek Ditch and seasonal wetland depression. These plant communities are discussed below; acreage and percent area of vegetation types occurring within the Madera site are provided in **Table 3.5-1**. A vegetation map of the Madera site is presented as **Figure 3.5-1**.

TABLE 3.5-1
SUMMARY OF VEGETATION COMMUNITIES OF THE MADERA SITE

Habitat Type	Acres	Percent Area
Dryland Wheat Fields	292.5	96.0
Schmidt Creek Ditch and Seasonal Wetland Depressions	8.5	2.8
Ruderal/Developed	4.0	1.2
TOTAL	305	100

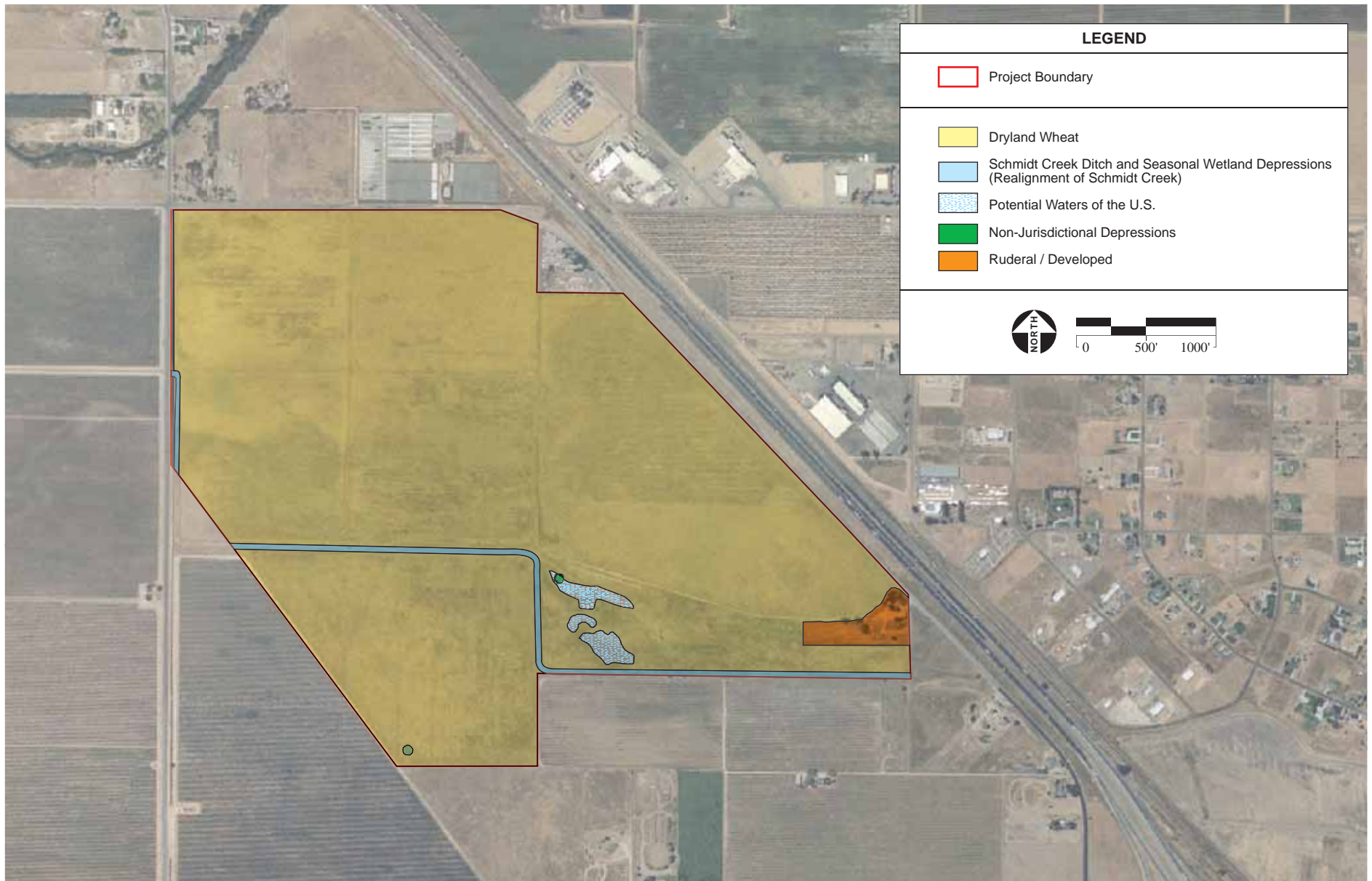
SOURCE: H. T. Harvey & Associates, 2004; AES, 2004.

Dryland Wheat Fields

Dry farmed wheat dominates the majority of the Madera site. Portions of the site were fallow at the time the surveys were conducted. Invasive forbs within the wheat fields included black mustard (*Brassica nigra*), charlock (*Sinapis arvensis*), wild radish (*Raphanus sativus*), and rancher's fireweed (*Amsinckia intermedia*) (H. T. Harvey & Associates, 2004; **Appendix E**).

Schmidt Creek Ditch and Seasonal Wetland Depressions

Schmidt Creek Ditch is a realigned channel of Schmidt Creek that was historically within a shallow swale of the site and flowed to the southeast according to the U.S. Geological Survey (USGS) Kismet quadrangle map. The realigned channel was excavated in upland as evidenced by its sandy bottom, and the sandy spoil side-cast (**Figure 3.5-2, Figure 3.5-3**). The floor of the ditch was dominated by rattail fescue (*Vulpia myuros*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), Bermuda grass (*Cynodon dactylon*), heliotrope (*Heliotropium curassavicum*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), curly dock (*Rumex crispus*), and rancher's fireweed. A small thicket of willows (*Salix* spp.) and dead or dying Fremont cottonwood (*Populus fremontii*) was found along the eastern half of Schmidt Creek Ditch. An irrigation canal parallels Road 23 along the western edge of the property but it is not hydrologically connected with Schmidt Creek Ditch (**Figure 3.5-3**) (H. T. Harvey & Associates, 2004; **Appendix E**).



SOURCE: HT Harvey and Associates, 2005; AES, 2006

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Figure 3.5-1
Habitat Map – Madera Site



Photograph 1 : Center of the site.



Photograph 2 : Schmidt Creek Ditch.



Photograph 3 : Schmidt Creek Ditch.



Photograph 4 : Irrigation Ditch control structure.

Two isolated depressions underlain by the Atwater and Hanford soils were found in the southern half of the property (**Figure 3.5-1**). Seasonal, water-loving plants including toad rush (*Juncus bufonius*), slender popcorn flower (*Plagiobothrys stipitatus*), rabbit-foot grass (*Polypogon monspeliensis*), and Italian rye (*Lolium multiflorum*) were the dominant vegetation in the depressions together with wheat and other annual grasses and forbs. A hardpan layer associated with the underlying soils may be responsible for winter ponding in these areas but the vegetation in these depressions is not representative of vernal pools or seasonal wetlands. Much of the underlying hardpan has been broken by repeated tillage over many decades, further increasing the drainage afforded by the sandy soils on site. While most of the southern half of the Madera site has a hardpan underlying the sandy soils, no other depressions or vernal pool topography were observed on the site (H. T. Harvey & Associates, 2004; **Appendix E**).

Disturbed/Ruderal

Disturbed/ruderal habitat within the Madera site is subject to substantial human activity and contains existing farm buildings and infrastructure such as farm roads and power lines. Vegetation and wildlife was similar to that found in the agricultural areas just described. In addition, willows, walnuts (*Juglans regia*), and blue gum (*Eucalyptus globulus*) exist around the ranch house. A dumping ground west of the ranch house was vegetated with rancher's fireweed (H. T. Harvey & Associates, 2004; **Appendix E**).

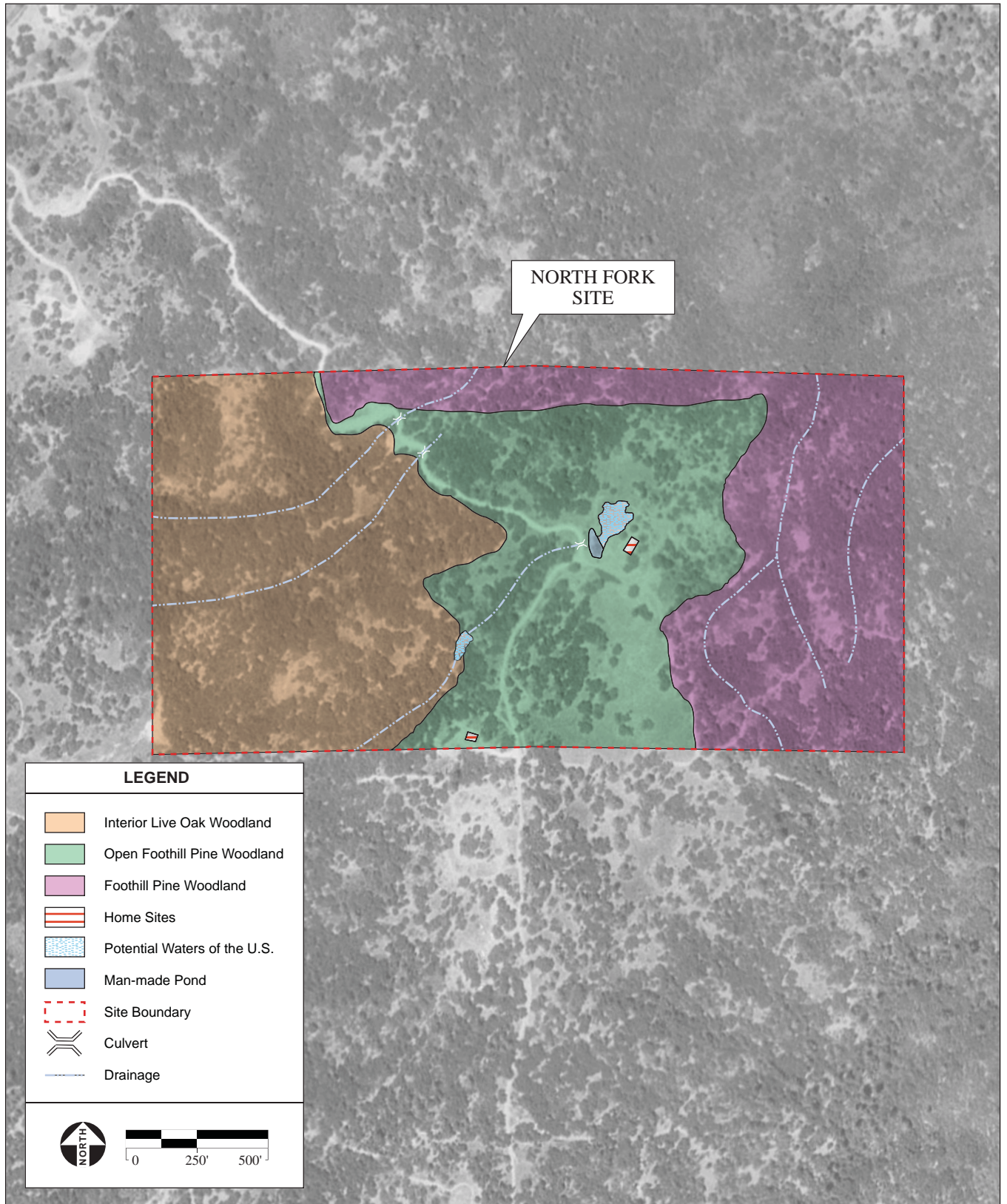
NORTH FORK SITE

Vegetation communities occurring within the North Fork site include foothill pine woodland, interior live oak woodland, open foothill pine woodland, and ruderal/developed. These plant community types are discussed below; acreage and percent area of vegetation types occurring within the site are provided in **Table 3.5-2**. A vegetation map of the North Fork site is presented as **Figure 3.5-4** and site photos are shown as **Figure 3.5-5**.

TABLE 3.5-2
SUMMARY OF VEGETATION COMMUNITIES OF THE NORTH FORK SITE

Habitat Type	Acres	Percent Area
Foothill Pine Woodland	21.9	27.8%
Interior Live Oak Woodland	30.1	38.2%
Open Foothill Pine Woodland	26.4	33.5%
Ruderal/Developed	0.4	0.5%
TOTAL	78.8	100

SOURCE: H. T. Harvey & Associates, 2004; AES, 2004.



SOURCE: USGS Aerial Photograph, 7/16/1993; AES, 2006

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Figure 3.5-4
Habitat Map – North Fork Site



PHOTO 1
General rancheria topography



PHOTO 3
View northeast uphill



PHOTO 2
Rancheria property-north entrance



PHOTO 4
View southwest towards southern boundary

Foothill Pine Woodland

Nearly a third of the site consists of steeply sloped, heavily wooded foothill pine woodland, located on the eastern side and the northern edge of the site (**Figure 3.5-4**). The dominant tree species are foothill pine (*Pinus sabiniana*), interior live oak (*Quercus wislizenii*), and California buckeye (*Aesculus californica*). The trees form a continuous canopy with multiple layers. The shaded portions of the understory are dominated by poison oak (*Toxicodendron diversilobum*) and forbs such as tincture plant (*Collinsia tinctoria*) and torilis (*Torilis arvensis*). Wildflowers growing within the understory include wallflower (*Erysimum capitatum* ssp. *capitatum*) and harlequin lupine (*Lupinus stiversii*). Punctuated with few openings and where sunlight is permitted, various shrubs fill the landscape, shrubs that include mountain mahogany (*Cercocarpus betuloides* ssp. *betuloides*), yerba santa (*Eriodictyon californica*), California buckbrush (*Ceanothus cuneatus* ssp. *cuneatus*), and whiteleaf manzanita (*Arctostaphylos viscida*). Native and non-native grasses coexist in the shrub-dominated openings, including California brome (*Bromus californicus*), melic grass (*Melica imperfecta*), soft chess, and ripgut brome.

Interior Live Oak Woodland

A dense canopy of interior live oak covers approximately 30.1 acres of the western portion of the site (**Figure 3.5-4**). The community is dominated by interior live oak and California buckeye. Foothill pine is conspicuously absent from the interior live oak woodland. California buckbrush, whiteleaf manzanita, and a predominance of poison oak create high-density coverage within the understory, making it nearly impenetrable. Mountain misery (*Cnamaebatia foliolosa*), bedstraw (*Galium* spp.), and tincture plant are also common in the understory composition of vegetation. Granite outcrops characterize scattered openings in the landscape. Herbaceous species found in the open foothill pine woodland (see following paragraph) and other species associated with rock outcrops occupy these areas. Granite outcrop species include twining snakelily (*Dichelostemma volubile*), narrowleaf mule ears (*Wyethia angustifolia*), phacelia (*Phacelia* sp.), delphinium (*Delphinium* sp.), purple sanicle (*Sanicula bipinnatifida*), and slender cottonweed (*Micropus californicus*).

Open Foothill Pine Woodland

The central region of the site is an ecotonal region between the interior live oak woodland on the west and the foothill pine woodland on the east (**Figure 3.5-4**). For this reason, the open foothill pine woodland shares many of the same species as both adjacent community types. The approximately 26.4-acre region is characterized by large regions of non-native grassland, interspersed with foothill pine woodland and understory thickets of the associated shrub species. Additionally, other woody species occurring in the community include ponderosa pine (*Pinus ponderosa*), valley oak (*Quercus lobata*), blue oak (*Quercus douglasii*), flannelbush (*Fremontodendron californicum* ssp. *californicum*), and Mexican elderberry (*Sambucus mexicana*).

Non-native grassland is often associated with numerous species of showy-flowered, native annual forbs ("wildflowers"), especially in years of favorable rainfall. Germination occurs with the onset of the late fall rains; growth, flowering, and seed-set occur from winter through spring. With a few exceptions, the plants are dead through the summer-fall dry season, persisting as seeds. Grasses and forbs on site include soft chess, Italian rye, rattail fescue, wild oats (*Avena fatua*), fewflower clover (*Trifolium oliganthum*), and Indian clover (*Trifolium albopurpureum*). Wildflowers include Indian paintbrush (*Castilleja exserta*), Chinese houses (*Collina heterophylla*), purple globe-lily (*Calochortus amoenus*), fiestaflower (*Pholistoma auritum*), bird's eye gilia (*Gilia tricolor*), California dandelion (*Agoseris grandiflora*), and sky lupine (*Lupinus bicolor*).

Ruderal Disturbed

The disturbed portions of the North Fork site are associated with the main road that bisects the site, the central residence, and the southern residence. In cooperation with the Coarsegold Resource Conservation District, the Tribe maintains firebreaks along the main road. The breaks and road shoulder are vegetated with grasses and forbs identified in the previous paragraph.

3.5.3 WILDLIFE

MADERA SITE

Disturbed/ruderal portions of the site, such as the area around the ranch house, typically provide habitat for common species adapted to human disturbance. Common wildlife species, including backyard birds such as western scrub jay (*Aphelocoma californica*), American robin (*Turdus migratorius*), northern mockingbirds (*Mimus polyglottus*), house finches (*Carpodacus mexicanus*), and house sparrows (*Passer domesticus*) are likely visitors to the site from time to time.

Brush and debris piles provide habitat for western fence lizard (*Sceloporus occidentalis*) and desert cottontails (*Sylvilagus audubonii*). While the site may be too disturbed for most migratory birds, three species including Wilson's warbler (*Wilsonia pusilla*), western tanager (*Piranga ludoviciana*), and Bullock's orioles (*Icterus bullockii*) may be present during spring and fall migration (H. T. Harvey & Associates, 2004; **Appendix E**).

Cultivated fields also provide limited habitat for other wildlife species. Frequent farming practices, plowing, and weed control disrupt fossorial mammals from colonizing farmed areas. Species that typically inhabit cultivated areas are generally common and accustomed to disturbances. These species include American kestrel (*Falco sparverius*), American crow (*Corvus brachyrhynchos*), killdeer (*Charadrius vociferous*), mourning dove (*Zenaida macroura*), western meadowlark (*Sturnella neglecta*), and Brewer's blackbird (*Euphagus cyanocephalus*).

NORTH FORK SITE

The North Fork site's rural setting in the Sierra Nevada Mountains provides a greater variety of wildlife species than the disturbed habitats of the Madera site. Year-round residents include western fence lizard, southern alligator lizard (*Elgaria multicarinata*), Sierra Nevada ensatina (*Ensatina eschscholtzii platensis*), king snake (*Lampropeltis getula*), gopher snake (*Pituophis catenifer*), western rattlesnake (*Crotalus viridis*), northern pygmy owl (*Glaucidium gnoma*), western screech-owl (*Otus kennicottii*), Anna's hummingbird (*Calypte anna*), acorn woodpecker (*Melanerpes formicivorus*), Nuttall's woodpecker (*Picoides nuttallii*), hairy woodpecker (*Picoides villosus*), northern flicker (*Colaptes auratus*), Hutton's vireo (*Vireo huttoni*), warbling vireo (*Vireo gilvus*), Cassin's vireo (*Vireo cassinii*), western scrub jay, oak titmouse (*Baeolophus inornatus*), white-breasted nuthatch (*Sitta carolinensis*), American robin, purple finch (*Carpodacus purpurens*), western gray squirrel (*Sciurus griseus*), dusky footed woodrat (*Neotoma fuscipes*), North American deer mouse (*Peromyscus maniculatus*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), bobcat (*Lynx rufus*), and mule deer (*Odocoileus hemionus*). Migratory birds breed in the habitats associated with the North Fork site. The Sierra Nevada Mountains provide breeding habitat for neotropical migratory birds including western wood-pewee (*Contopus sordidulus*), ash-throated flycatcher (*Myiarchus cinerascens*), orange-crowned warbler (*Vermivora peregrina*), black-headed grosbeak (*Pheucticus melanocephalus*), and lesser goldfinch (*Carduelis psaltria*). Winter visitors that breed in more northern latitudes or at higher elevations include red-breasted nuthatch (*Sitta canadensis*), yellow-rumped warbler (*Dendroica coronata*), white-crowned sparrow (*Zonotrichia leucophrys*), golden-crowned sparrow (*Zonotrichia atricapilla*), Cassin's finch (*Carpodacus cassinii*), pine siskin (*Carduelis pinus*), evening grosbeak (*Coccothraustes vespertinus*), Hammond's flycatcher (*Empidonax hammondi*), gray flycatcher (*Empidonax wrightii*), dusky flycatcher (*Empidonax oberholseri*), black-throated gray warbler (*Dendroica nigrescens*), and hermit warblers (*Dendroica occidentalis*). Bird species found in open areas include western bluebird (*Sialia mexicana*), California towhee (*Pipilo crissalis*), lazuli bunting (*Passerina amoena*), lark sparrow (*Chondestes grammacus*), and Bullock's oriole. Species found in drier conditions and associated with trees and shrubs include Phainopepla (*Phainopepla nitens*), blue-gray gnatcatcher (*Polioptila caerulea*), and rufous-crowned sparrow (*Aimophila ruficeps*) (H. T. Harvey & Associates, 2004; **Appendix H**).

3.5.4 SPECIAL-STATUS SPECIES

FEDERALLY LISTED SPECIES

For the purposes of this EIS, Federally listed species include those plant and animal species that are listed as endangered or threatened under the Federal Endangered Species Act (FESA), or are formally proposed for listing.

STATE-LISTED SPECIES

Other special-status species such as those plants and wildlife that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by State or other agencies, or by the CNPS, or other conservation organizations. Species present on tribal trust land and recognized at the State or local level, are not necessarily afforded the protections of the Endangered Species Act.

METHODOLOGY

Special-status species that may potentially be affected by the Proposed Action were compiled based upon a review of pertinent literature, aerial photographs, site topographic maps, informal consultation with the USFWS and other local experts, results of a query of the CNDDDB for reported occurrences of special-status species within the Madera and North Fork sites USGS 7.5" quadrangle and the eight surrounding quadrangles, and from the results of biological field surveys (**Appendix D** and **Appendix G**).

RESULTS

AES conducted reconnaissance level surveys on February 12, 2004 at the Madera site and H.T. Harvey and Associates conducted follow-up surveys on June 16, 2004 and May 30, 2008. H.T. Harvey and Associates biologists conducted reconnaissance level surveys of the North Fork site on May 11 and 12, 2005. Surveys were conducted to assess the site for special-status species (State and federally recognized and CNPS List 1B plants) and habitats able to support special-status species.

STATE AND CNPS SPECIAL-STATUS SPECIES

MADERA SITE

Based upon the methodology, as described above, to assess the Madera site for potential occurrences of special-status species, ~~nine-four~~ special-status plant species have the potential to occur on the Madera site: heartscale (*Atriplex minuscule*), subtle orache (*Atriplex subtilis*), Hoover's calycadenia (*Calycadenia hooveri*), ~~Hoover's cryptantha (*Cryptantha hooveri*),~~ gypsum-loving larkspur (*Delphinium gypsophilum* ssp. *gypsophilum*), ~~Ewan's larkspur (*Delphinium hansenii* ssp. *exanianum*), and~~ spiny-sepaled button-celery (*Eryngium spinosepalum*), ~~and large-flowered linanthus (*Linanthus grandiflorus*).~~ While these species are listed under CNPS, they are not listed as endangered or threatened by the U.S. or by California. None of these species have been documented within five miles of the Madera site, and the highly-disturbed nature of the site and vicinity makes it unlikely the species would occur on the site.

Two sensitive habitats were identified in the CNDDDB query: northern hardpan vernal pool and valley sacaton grassland. Neither of these sensitive habitats was observed on the Madera site. Most of the site is underlain by acidic iron and silica cemented hardpan, according to the soil

series descriptions (USDA, 1962). While this is characteristic of northern hardpan vernal pools geology, vernal pool topography and its associated vegetation were absent from the site. Fragments of hardpan geology were found along the southwest boundary and adjacent vineyard. However, they were likely surfaced when the adjacent parcel was ripped to install a vineyard.

State-listed wildlife species with the potential to occur on the Madera site and/or vicinity include Swainson's hawk (*Buteo swainsonii*), bald eagle (*Haliaeetus leucocephalus*), ~~northern harrier (*Circus cyaneus*)~~, ~~California horned lark (*Eremophila alpestris actia*)~~, and hoary bat (*Lasiurus cinereus*). Although the northern harrier (*Circus cyaneus*) and the California horned lark (*Eremophila alpestris actia*) are no longer listed as state Species of Concern, they are included in the analysis because they were listed at the time that H.T. Harvey and Associates prepared the biological report.

Swainson's Hawk (*Buteo swainsonii*)

Listed as threatened by the State of California, the Swainson's hawk occurs in the greater project area. Nesting is generally associated with riparian habitats in relatively close proximity to foraging habitat, preferably grassland or pasture habitat. They may range up to 18 miles from the nest in search of prey (Estep 1989; Babcock 1993). The Swainson's hawk prey base consists of voles (*Microtus* spp.), gophers, birds, and insects. They have adapted to foraging in certain croplands such as alfalfa, hay, and pasture. Crops such as grains, tomatoes, beets, and other row crops can also be used on an interim basis when prey is made available through harvesting activities. Crops such as cotton, corn, orchards, and vineyards are not suitable foraging habitat because the prey base is either absent or unavailable due to crop structure. Generally, crops greater than two feet tall create an impenetrable barrier for foraging Swainson's hawk (Estep, 1989). Swainson's hawk likely forages on the site.

Bald Eagle (*Haliaeetus leucocephalus*) (wintering and nesting)

The bald eagle was federally listed as endangered in 1967. It was reclassified as federally threatened in 1995 and was federally delisted in 2007. The bald eagle was state listed as endangered in 1982 and currently maintains its state status. Bald eagles typically breed in forested areas, relatively close (usually less than 2 km) to water that offers foraging opportunities. The bird feeds opportunistically, feeding on a variety of mammals and birds. However, it prefers fish, and seeks out aquatic habitats for foraging (Buehler, 2000). Potential nesting or foraging habitat is not found on the site.

Northern Harrier (*Circus cyaneus*)

Biologists from H.T. Harvey observed a northern harrier (~~California Species of Concern~~) foraging over the site. This species is found in open grasslands, agricultural areas, and marshes. Nesting habitat, which does not occur on the site, consists of long grass habitat and where marsh plants can provide cover for the nest, which is constructed on the ground. Suitable breeding habitat was not found on site. Foraging habitat for the northern harrier is similar to that of the Swainson's

hawk, mentioned above. Harriers hunt in a slow traversing manner, in search of prey that includes rodents, birds, frogs, reptiles, and insects. Potential foraging habitat for the northern harrier exists on the project site.

California Horned Lark (*Eremophila alpestris actia*)

Horned larks (~~California Species of Concern~~) occur over nearly all of the contiguous United States in bare ground habitats. This subspecies breeds along the coast and in the Central Valley of California. Suitable habitat for this species includes fallow agricultural fields, which may occur on the Madera site.

Hoary Bat (*Lasiurus cinereus*)

The hoary bat (California Species of Concern) occurs over most of the contiguous United States and Hawaii. The species can be found throughout California, though less commonly in the deserts of southeastern part of the state. It prefers to forage in open and patchy habitats. The hoary bat roosts and rears young in dense tree foliage. Suitable roosting and rearing habitat is available in the small number of trees present on the Madera site.

NORTH FORK SITE

State and other special-status species were evaluated with the same methodology as performed for the Madera site. ~~Twelve~~Eleven species have potential to occur on the North Fork site: tree anemone (*Carpenteria californica*), flaming trumpet (*Collomia rawsoniana*), Norris's beard-moss (*Didymodon norrisii*), Madera leptosiphon (*Leptosiphon serrulatus*), Yosemite lewisia (*Lewisia disepala*), orange lupine (*Lupinus citrinus* var. *citrinus*), King's River monkey flower (*Mimulus acutidens*), slender stalked monkey flower (*Mimulus gracilipes*), oval-leaved viburnum (*Viburnum ellipticum*), northern goshawk (*Accipiter gentilis*), and pallid bat (*Antrozus pallidus*). Those species with overlapping Federal status are not in the preceding list, but are discussed following **Table 3.5-4** in the **Federal Species** subsection.

Tree anemone, flaming trumpet, Norris's beard-moss, Madera leptosiphon, Yosemite lewisia, orange lupine, King's River monkey flower, slender stalked monkey flower, and oval-leaved viburnum are CNPS-listed plants. The survey performed by H.T. Harvey and Associates (May 11 and 12, 2005) was timed to occur within overlapping bloom periods for the tree anemone, Madera leptosiphon, Yosemite lewisia, orange lupine, King's River monkey flower, slender stalked monkey flower, and oval-leaved viburnum. Norris's beard moss is identifiable year-round, but no survey was done during the bloom period of flaming trumpet. No CNPS-listed plants were observed on the reconnaissance level surveys.

As well as special-status species, sensitive habitats are identified at the State level. Sensitive habitats identified in the region include: northern basalt-flow vernal pool, Central Valley drainage hardhead/squawfish stream, Central Valley drainage rainbow trout/cyprinid stream, and Central

Valley drainage resident rainbow trout stream. The northern basalt-flow vernal pool habitat was not observed. The site has slopes between 15 and 45 percent and is underlain by highly permeable sandy soils, neither of which is conducive to the development of vernal pools. The sensitive stream habitats are discussed in the CNDDDB 5-Mile Radius Map subsection.

State Special-Status Plant Species

Tree Anemone (*Carpenteria californica*)

~~State Status—Threatened~~

The tree anemone (California Threatened and CNPS Listed 1B) is found naturally only in the foothills of eastern Fresno County between the San Joaquin and Kings Rivers, at elevations from 1,500 to 4,000 feet. The most vigorous populations are found where moisture is relatively abundant, on north-facing slopes and in ravines. Native in decomposed granite but tolerates adobe and loam as well. The blooming period is from May to July.

Reconnaissance level surveys were conducted on May 11 and 12, 2005, within the blooming period for the species. Although this species is reported to occur within the 5-mile radius of the North Fork site (**Figure 3.5-6**), H.T. Harvey and Associates did not observe the species on site.

State Special-Status Bird Species

Potential breeding habitat exists on the North Fork site for the northern goshawk in the open foothill pine woodland and the pine woodland habitats. The goshawk is an uncommon permanent resident in the mountains of California, and nests in, or within the vicinity of, coniferous forests. Nests are usually built on north slopes near water, and suitable nesting trees include red fir, lodgepole pine, Jeffrey pine, and aspens. This species was not observed during site surveys.

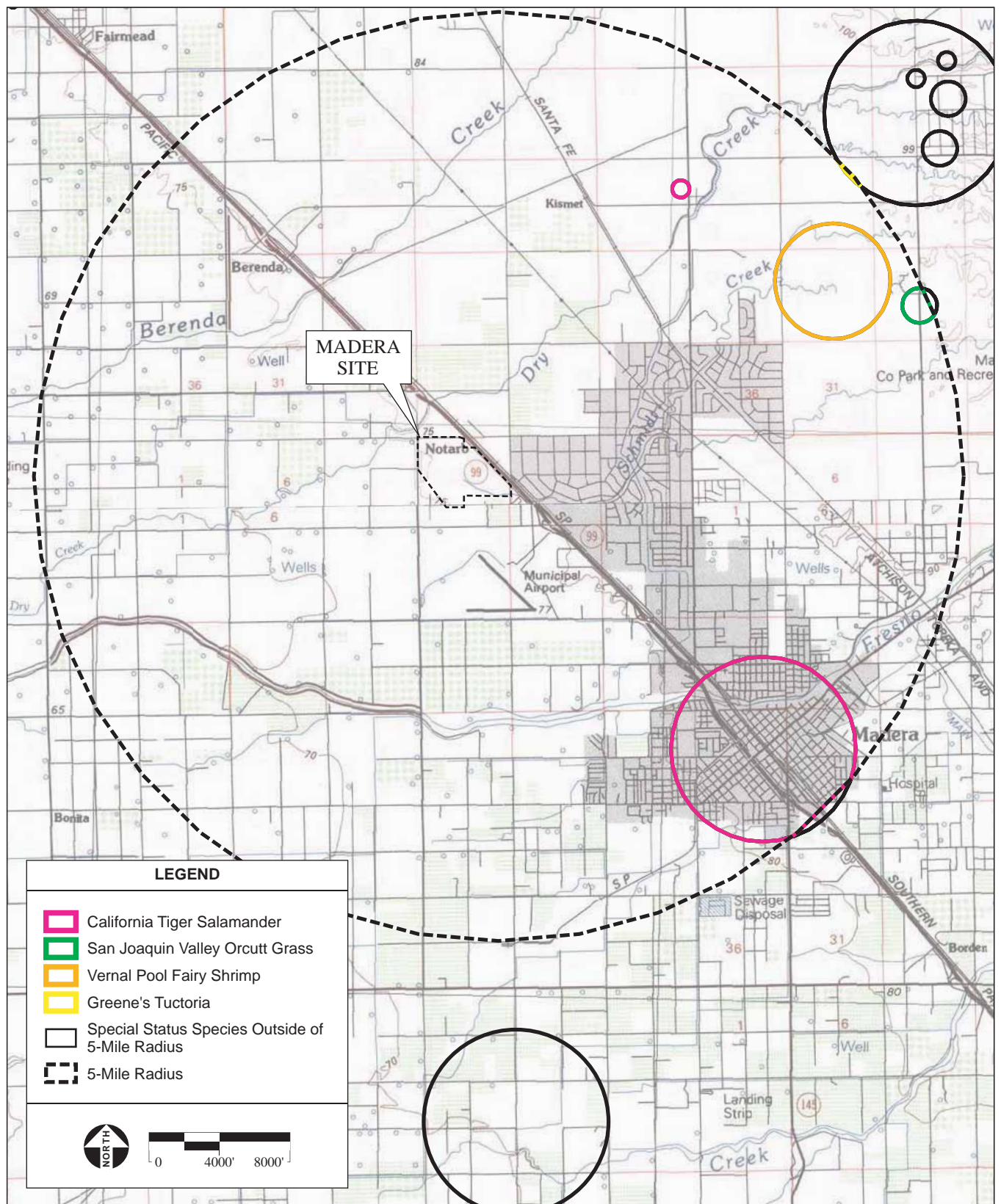
Bald eagle and American peregrine falcon are two raptor species identified by the USFWS as having potential to occur in Madera County. However, neither of these species was observed on the site survey and potential nesting and foraging habitat is absent from the site. Both species may, occasionally, fly over the site but no large water body is present. Large water bodies are frequently used by both birds of prey.

State Special-Status Bat Species

The pallid bat (*Antrozus pallidus*) has the potential to breed on the site. The pallid bat is usually found in rocky, mountainous areas and near water. They are also found over more open, sparsely vegetated grasslands, and they seem to prefer to forage in the open. While no species-specific surveys were conducted for the pallid bat, this species was not observed during surveys of the North Fork site.

CNDDDB 5-MILE RADIUS MAP – MADERA SITE

The CNDDDB was queried and occurrences of special-status species plotted in relation to the study area boundary using GIS software (**Figure 3.5-6**). Within a 5-mile radius, seven special-status species have been reported by the CNDDDB: Madera leptosiphon (*Leptosiphon serrulatus*), California tiger salamander (*Ambystoma californiense*), Greene's tuctoria (*Tuctoria greenei*), San Joaquin Valley orcutt grass (*Orcuttia inaequalis*), hairy orcutt grass (*Orcuttia pilosa*), burrowing



SOURCE: USGS 100K "Merced, CA" Topographic Quadrangle, T11S, T10S, & T9S; R16E, R17E, & R18E; USGS 100K "Mendota, CA" Topographic Quadrangle, T10S, T11S, & T12S; R16E, R17E, & R18E; Mt. Diablo Baseline & Meridian; California Natural Diversity Database, 2004; AES, 2005

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Figure 3.5-6
Special Status Species Found Within
Five Miles of Madera Site

owl (*Athene cunicularia*), hoary bat (*Lasiurus cinereus*), moestan blister beetle (*Lytta moesta*), and vernal pool fairy shrimp (*Branchinecta lynchi*). None of these species were observed on the site. Greene's tuctoria (*Tuctoria greenei*), San Joaquin Valley orcutt grass (*Orcuttia inaequalis*), hairy orcutt grass (*Orcuttia pilosa*), and vernal pool fairy shrimp (*Branchinecta lynchi*) are vernal pool endemic species that would not occur due to lack of vernal pool habitat on the Madera site.

CNDDDB 5-MILE RADIUS MAP – NORTH FORK SITE

The CNDDDB was queried and occurrences of special-status species plotted in relation to the study area boundary using GIS software (**Figure 3.5-7**). Within a 5-mile radius, five special-status species have been reported by the CNDDDB: Leech's skyline diving beetle (*Hydroporus leechi*), brook pocket-moss (*Fissidens aphelotaxifolius*), flaming trumpet (*Collomia rawsoniana*), foothill yellow-legged frog (*Rana boylei*), tree anemone (*Carpenteria californica*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), and western pond turtle (*Emys marmorata*). Flaming trumpet and brook pocket-moss are CNPS-listed plants, and were not observed on the reconnaissance-level survey.

In addition, three sensitive habitats were identified in the CNDDDB query and within the 5-mile radius of the North Fork site: Central Valley drainage hardhead/squawfish stream, Central Valley drainage rainbow trout/cyprinid stream, and Central Valley drainage resident rainbow trout stream. Two of the six watershed drainages drain to Willow Creek, identified as Central Valley Drainage rainbow trout/cyprinid stream, and Whiskey Creek, identified as Central Valley drainage resident rainbow trout stream.

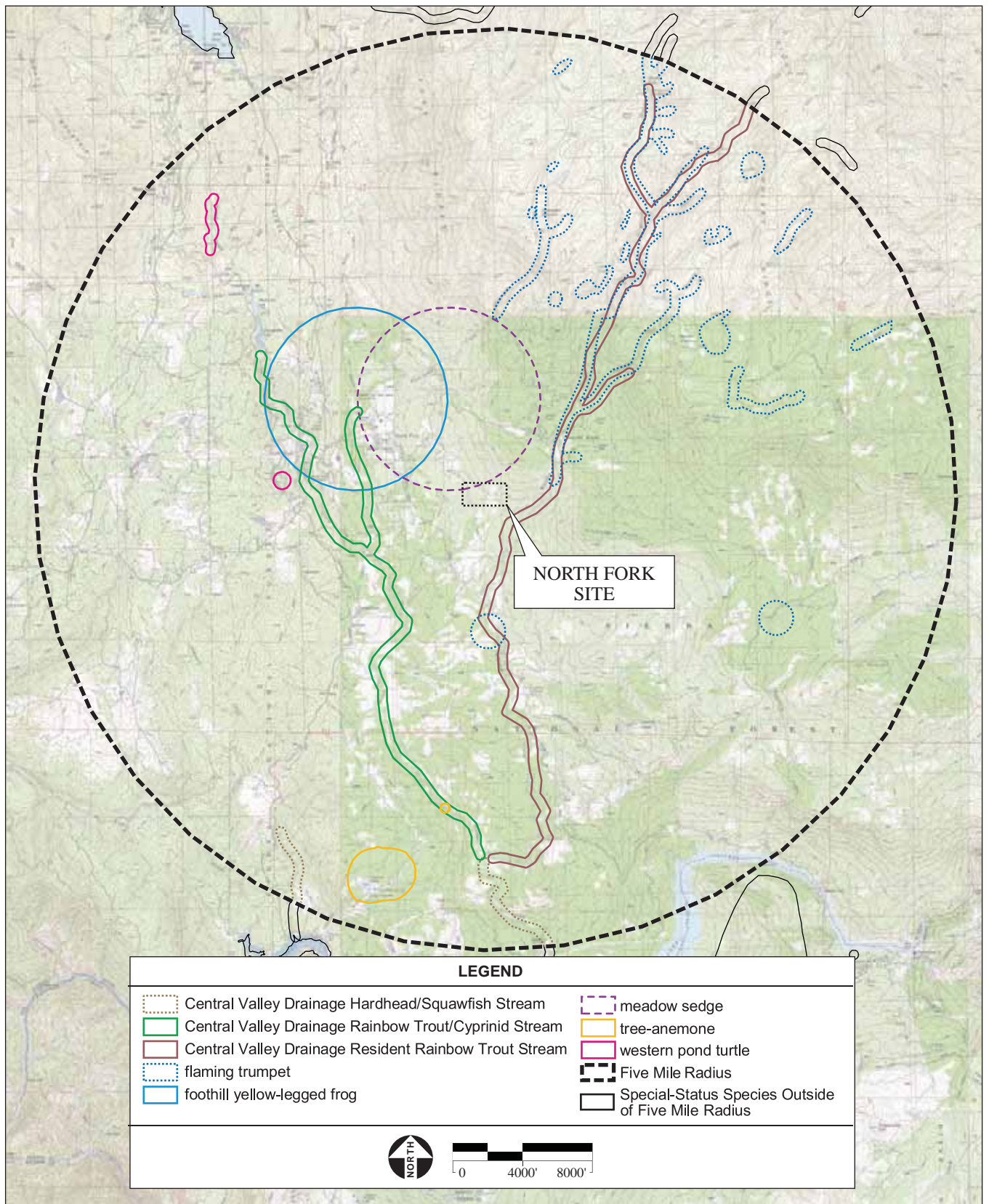
FEDERAL SPECIES

TARGET SPECIES LIST - MADERA SITE

Habitat requirements for each special-status species were assessed and compared to the habitats occurring within the property and adjacent areas. The target species list (**Table 3.5-3**) contains those Federal species that have suitable habitat on site.

Six species are listed at the Federal level and are discussed following **Table 3.5-3**. Of these six species, only the California tiger salamander (*Ambystoma californiense*) is known to occur within five miles of the site (CNDDDB, 2006). Based upon information from the 2004 site surveys and the disturbed nature of the site (which is intensively farmed), none of these seven species occur on the site.

The property and/or surrounding vicinity represents potential habitat for seven Federal special-status species from the target species list. Federally listed vernal pool species, fish species, and



SOURCE: SOURCE: "Cascadel, CA" USGS 7.5 Minute Topographic Quadrangle, Sections 20 & 21, T8S, R23E Mt. Diablo Baseline and Meridian; California Natural Diversity Database; AES, 2006

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Figure 3.5-7
Special Status Species Found Within
Five Miles of North Fork Site

the valley elderberry longhorn beetle are Federal status species dismissed from the target species list. Identification of these species and rationale for exclusion from the target species list follows.

Federally Listed Vernal Pool Endemic Species

Regionally occurring federally listed vernal pool endemic species documented in the vicinity of the Madera site include vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardii*), conservancy fairy shrimp (*Branchinecta conservatio*), California linderiella (*Linderiella occidentalis*), midvalley fairy shrimp (*Branchinecta mesovallensis*), molestan blister beetle (*Lytta molesta*), hairy orcutt grass (*Orcuttia pilosa*), succulent owl's clover (*Castilleja campestris* ssp. *succulenta*), San Joaquin Valley orcutt grass (*Orcuttia inaequalis*), and Greene's tuctoria (*Tuctoria greenei*). Federally listed vernal pool endemic species are not included in **Table 3.5-3**, as this community type does not occur on the Madera site (H. T. Harvey & Associates, 2004; **Appendix E**). ~~Consequently, species that require vernal pools for all or part of their life cycle will not occur on the Madera site.~~

The USFWS list for the Kismet quad and eight surrounding quads identifies critical habitat for Conservancy fairy shrimp, vernal pool fairy shrimp, vernal pool tadpole shrimp, California tiger salamander, succulent owl's-clover, San Joaquin Valley Orcutt grass, hairy Orcutt grass, and Greene's tuctoria. However, the Madera site is not located in critical habitat for any of these species.

Federally Listed Fish Species

Federally listed fish species were excluded from the target species list (**Table 3.5-3**) due to lack of habitat. The Schmidt Creek realignment ditch is seasonal and is used to receive stormwater. It does not support persistent fish populations.

Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)

The valley elderberry longhorn beetle (Federally threatened) has been documented on the San Joaquin River, north of Herndon. This species is parasitic to the host elderberry shrub (*Sambucus* spp). Elderberry shrubs were absent from the Madera site. This precludes the species from inhabiting the Madera site. Thus, it is not included on the target species list.

California Tiger Salamander (*Ambystoma californiense*)

Federal Status – Threatened

In the Central California foothills, California tiger salamanders (CTS) are typically found at low-elevations below 1,500 feet. CTS spend the majority of their lives in upland habitats such as annual grasslands, oak savanna, mixed grassland and woodland habitats, woodlands, scrub or

TABLE 3.5-3
TARGET SPECIAL-STATUS SPECIES LIST: MADERA SITE

SCIENTIFIC NAME COMMON NAME	FEDERAL STATUS	DISTRIBUTION	HABITAT REQUIREMENTS	PERIOD OF IDENTIFICATION
ANIMALS				
Amphibians				
<i>Ambystoma californiense</i> California tiger salamander	FT	Western California from Sonoma County in the north to Santa Barbara County in the south.	Breeds in vernal pools and ponds of grassland and open woodland of low hills and valleys. Will utilize burrows for refuge.	November to February (adults) March 15 to May15 (larvae)
<i>Rana aurora draytonii</i> California red-legged frog	FT	Currently found in coastal drainages from Marin County south to Baja California, Mexico. Range extends from the Bay Area and the central coast, also along the Sierra Nevada Range. Within the remaining distribution of the species, only isolated populations have been documented in the Sierra Nevada, northern Coast, and northern Transverse ranges. Believed to be extirpated from the southern Transverse and Peninsular ranges, but still present in Baja California, Mexico.	Lowlands and foothills in or near permanent or late-season sources of deep water with dense, shrubby, or emergent vegetation.	May to November
Reptiles				
<i>Gambelia</i> (= <i>Crotaphytus</i>) <i>silae</i> Blunt-nosed leopard lizard	FE	Southern San Joaquin Valley of California.	Semiarid grasslands, alkali flats, low foothills, canyon floors, large washes, arroyos. Usually on sandy, gravelly, or loamy substrate; sometimes on hardpan; most common where there are abundant rodent burrows; rare or absent in dense vegetation or tall grass.	March to September
<i>Thamnophis gigas</i> Giant garter snake	FT	Current distribution extends from near Chico, Butte County, to the vicinity of Burrel, Fresno County.	Generally inhabits marshes, sloughs, ponds, slow-moving streams, ditches, and rice fields which have water from early spring through mid-fall; emergent vegetation (such as cattails and bulrushes); open areas for sunning; and high ground for hibernation and escape cover.	March to October

SCIENTIFIC NAME COMMON NAME	FEDERAL STATUS	DISTRIBUTION	HABITAT REQUIREMENTS	PERIOD OF IDENTIFICATION
Mammals <i>Dipodomys nitratooides exilis</i> Fresno kangaroo rat	FE	Historically, the San Joaquin Valley floor from about the Merced River, Merced County, on the north, to the northern edge of the marshes surrounding Tulare Lake, Kings County, on the south; and the valley floor's edge west to the wetlands of the Fresno Slough and San Joaquin River. Current distribution is greatly reduced.	Sands and saline sandy soils in chenopod scrub and annual grassland communities on the San Joaquin Valley floor. Recent occurrences have all been in alkali sink communities from 60 to 90 m.	All year.
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	FE	Contra Costa County south to Kern County, California.	Alkali sink, valley grassland, foothill woodland. Hunts in areas with low sparse vegetation that allows good visibility and mobility.	All year.

NOTES:

FEDERAL STATUS CODES: (U.S. Fish and Wildlife Service or National Marine Fisheries Service)

FC = Federal candidate for listing

FE = Listed as endangered by the Federal Government

FLC = Federal species of local concern

FT = Listed as threatened by the Federal Government

The target species table does not include those species that are:

- 1) Listed as endangered or threatened under the California Endangered Species Act (or proposed for listing);
- 2) Designated as endangered or rare or species of concern, pursuant to California Fish and Game Code (§1901);
- 3) Designated as fully protected, pursuant to California Fish and Game Code (§§ 3511, 4700, or 5050);
- 4) Plants or animals that meet the definitions of rare or endangered under CEQA;
- 5) Plants listed as rare under the California Native Plant Protection Act; or
- 6) Plants considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" (Lists 1B, 2, and 4) or by other conservation organizations such as the Audubon Society or Western Bat Working Group.

SOURCE: USFWS, Sacramento Office, 2004; CDFG, 2004a, b, c, d; CNDDDB, 2004 (Berenda and Kismet 7 ½-minute quadrangles); NatureServe 2004; H. T. Harvey & Associates, Inc., 2004 (**Appendix E**).

chaparral habitats, plant communities associated with vernal pools, vernal pool complexes, and seasonal ponds. They utilize seasonal ponds, natural vernal pools, and vernal pool complexes for breeding during their aquatic phase.

California tiger salamanders may use small artificial water bodies such as stock ponds. However these are often not optimum breeding habitat for the salamanders. The hydroperiod of stock ponds can be so short that larvae cannot metamorphose or so long that predatory fish and bullfrogs can colonize the pond. Periodic maintenance of stock ponds may also cause a temporary loss of functioning aquatic habitat. Successful breeding ponds for California tiger salamanders need to be inundated for a minimum of 12 weeks to allow for successful metamorphosis (USFWS, 2004b). Within the upland habitats, adult CTS spend part of their lives in the underground burrows of small mammals such as California ground squirrels and Botta's pocket gophers (*Thomomys bottae*) and are therefore rarely encountered even where abundant. This practice is termed aestivation.

The nearest reported occurrence is approximately 3.5 to 4 miles southeast in the town of Madera. Appropriate breeding and aestivation habitat are absent from the site and its immediate vicinity. The California tiger salamander, therefore, is absent from the site (H. T. Harvey & Associates, 2004; **Appendix E**).

California Red-legged Frog (*Rana aurora draytonii*)

Federal Status – Threatened

The California red-legged frog (CRLF) is brown to reddish brown in color with prominent dorsolateral folds and has diffuse moderate-sized dark brown to black spots that sometimes have light centers. Distribution of red or red-orange pigment is highly variable, but is usually restricted to the belly and the undersurfaces of the thighs, legs, and feet. The breeding period is from November to April.

Habitat of CRLF is characterized by dense, shrubby riparian vegetation associated with deep, still or slow-moving water. The shrubby riparian vegetation that structurally seems to be most suitable for CRLF is that provided by arroyo willow (*Salix lasiolepis*); cattails (*Typha* sp.) and bulrushes (*Scirpus* sp.). Although CRLF can occur in ephemeral or permanent streams or ponds, populations probably cannot be maintained in ephemeral streams in which surface water disappears.

The Madera site is located in Recovery Unit 1 – Sierra Nevada Foothills and Central Valley. Core areas – areas where recovery actions are focused – are not identified in Madera County. The Schmidt Creek realignment ditch provides marginal habitat for the red-legged frog. No frogs were observed on the surveys performed by AES and H.T. Harvey and Associates biologists in February and June of 2004, respectively.

Blunt-nosed Leopard Lizard (*Gambelia sila*)

Federal Status – Endangered

The blunt-nosed leopard lizard is a relatively large lizard with a long regenerative tail, long hind limbs, and a short, blunt snout. Adult males are slightly larger than females, ranging in size from 3.4 to 4.7 inches in length, excluding tail. Females are 3.4 to 4.4 inches long. There are no current overall population size estimates for the species. This species is found only in the San Joaquin Valley. It inhabits open, sparsely vegetated areas of low relief on the valley floor and the surrounding foothills. It also inhabits alkali playa and valley saltbush scrub. In general, it is absent from areas of steep slope or dense vegetation, or areas subject to seasonal flooding.

The density of vegetation on the Madera site, repeated disturbance associated with cultivation, and the paucity of small burrows preclude blunt-nosed leopard lizard from occurring on the site (H. T. Harvey & Associates, 2004; **Appendix E**).

Giant Garter Snake (*Thamnophis gigas*)

Federal Status – Threatened

Giant garter snakes can reach lengths of up to five feet. The dorsal side is brown with a yellow dorsal stripe and two paler lateral stripes. Ventral coloration is cream to olive color. Sexual maturity is reached at three years for males and five years for females. Mating occurs in March-April with a clutch size of 10 to 46.

The giant garter snake is an aquatic species showing a preference for marshes and sloughs as opposed to larger rivers and streams. The historic distribution is from the Sacramento and San Joaquin Valleys as far north as Butte County down to Kern County. Ideal identification period ranges from March to October. The giant garter snake relies on fish, amphibians, and amphibian larvae as a primary diet and hunts primarily during morning and evening hours. Nighttime hours are spent in mammal burrows for cover and refuge.

Though the Madera site is located within the San Joaquin Valley Recovery Unit, suitable habitat is not present on site. Schmidt Creek realignment ditch does not support flows or prey base for the survival of giant garter snake populations.

Fresno Kangaroo Rat (*Dipodomys nitratoides exilis*)

Federal Status – Endangered

The Fresno kangaroo rat historically occupied areas of grassland and chenopod scrub on the San Joaquin Valley floor from about the Merced River, Merced County, on the north, to the northern edge of the marshes surrounding Tulare Lake, Kings County, on the south; and the valley floor's edge west to the wetlands of the Fresno Slough and San Joaquin River. The subspecies' current distribution is greatly reduced. No known populations remain within the subspecies' historical

range in Merced, Madera, and Fresno Counties. At least two populations are known to remain in Kings County. Outside of its historical distribution, but within Merced County, a population of *Dipodomys nitratoideus* exists, but it is uncertain whether it is of the *D. n. exilis* subspecies. The Fresno kangaroo rat occupies sands and sandy soils in chenopod scrub and annual grassland communities. Recent occurrences have all been in alkali sink communities between about 200 to 300 feet in elevation. The subspecies is nocturnally active year round (USFWS, 1998). Due to the historic farming practices associated with the site, suitable habitat is not present. The species was not observed on the surveys performed by AES and H.T. Harvey and Associates biologists, and suitable habitat was not found on the site.

San Joaquin Kit Fox (*Vulpes macrotis mutica*)

Federal Status – Endangered

The Federally endangered San Joaquin kit fox occurs in grasslands or grassy openings in shrubland. The site and vicinity possesses croplands dominated by orchards and vineyards. Croplands of the region are interspersed with smaller farm tracts of row crops and developed areas. The nearest reported occurrence is from grassland habitats approximately 11 miles southwest of the site.

Cultivation of the site has precluded formation of burrows for denning. The San Joaquin kit fox prey base, composed of small mammals such as California ground squirrels and kangaroo rats, are absent from the Madera site and vicinity. San Joaquin kit foxes do not occur on the Madera site (H. T. Harvey & Associates, 2004; **Appendix E**).

TARGET SPECIES LIST - NORTH FORK SITE

The North Fork site, located in the Sierra Nevada foothills, provides contrasting habitat for special-status species, compared to the Madera site. Habitat requirements for each special-status species found in the region were assessed and compared to the habitats occurring within the North Fork site and adjacent areas. The target species list (**Table 3.5-4**) contains those Federal species that have suitable habitat on site. **Table 3.5-4** identifies the scientific and common name, Federal status, habitat requirements, and ideal period of identification for each species.

The property and/or surrounding vicinity represents potential habitat for four Federal special-status species from the target species list.

The USFWS list for the Cascadel Point quad and eight surrounding quads identifies critical habitat for vernal pool fairy shrimp, vernal pool tadpole shrimp, succulent owl's-clover, San Joaquin Valley Orcutt grass. Therefore the North Fork site is not located in an area identified as critical habitat for any of these species.

TABLE 3.5-4
TARGET SPECIAL-STATUS SPECIES LIST: NORTH FORK SITE

SCIENTIFIC NAME COMMON NAME	FEDERAL STATUS	DISTRIBUTION	HABITAT REQUIREMENTS	PERIOD OF IDENTIFICATION
PLANTS				
<i>Calyptridium pulchellum</i> Mariposa pussypaws	FT	Fresno, Madera, and Mariposa counties. Elevation 400 to 1,220 m.	Chaparral and cismontane woodland on granitic or metamorphic substrate.	April to August
ANIMALS				
Insects				
<i>Desmocerus californicus</i> <i>dimorphus</i> Valley elderberry longhorn beetle	FT	Riparian forests of the Central Valley from Shasta County to Kern County.	Breeds and forages exclusively on elderberry shrubs (<i>Sambucus</i> spp.), specifically on stems with diameter of one inch or greater, below 800 m in elevation.	All year.
Amphibians				
<i>Rana aurora draytonii</i> California red-legged frog	FT	Coastal drainages from Marin County south to Baja California, Mexico. Range includes the San Francisco Bay area, central coast, and Sierra Nevada Range.	Lowlands and foothills in or near permanent or late-season sources of deep water with dense, shrubby, or emergent vegetation.	November to February (adults) March 15 to May15 (larvae)
Mammals				
<i>Martes pennanti pacifica</i> Pacific fisher	FC	Northwestern California, Cascade Range, and Sierra Nevada above 1,000 m.	Favors stands of pine, Douglas fir, and true fir.	Consult agency.

NOTES:

FEDERAL STATUS CODES: (U.S. Fish and Wildlife Service or National Marine Fisheries Service)

FC = Federal candidate for listing

FE = Listed as endangered by the Federal Government

FT = Listed as threatened by the Federal Government

FD = Delisted-Species will be monitored for 5 years

The target species table does not include those species that are:

- 1) Listed as endangered or threatened under the California Endangered Species Act (or proposed for listing);
- 2) Designated as endangered or rare or species of concern, pursuant to California Fish and Game Code (§ 1901);
- 3) Designated as fully protected, pursuant to California Fish and Game Code (§§ 3511, 4700, or 5050);
- 4) Plants or animals that meet the definitions of rare or endangered under CEQA;
- 5) Plants listed as rare under the California Native Plant Protection Act; or
- 6) Plants considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" (Lists 1B, 2, and 4) or by other conservation organizations such as the Audubon Society or Western Bat Working Group.

SOURCE: USFWS, Sacramento Office, 2004; CDFG, 2004a, b, c, d; CNDDDB, 2004 (Berenda and Kismet 7 ½-minute quadrangles); NatureServe 2005; H. T. Harvey & Associates, Inc., 2004 (**Appendix D**); USFS, Pacific Southwest Region, 2005.

Special Status Plant Species

The North Fork site has habitat for Mariposa pussypaws. As described in **Table 3.5-4**, habitats for this species are generally chaparral and cismontane woodland on granitic substrate. Due to the ecotonal habitats (as described in **Section 3.5.2**, Vegetation Communities) of the site and the relatively undisturbed nature, the site does provide habitat for this species. Reconnaissance level surveys performed by H.T. Harvey and Associates on May 11 and 12, 2005 did not detect any special-status plant species.

Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)

Federal Status - Threatened

The valley elderberry longhorn beetle (VELB) is completely dependent on its host plant, elderberry (*Sambucus mexicana*), in California's Central Valley during its entire life cycle (USFWS, 1999). Valley elderberry longhorn beetle larvae live within the soft pith of the elderberry where they feed for 1 to 2 years. Adults emerge from pupation inside the wood of elderberry shrubs during the spring as the plant begins to flower. The adults feed on the elderberry foliage up until they mate. Females lay their eggs in the crevices of elderberry bark.

Upon hatching, the larvae then tunnel into shrub stems and feed there. The VELB typically utilize stems that are greater than one inch in diameter at ground level (USFWS, 1999). Due largely to the loss of riparian habitat within California's Central Valley, the VELB populations in the State had decreased to a point that in 1980 the USFWS listed the species as threatened pursuant to the Federal Endangered Species Act.

AES biologists Tim Armstrong and Sarah Shannon conducted an elderberry survey on October 17 and 18 of 2006. Elderberry shrubs (*Sambucus* spp.), the host plant for the VELB, were mapped along Mission Drive in the Open Foothill Pine Woodland habitat and in the eastern part of the Interior Live Oak Woodland habitat. The number of plants at each location, the size of the stems, and the presence or absence of VELB exit holes is provided in **Section 4.5**.

California Red-Legged Frog (*Rana aurora draytonii*)

Federal Status – Threatened

The California red-legged frog (CRLF) is brown to reddish brown in color with prominent dorsolateral folds and has diffuse moderate-sized dark brown to black spots that sometimes have light centers. Distribution of red or red-orange pigment is highly variable, but is usually restricted to the belly and the undersurfaces of the thighs, legs, and feet. The breeding period is from November to April.

Habitat of CRLF is characterized by dense, shrubby riparian vegetation associated with deep, still or slow-moving water. The shrubby riparian vegetation that structurally seems to be most suitable for CRLF is that provided by arroyo willow (*Salix lasiolepis*); cattails (*Typha* sp.) and

bulrushes (*Scirpus* sp.). Although CRLF can occur in ephemeral or permanent streams or ponds, populations probably cannot be maintained in ephemeral streams in which surface water disappears, such as those within the North Fork site.

The North Fork site is located within Recovery Unit 1-Sierra Nevada Foothills and Central Valley. However, the site is not located within a core area, an area where recovery actions will be focused. CRLFs have been extirpated from the region.

Pacific Fisher (*Martes pennanti pacifica*)

Federal Status – Candidate

Habitat for this species varies from upland and lowland forests, including coniferous, mixed, and deciduous forests. The species commonly uses hardwood stands in summer, but prefers coniferous or mixed forests in the winter. Typically, open areas are avoided. Optimal conditions are forest tracts of 245 acres or more that are interconnected with other large areas of suitable habitat; a dense understory of young conifers, shrubs, and herbaceous cover is important in the summer. The fisher is adapted for climbing, but is primarily terrestrial. During inactive periods, the fisher resides in dens of tree hollows, under logs, in ground or rocky crevices, or in branches of conifers (warmer months).

The Pacific fisher was accorded Federal candidate status on April 8, 2004 (USFWS, 2004). A candidate is a species for which there is sufficient information to support a proposal to list the species under ESA as threatened or endangered, but the preparation of a proposal to list is precluded by higher priority listing actions. Candidate species do not receive the same Federal protection as listed species, but state and Federal agencies proposing activities within the historic range of the fisher are encouraged to give consideration to the fisher during the environmental planning process.

Reconnaissance level surveys have determined that it is unlikely that fishers utilize the North Fork site because it lacks a dense understory of young conifers and does not have a sufficient density of mature conifers.

3.5.5 WATERS OF THE UNITED STATES

According to the Code of Federal Regulations (33 CFR Part 328), the term “Waters of the United States” is defined as:

- All waters which are currently used, or 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;
- All interstate waters including interstate wetlands; or

- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use or degradation of which could affect interstate or foreign commerce including any such waters.

“Wetlands” are defined as:

Waters of the U. S. that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands that meet these criteria during only a portion of the growing season are classified as seasonal wetlands.

MADERA SITE

H.T. Harvey and Associates conducted a delineation of waters of the U.S. occurring within the Madera site on April 13, 2005. The Identification of Waters of the U.S. Report was submitted to the U.S. Army Corps of Engineers (USACE) on September 9, 2005 along with a letter requesting a jurisdictional determination. The jurisdictional determination letter, dated January 10, 2006 (file #200501033), in concurrence with the wetland delineation map, is shown in **Appendix F**.

Approximately 8.51 acres of potentially jurisdictional waters occupy the Madera site. Jurisdictional waters of the U.S. include 0.95 acres of wetlands throughout Schmidt Creek Ditch and 0.74 acres of seasonal wetland in the former Schmidt Creek watercourse. Additionally, jurisdictional “other waters” include 4.55 acres as tributary water throughout Schmidt Creek and ponding within the former Schmidt Creek watercourse and adjacent “wash” areas (2.27 acres). The hydrology supporting these areas is due to perching of incidental rainfall, storm water runoff, and ordinary high water flows in various areas of the current and former Schmidt Creek watercourses. Underlying hardpan forms the bed of the creek causing areas of deposited sands within the creek to remain saturated for extended periods during winter, sustaining emergent species well into the growing season. The depth to the underlying hardpan has also remained shallow under the former watercourse, resulting in an extended saturation period that allows seasonal hydrophytic vegetation to flourish. Hardpan depth throughout the rest of the site is deep enough to preclude a higher water table, which inhibits wetland vegetation.

All identified waters of the U.S. are subject to USACE jurisdiction. An acreage estimate of waters of the U.S. within the project area is presented in **Table 3.5-5** below. **Figure 3.5-8** shows the waters of the U.S. occurring on the Madera site.



SOURCE: HT Harvey and Associates, 2004; AES, 2006

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Figure 3.5-8
Waters of the U.S. – Madera Site

TABLE 3.5-5
WATERS OF THE U.S. ACREAGE ESTIMATE – MADERA SITE

Land Form	Acreage
Schmidt Creek Drainage Ditch	6.82
Wetlands	1.69
Total	8.51

SOURCE: H. T. Harvey & Associates, 2005; AES, 2004.

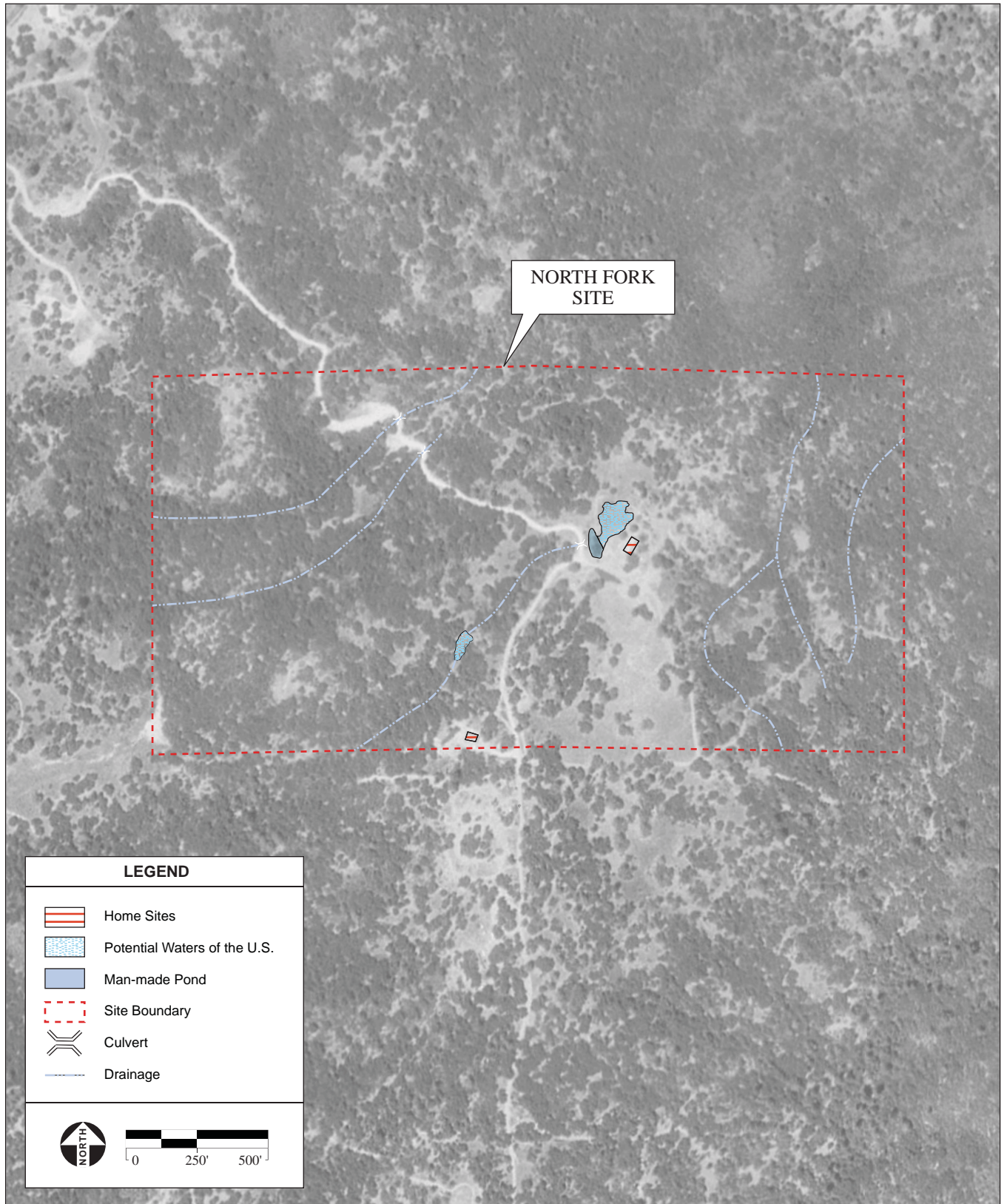
NORTH FORK SITE

H.T. Harvey and Associates, on May 11 and 12, 2005, conducted an assessment of wetlands occurring within the North Fork site. Six watershed drainages were observed on the site (**Figure 3.5-9**). The four drainages on the western side of the site drain into Willow Creek, while the two on the eastern side of the site drain into Whiskey Creek. Two of the drainages (one on the eastern side and one on the western side) are USGS blue-line streams. Due to the connectivity to identified waters of the U.S., all drainages are considered jurisdictional other waters of the U.S. The pond and potential wetlands located on the site occupy approximately 1.19 acres and are also hydrologically connected to waters of the U.S., and are therefore considered jurisdictional. An acreage estimate of waters of the U.S. within the site is presented in **Table 3.5-6** below.

TABLE 3.5-6
WATERS OF THE U.S. ACREAGE ESTIMATE – NORTH FORK SITE

Land Form	Acreage
Streams and other potential wetlands	1.11
Ponds	0.08
Total	1.19

SOURCE: H. T. Harvey & Associates, 2005; AES, 2004.



SOURCE: USGS Aerial Photograph, 7/16/1993; AES, 2006

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Figure 3.5-9
Waters of the U.S. – North Fork Site

3.6 CULTURAL AND PALEONTOLOGICAL RESOURCES

This section provides a background assessment of cultural and paleontological resources in the vicinity of the Madera and North Fork sites. A cultural resources survey for the Madera and North Fork sites was prepared by Analytical Environmental Services (AES) in February 2005 and is summarized below. The cultural resources survey is presented as a confidential appendix to this EIS and is available to authorized parties under a separate cover.

A preliminary assessment of paleontologic sensitivity for the Madera and North Fork sites was prepared by AES in February and April 2005. An additional Paleontological Assessment was performed in October 2008 (see **Appendix AA**). These reports are summarized below.

3.6.1 SETTING – MADERA COUNTY REGION

PREHISTORY

Madera Site Vicinity

The Madera site is located in the Central Valley archaeological region (San Joaquin Valley sub-region) of California (Moratto, 1984). South of Stockton, the Central Valley remains one of the least-known archaeological areas of the State due in part to the fact that large-scale excavations have been limited to early reservoir projects at the Buchanan, San Luis, Los Banos, and Little Panoche reservoirs (Moratto, 1984). Other work has included a few salvage archaeological projects around the Central Valley and at Buena Vista Lake. In addition to the paucity of archaeological research in the area, the depositional history of the central valley has likely caused archaeological evidence to be deeply buried under alluvium, particularly in the lower reaches of the San Joaquin and Sacramento river drainages and the Delta area where up to 10 meters of sediments have accumulated during the past 5,000 to 6,000 years (Moratto, 1984).

According to Fredrickson (1974) human history in California can be divided into three broad periods: the Paleoindian period, the Archaic period, and the Emergent period. This scheme used sociopolitical complexity, trade networks, population, and the introduction and variations of artifact types to differentiate between cultural units; the scheme remains the dominant framework for the prehistoric archaeological research in this region.

The Paleoindian period (12,000 to 8000 B.C.) was characterized by small, highly mobile groups occupying broad geographic areas. During the Archaic period, consisting of the Lower Archaic period (8000 to 5000 B.C.), Middle Archaic period (5000 to 3000 B.C.), and Upper Archaic period (3000 B.C. to A.D. 500), geographic mobility may have continued, although groups began to establish longer-term base camps in localities from which a more diverse range of resources could be exploited. The addition of milling tools, obsidian and chert concave-base points, and the

occurrence of sites in a wider range of environments suggest that the economic base was more diverse. By the Upper Archaic, mobility was being replaced by a more sedentary adaptation in the development of numerous small villages, and the beginnings of a more complex society and economy began to emerge. During the Emergent period (A.D. 500 to historic contact), social complexity developed toward the ethnographic pattern of large, central villages where political leaders resided, with associated hamlets and specialized activity sites. Artifacts associated with the period include the bow and arrow, small corner-notched points, mortars and pestles, and a diversity of beads and ornaments (Gerike et al., 1996:3.11-3.17).

North Fork Site Vicinity

The North Fork site is located in the Sierra Nevada archaeological region. The earliest residents in the general vicinity of the study area are represented by the Fluted Point and Western Pluvial Lakes Traditions, which date from about 11,500 to 7,500 years ago (Moratto, 1984). These early peoples are thought to have subsisted using a combination of generalized hunting and exploitation of plants and animals in nearby lakes (Moratto, 1984).

Early cultural assemblages were followed by an increase in Native population density approximately 7,500 years ago. In the Central Valley of California in the general vicinity of the North Fork site, aboriginal populations continued to expand between 6,500 and 4,500 years ago, with the possibility that Macro-Penutian-speaking arrivals (including Miwok, Yokuts and Nisenan) introduced more extensive use of bulbs and other plant foods, animal and fishing products more intensively processed with mortars and pestles, and perhaps the bow and arrow and associated small-stemmed and corner-notched projectile points. The peoples occupying the North Fork site area at the time of initial contact with European American populations were the Western Mono.

ETHNOGRAPHY

At the time of European contact, typical Native American occupation throughout the state was characterized by separate and politically autonomous nations first referred to by ethnologist A.L. Kroeber as “tribelets” (Kroeber, 1925; Moratto, 1984). Tribelets were typically governed by a chief and tended to have one or more permanent village sites with smaller seasonal/temporary camps scattered throughout the tribelet territory for food procurement. Tribelets sharing similar cultural elements and linguistic traits comprised “nonpolitical ethnic groups” and have been grouped by ethnologists into the language families we are familiar with today. It is understood today that the “boundaries” between language families were temporally and spatially fluid, with different groups occupying the same areas over time. Many distinctions made by the early ethnographers were more an exercise in organization than a real reflection socio-political identity.

The North Fork site is located in a larger transitional area between the Foothill and Northern Valley Yokuts language groups (Spier, 1978:471; Wallace, 1978:463) on the western side of the Sierra Nevada foothills as it transitions into the Great Central Valley. The area around the present city of Madera, three miles southeast of the Madera project site, was characterized as a hub of intertribal activity, including social, ceremonial, political, and economic exchange and interaction between the Yokuts and their neighbors. The Foothill Yokuts were a group of about 15 named tribelets that occupied the eastern Central Valley and surrounding Sierra Nevada foothills. Though loosely connected through trade and marriage, like their Monache neighbors to the east, there was no Yokuts nation or overarching political unity. The distinctions between groups were most obviously linguistic and territorial (Spier, 1978:426, 471; Wallace, 1978:462).

It has been estimated that at the time of European contact, the foothills of the Sierra Nevada were the most densely inhabited area in California. The Native American population of the region, comprised primarily of the Yokuts within the Valley and eastern Sierra foothills, Miwok to the north, and Monache to the east, was estimated to have exceeded 180 persons per square mile (Kroeber in Spier, 1978) with a total population of about 4,000 in 1770. Foothill Yokuts villages, like their neighbors, were small and loosely organized with no principal village site. Each village typically averaged approximately 13 individuals in anywhere from three to eight huts.

After AD 1770, Spanish colonial expeditions, along with the mission system and the Euroamerican invasion, caused great disruptions both in settlement patterns and population for the native Californians. Exposure to illnesses brought by the Spaniards, the Mexicans, and later the Americans, led to significant attrition rates due to diseases for which they had little or no immunity. The most significant impact came from the epidemic of 1833 (most likely malaria), which claimed an estimated 75% of the Central Valley's native inhabitants by 1846 (Moratto, 1984). Although some Foothill Yokuts became residents of the Tule River Indian Reservation, most settled in hamlets or isolated dwellings scattered throughout their traditional territory. Picayune, one such community near Oakhurst, had an estimated population 112 persons in 1950 (Spier, 1978:483). Early explorers and 20th century ethnographers have documented what remained of the Foothill Yokut culture post contact. Particulars of their material culture and society relevant to the identification of artifacts and features at the project site are described below.

Hunting, fishing, and gathering of plant foods comprised the subsistence strategy of the Yokuts. Seasonal movements to various elevations on the Sierra Nevada foothills were common to maximize the exploitation of resources. Deer were the primary game staple, hunted by stalking in disguise, driving into ambush, tracking, or trapping with a spring-pole device that caught the animal by the leg. Animals were also dispatched by the bow and arrow (Spier, 1978). Bears were hunted, being driven from their caves in the spring into hunting parties lead by a bowman.

Ground squirrels and rabbits were commonly smoked from their holes or pulled out by twisting long flexible sticks into their fur.

Acorns and pinenuts, after gathering, were stored in elevated granaries located near the dwellings. Manzanita berries were mashed and strained with water to create a beverage. Insects, grubs, seeds, and yucca roots were also eaten and honey was favored when it could be found (Spier 1978).

Obsidian was the principal material used for making stone tools, particularly for knives, scrapers, and projectile points. Bows were fashioned from California laurel or juniper wood. Steatite was a common material used in the making of cooking vessels. Most basketry produced by the Yokuts was similar in style to that of their immediate neighbors, the Monache. Baskets included twined burden-baskets, seed beaters, sieves, fan-shaped winnowers, coiled mush, storage or washing baskets, winnowing trays, and gambling trays. Woven textiles were not produced and although potsherds sporadically appear in archaeological contexts, Yokuts apparently did not make earthenware vessels, obtaining them instead through trade (Wallace, 1978:465).

Yokuts dwellings took any one of three forms; 1) a conical grass and willow twig-thatched house with excavated floor, 2) an oval grass-thatched house with a center ridgepole, or 3) an open, flat shade grass structure used as a shaded outdoor living and work place during the hot weather. Sweathouses, when present, constituted the other major structure of a village and were similar in construction to the oval house with a center ridgepole. The floor of the sweathouse was usually excavated several feet below grade and the roof was made saplings held under brush and covered with earth.

HISTORICAL CONTEXT

Madera County is located in the exact center of California, in the heart of the Central Valley and the Central Sierras (Madera, County of, 2004). It is one of the fastest growing counties in California. Fresno County borders on the south, Mariposa and Merced Counties on the north, and Mono County on the east.

Early Euro-American Exploration

The early Spanish expeditions into Alta California avoided the Madera area, hence no Spanish settlements existed there (Hoover, 1990). The geography of the County is largely responsible for its early isolation. “It was practically impossible to penetrate the tulares from the west or to cross the sloughs that covered the whole central portion of the San Joaquin Valley at high water” (Hoover, 1990). Early American explorers began cutting trails through Madera County as early as 1827 when Jedediah Strong Smith and later Kit Carson, as well as the Hudson Bay Company,

passed through the area in pursuit of beaver pelts (Hoover, 1990). However, the first record of the County was not made until John C. Fremont camped along the San Joaquin River on April 4 through 6, 1844, at a point near where State Route 145 crosses the river today (Hoover, 1990).

American Settlement

An early leader in the Madera area, James D. Savage arrived in California to work the southern mines and opened four trading posts, three in Madera County and one in Mariposa County, between 1848 and 1852 (Hoover, 1990). Savage is known to have employed Chinese to work the San Joaquin River for him and was at first involved in fighting the local Indians, but later befriended them, marrying at least five Indian girls, one from each of the neighboring tribes (Madera, County of, 2004).

In addition to Savage, other local ranchers hired Chinese laborers to clear their fields of rocks and to use them for boundary fences (Madera, County of, 2004). These dry-laid fences remain today and can still be seen in many areas across the County.

The town of Madera was laid out by the California Lumber Company in 1876 to take advantage of a settlement that had arisen where the Central Pacific Railroad Station met the terminus of a 63-mile flume descending from the wooded highlands (Hoover, 1990). When Madera County was created from a portion of Fresno County in 1893, the town of Madera was made the county seat; it continues to serve as the county seat today.

Mining Industry

With the discovery of gold in 1849, mines and mining settlements began springing up along the San Joaquin and Fresno rivers (Hoover, 1990). Mines were located around Coarsegold Gulch and Grub Gulch, along the Fresno River and Gold Creek near Hildreth (southeast of Oakhurst), and around Fine Gold Gulch (Madera, County of, 2004). Coarsegold, also known as Texas Flat for the five Texans that founded it, was the largest placer mining camp in Madera County. The name was changed to Coarsegold because the sand yielded extremely coarse particles of gold. This distinguished it from Fine Gold Gulch, 6 miles to the southeast (Hoover, 1990). The California Journal credits what is now Madera County with the production of \$1,350,000 in gold between 1880 and 1892 (Madera, County of, 2004). Today, little trace remains of the many mining camps that at one time made up this district.

Madera County also produced quartz and copper mines in the mid to late 1800s, and, until the end of World War II (Hoover, 1990).

3.6.2 REGULATORY BACKGROUND

NATIONAL REGISTER OF HISTORIC PLACES ELIGIBILITY

The National Historic Preservation Act of 1966 (as amended through 2000) authorizes the National Register of Historic Places (NRHP), a program for the preservation of historic properties (“cultural resources”) throughout the Nation. The eligibility of a resource for NRHP listing is determined by evaluating the resource using criteria defined in 36 CFR 60.4 as follows:

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, association, and

- A. that are associated with events that have made a significant contribution to the broad patterns of our history;
- B. that are associated with the lives of persons significant in our past;
- C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. that have yielded, or may be likely to yield, information important to prehistory or history.

Unless a site is of exceptional importance, it is not eligible for listing in the NRHP until 50 years after it was constructed.

All properties change over time. Therefore, it is not necessary for a property to retain all its historic physical features or characteristics in order to be eligible for listing on the NRHP. The property must, however, retain enough integrity to enable it to convey its historic identity; in other words, to be recognizable to a historical contemporary. The National Register recognizes seven aspects or qualities that, in various combinations, define integrity:

1. **Location** – the place where the historic property was constructed or the place where the historic event occurred.
2. **Design** – the combination of elements that create the form, plan, space, structure, and style of a property.
3. **Setting** – the physical environment of a historic property.
4. **Materials** – the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.

5. **Workmanship** – the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.
6. **Feeling** – a property's expression of the aesthetic or historic sense of a particular period of time.
7. **Association** – the direct link between an important historic event or person and a historic property (National Park Service 1990).

To retain historic integrity a property will always possess several, and usually most, of these aspects. In order to properly assess integrity, however, significance (why, where, and when a property is important) must first be fully established. Therefore, the issues of significance and integrity must always be considered together when evaluating a historic property.

3.6.3 PREHISTORIC AND HISTORIC RESOURCES – MADERA SITE

RECORDS AND LITERATURE SEARCH

Methodology

A record search was completed at the Southern San Joaquin Valley Information Center (SSJVIC), of the California Historical Resources Information System (CHRIS) located at California State University, Bakersfield, by SSJVIC staff (SSJVIC File No. 04-026). Archaeological site base maps and records, survey reports, and other pertinent materials were reviewed. Sources of information included, but were not limited to, the listings of properties on the National Register of Historic Places (NRHP), California Historical Landmarks, California Register of Historical Resources, and California Points of Historical Interest as listed in the Office of Historic Preservation's Historic Property Directory for Madera County (OHP, 2004).

The Office of Historic Preservation has determined that structures in excess of 45 years of age should be considered potentially important historical resources, and former building and structure locations could be potentially important historic archaeological sites. Therefore, archival research included an examination of old maps to gain insight into the nature and extent of historical development in the general vicinity, and especially on the Madera site.

In addition, ethnographic literature that describes appropriate Native American groups, county histories, and other primary and secondary sources were reviewed.

Results

The results of the record search indicate that no portions of the Madera site have previously been surveyed. However, there has been one survey conducted adjacent to the Madera site (Hatoff, et al., 1995), and one survey conducted within one mile (Wadell Engineering Corporation, 1996).

No cultural resources have been recorded within the Madera site, or within one mile of the Madera site.

NATIVE AMERICAN CONSULTATION

A letter requesting a check of the sacred lands file for the Madera site was sent to the Native American Heritage Commission (NAHC) in February 2004. The NAHC responded indicating that they have no record of sacred lands within or near the Madera site. The NAHC also supplied the name of one Native American individual who may have knowledge of cultural resources in the project area. A letter requesting information about potential cultural resources on both the Madera and North Fork sites was sent to this individual on February 23, 2004. No responses were received. Copies of correspondence are located in **Appendices J and Q**.

FIELD SURVEY

Methodology

A reconnaissance level survey of the Madera site was conducted in March 2004 and an intensive level cultural resources survey was completed by AES cultural resources specialists Kelly Heidecker and Gary Arnold on February 9 through 10, 2005. The Madera site was examined by walking zigzag transects spaced approximately 25 meters apart; thick ground cover and standing water conditions prevented closer transects.

Based on archival review, it was anticipated that prehistoric resources were not likely to be encountered during a walkover survey of the site, and historic-period cultural resources would be present in the form of a ranching complex. Prehistoric archaeological site indicators include, but are not limited to: flakes and chipped stone tools; grinding and mashing implements such as slabs and handstones, and mortars and pestles; and locally darkened midden soils containing some of the previously listed items plus fragments of bone, shellfish, and fire-affected stones. Historic period site indicators generally include: standing structures, fragments of glass, ceramic and metal objects, milled and split lumber, and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

Department of Parks and Recreation (DPR) site recordation forms (DPR 523 forms) were prepared for each site located during the survey.

Results

One historical site was identified and recorded (AES-05-1 (Daulton Ranch)) during the field survey on February 10, 2005. Although the majority of the Madera site is now agricultural fields, remnants of Schmidt Creek, now channelized through the site, and standing water in many locations towards the south side of the property, indicate that the area retains much of its original

drainage patterns. Oral interviews with the current land tenant, who has lived on site for 10 years, indicated that the Madera site floods often during the winter months (Flower, pers. comm., 2005).

AES-05-1 (Daulton Ranch)

The site consists of the remnants of a farm complex intermixed with a modern prefab residential dwelling, Quonset hut, and ranching features in their original agricultural setting. The primary structures related to the historical period of the site include a barn and shed, both built circa 1953 (**Figure 3.6-1**). Personal communication with the current tenant indicated the farm was once owned by the Daulton family, who were early prominent local citizens (Flower, pers. Communication, 2005). This claim is further evidenced by the faint remains of the ranch name painted on the side of the shed, as can be seen **Figure 3.6-1, Photograph 2**.

Extant features of the historical farm complex include a large, gabled barn, a shed, and associated cattle-related features such as rail fencing that forms a corral and loading chute, and a large round water trough made of poured concrete. County records indicate that his barn was constructed in 1953, and field observations concur with that date.

The remnants of this historic farm complex were identified, recorded, and evaluated for its eligibility to the NRHP. The evaluation found that though the remains of the Daulton Farm are a resource representative of the theme of early ranching/agricultural development within the Central Valley (Criterion A), the integrity of the setting, association, and feeling, however, have been altered by the removal of the original residence and the introduction of a modern prefab dwelling and large Quonset hut being used as a workshop. While the remaining structures may appear to meet criterion A because of their association with the theme of early California farming, they do not portray the importance of this theme as well as might a farm where the original residence has not been replaced by a modern dwelling, etc. Moreover, the barn itself is not architecturally distinctive and has no intrinsic characteristics that set it apart from other vernacular barns in this area. Therefore, the evaluation of the historical and architectural significance of the Daulton Farm found that it does not meet the criteria for inclusion on the NRHP. This site is also located outside the developed area of the Madera site. Therefore, the proposed project would not affect known historic properties.

3.6.4 PALEONTOLOGICAL RESOURCES – MADERA SITE

INTRODUCTION

This section presents documentation on reported paleontological deposits as well as an analysis on the potential for unreported paleontological



Photograph 1: Barn east end of corral view northeast



Photograph 2: North side of shed showing old ranch names

resources to be present on the Madera site. Paleontological resources are defined as the traces or remains of prehistoric plants and animals. Such remains often appear as fossilized or petrified skeletal matter, imprints or endocasts, and reside in sedimentary rock layers.

TYPOLOGIES AND FORMATION PROCESSES

The processes involved in the preservation of paleontological resources result in several types of remains. Factors affecting the persistence of paleontological resources vary between species, and broadly include geological formation processes (**Section 3.2**), climate, soil and rock chemistry, and organism morphology. Paleontological resources are discussed here as fossil remains, although other types of remains occur elsewhere.

Fossils are the remains of plants and animals embedded in layers of rock, which have retained some degree of their original characteristics over a long period of time. Remains are buried under layers of sediment, which under building pressure become sedimentary rock. Paleontological remains can be those of organism structure, such as skeletal parts, shell, tree trunks, pollen, endocasts or imprints, or they can be remnants of activity, such as footprints or tunnels of burrowing organisms. Soft tissues are less frequently fossilized, because they usually decay before fossilization processes take place. Since fossil remains occur in sedimentary rock formations, they tend to persist unless the rock has undergone significant changes. Fossils do not occur in metamorphic rock formations.

Fossils of considerable age may be subject to varying degrees of mineralization, at times resulting in the total replacement of original, organic matter by minerals. The agents of mineralization are most commonly composed of calcium carbonates, such as calcite and aragonite, and silicates, such as quartz, opal and chalcedony. Less common materials are iron disulfides, such as pyrite and marcasite, limonite, sulphates, such as gypsum, phosphates, such as calcium phosphate and vivianite, and glauconite. These minerals are typically transported in minute quantities by seeping water, with aggregation over time.

REGULATORY BACKGROUND

The Antiquities Act of 1906 (PL 59-209; 16 United States Code 431 et seq.; 34 Stat. 225) calls for the protection of historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on Federal land. Additional provisions appear in the Archaeological and Historic Data Preservation Act of 1974, as amended, for the survey, recovery, and preservation of significant scientific, prehistoric, historic, archaeological, or paleontological data, in such cases wherein this type of data might be otherwise destroyed or irrecoverably lost as a result of Federal projects.

REGIONAL CHARACTERISTICS

The Madera site lies within the Great Valley Geomorphic Province discussed in **Section 3.2**. The floor of this Province, younger in age than the upland areas of the Sierra Nevada Province, is comprised of alluvial sediments, which at varying depths throughout the County has compacted into sedimentary rock formations. While the formation of the Great Valley Province began in the late Jurassic period, the landmass that eventually became the valley was under seawater until approximately 5 million years ago, when deposition and uplifting transformed it into habitat area for Pliocene and latter-epoch flora and fauna.

During field reconnaissance of the Madera site, surface deposits were found to consist of graded and tilled topsoil with areas of local hardpan. Mid to late Pleistocene Epoch deposits found below the surface have the potential to contain three stratigraphic units; Turlock Lake Formation, Riverbank Formation, and Modesto Formation. Neighboring sites have produced vertebrate fossils in all three units (**Appendix AA**).

The discovery of over 5000 fossil specimens has been recorded at the Fairmead Landfill, approximately 6 miles north of the Madera Site. These specimens have been recorded in an area of 15 acres and at depths from four to twenty meters below the surface, a majority being within the upper Turlock Lake Formation at depths between six and eight meters. Although the unit of the Madera Site is the Riverbank Formation, fossils have been discovered within this unit at the Fairmead Landfill (**Appendix AA**).

DATABASE SEARCH

Evidence for the age range of the valley portion of Madera County appeared in findings during the database searches of the University of California Museum of Paleontology (UCMP) in April of 2005, and the Natural History Museum of Los Angeles County in September 2008. Late Cretaceous period documentation for the County's valley portion is limited to several species of bivalves, related to clams, scallops and oysters. The discovery of fossils ~~within the vicinity of the proposed project sites, in Madera County~~ dated from the Tertiary age (approximately 65 million years ago to 1.5 million years ago), when larger mammals became prevalent on land, have been limited to *Trochocyathus californianus*, a type of fossil corralite.

Records for terrestrial mammals and other fossil specimens of Quaternary age (1.5 million years ago to present) appear within 6 miles of the Madera site at the Fairmead Landfill. The Fairmead Landfill has produced an abundance of Pleistocene-epoch mammals, reptiles and birds. To date over ~~15,000~~5,000 specimens have been discovered at depths of 10 to 60 feet over a 14-acre area. Only 190 entries for this site appeared in the UCMP online database at the time the records search was conducted. The full extent of the site is not yet known.

FIELD SURVEY

No evidence of fossils on the Madera site was observed during the Cultural Resources survey conducted on February 9 and 10, 2005, or the Paleontological Assessment survey conducted in September 2008. However, surface and subsurface sandstone and hardpan clumps of various sizes were observed to be fairly ubiquitous. Subsurface probing with hand trowels revealed that hardpan layers are present in some places to within 10 centimeters below ground surface. The hardpan observed was reddish in color, and as such likely originated in the mafic rock formations in the Sierra Nevadas to the east.

POTENTIAL FOR FOSSIL DISCOVERY

Based on the age range of the Great Valley formation, and on the extent of paleontological discovery in the vicinity of the Madera site, there is potential for subsurface Pleistocene-epoch fossils to be present on the Madera site. Such fossils would be present below the levels that have been disturbed by grading and tilling.

3.6.5 PREHISTORIC AND HISTORIC RESOURCES – NORTH FORK SITE

RECORDS AND LITERATURE SEARCH

Methodology

A records search was completed at the SSJVIC, of the CHRIS located at California State University, Bakersfield, by SSJVIC staff (SSJVIC File No. 05-033). Archaeological site base maps and records, survey reports, and other pertinent materials were reviewed. Sources of information included, but were not limited to, the listings of properties on the NRHP, California Historical Landmarks, California Register of Historical Resources, and California Points of Historical Interest as listed in the Office of Historic Preservation's Historic Property Directory for Madera County (OHP, 2005). Historic maps, plats, and aerial photographs were also reviewed to gain insight into the nature and extent of historical development in the general vicinity, and especially on the North Fork site.

In addition, ethnographic literature that describes relevant Native American groups, county histories, and other primary and secondary sources were reviewed.

Results

The results of the records search indicate that portions of the property have been subjected to two previous cultural resources studies (Francis, 2000; Napton and Greathouse, 1995). Napton and Greathouse (1995) conducted a linear survey of a proposed fuel break project that bisected the North Fork site. No cultural resources were identified. In 2000, Francis surveyed the complete

property as part of fire pre-suppression project. Seven archaeological resources were identified within the property (see **Table 3.6-1**).

TABLE 3.6-1
RESOURCES IDENTIFIED WITHIN THE NORTH FORK SITE

Resource I.D. #	Description
P-20-2353	Prehistoric bedrock mortar outcrop
P-20-2354	Prehistoric bedrock mortar outcrop, lithic scatter, midden deposit, historic-period debris scatter
P-20-2355	Historic-period water conveyance ditch
P-20-2356	Prehistoric bedrock outcrop, lithic scatter, midden deposit
P-20-2357	Possible historic-period mining feature
P-20-2358	Prehistoric bedrock mortar outcrop, lithic scatter
P-20-2359	Prehistoric bedrock mortar outcrop, lithic scatter, midden deposit, historic-period debris scatter

SOURCE: Francis, C.W. 2000.

NATIVE AMERICAN CONSULTATION

Please refer to **Section 3.6.3** for a detailed discussion of the Native American consultation process.

FIELD SURVEY

Methodology

A reconnaissance level cultural resources survey of the North Fork site was completed by AES cultural resources specialist Kelly Heidecker on February 15, 2005. At that time, the North Fork site was examined by walking zigzag transects spaced approximately 15 meters apart in areas accessible to pedestrian survey, which comprised approximately 20 acres of the 80-acre site. The remaining 60 acres were not surveyed due to steep slopes, rocky terrain, and heavy undergrowth.

Based on archival review, it was anticipated that prehistoric and historic period resources might be encountered during a walkover survey of the site. Prehistoric archaeological site indicators include, but are not limited to: flakes and chipped stone tools; grinding and mashing implements such as slabs and handstones, and mortars and pestles; and locally darkened midden soils containing some of the previously listed items plus fragments of bone, shellfish, and fire affected stones. Historic period site indicators generally include: standing structures, fragments of glass, ceramic and metal objects, milled and split lumber, and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

Results

No cultural resources were identified during the survey conducted on February 15, 2005. The poor visibility due to dense vegetation and steep terrain limited the field survey to the centrally located meadow area and areas surrounding it. None of the cultural resources identified in the records search are located in the meadow area or other areas surveyed during the field visit.

3.6.6 PALEONTOLOGICAL RESOURCES – NORTH FORK SITE

REGIONAL CHARACTERISTICS

The North Fork site lies within the Sierra Nevada Geomorphic Province in **Section 3.2**. This Province is considerably older in age than the lowland areas of the Great Valley Province. It is composed primarily of granite and granitic intrusive igneous formations, which formed as a result of magma displacement caused by the subduction of the Farallon Plate in the formation of California. Subsequent erosion and Pleistocene glacial activity have stripped the older top layers from the Sierra Nevada, and regional freeze and thaw patterns have washed the matter as alluvium into the lower elevations, including the Great Valley Province.

DATABASE SEARCH

A database search of the UCMP was conducted in April of 2005 and September of 2008 (**Appendix AA**). Paleontological repository locality records indicated that there have been no findings at or in the vicinity of the North Fork site (**Appendix AA**).

FIELD SURVEY

No paleontological resources were identified during the field surveys conducted on February 15, 2005 or September 2008.

Potential for Fossil Discovery

Fossil discovery on the North Fork site is unlikely. Surface soil conditions are likely too young to bear materials of paleontological nature. Soil layers likely to contain fossils have already eroded into the valley below. The granite formations beneath the North Fork site would not support fossil formation.

3.7 SOCIOECONOMIC CONDITIONS AND ENVIRONMENTAL JUSTICE

3.7.1 SOCIOECONOMIC CHARACTERISTICS OF MADERA COUNTY

POPULATION

Regional Population

As shown in **Table 3.7-1**, the 2007 population of Madera County is estimated to be 147,778. The majority of the regional population resides in unincorporated Madera County.

TABLE 3.7-1
REGIONAL POPULATION

Location	Population			
	1990	2000	2007*	2012**
Madera County (total)	86,400	123,109	147,778	165,061
Chowchilla	5,875	11,127	13,254	14,680
Madera	28,800	43,207	54,195	61,732
Unincorporated County	51,700	68,775	80,329	88,649
State of California (total)	29,758,213	33,871,648	33,871,648	37,075,982

NOTES: * Estimate.

** Projection.

SOURCE: Innovation Group, 2008.

The Cities of Madera and Chowchilla are the only incorporated communities in the County. Madera, the County seat, is home to more than three times the population as in the City of Chowchilla. Both the Madera site and the North Fork site are located in unincorporated Madera County. The Madera site is located adjacent to the City of Madera and near the City of Chowchilla. The North Fork site is located near the unincorporated community of North Fork and is relatively distant from the Cities of Madera and Chowchilla.

Population Trends

The population of Madera County (County) grew rapidly from 86,400 people in 1990 to 123,109 people in 2000, an increase of 42.5 percent. Between 2000 and 2007, the County's population is estimated to have grown to 147,778, a slightly more moderate increase of approximately 20.0 percent.

The populations of Chowchilla and Madera also increased rapidly from 1990 to 2000. The population of Chowchilla almost doubled and the population of Madera increased by 50 percent. As of 2007, the population growth of both the Cities of Chowchilla and Madera have slowed somewhat.

The population growth rate in Madera County is greater than that of the State of California. The County has historically experienced growth due to the number of San Francisco Bay Area residents moving into the area seeking less expensive housing options. Although more recent data suggests that growth may be slowing over the past year during the recent downturn in the economy, City officials believe population growth will increase again in the next cycle of economic activity (Innovation Group, 2008).

HOUSING

As shown in **Table 3.7-2**, there are currently about 44,986 housing units in Madera County. Of these, 4,678 were estimated to be vacant in 2005. Regional vacancy rates ranged from 4.34 to 14.07 and averaged 10.40. As shown in **Table 3.7-3**, 2005 vacancy rates are generally high, when compared with historical rates since 1990. The Cities of Madera and Chowchilla generally have lower vacancy rates than the unincorporated portions of the County.

TABLE 3.7-2
2005 REGIONAL HOUSING ESTIMATES

Location	Total Housing Units*	Percent Vacant*	Vacant Units*
Madera County (total)	44,986	10.40	4,678
Chowchilla	3,021	5.49	165
Madera	14,314	4.34	621
Unincorporated County	27,651	14.07	3,890

NOTES: * Estimates. These figures do not include seasonal, recreational, or occasional use residences.
SOURCE: California Department of Finance, 2005.

TABLE 3.7-3
HISTORICAL VACANCY RATES

Location	Housing Vacancy Rate															
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Madera County	7.98	7.98	7.99	8.01	8.01	8.01	8.00	7.99	7.99	7.99	10.48	10.47	10.46	10.43	10.43	10.40
Chowchilla	4.01	3.99	4.01	4.02	3.99	4.00	4.02	4.02	4.01	4.02	5.50	5.50	5.51	5.50	5.50	5.49
Madera	3.89	3.89	3.89	3.90	3.89	3.89	3.90	3.90	3.90	3.90	4.34	4.34	4.34	4.33	4.34	4.34
Unincorp. County	10.51	10.50	10.50	10.50	10.51	10.51	10.51	10.51	10.51	10.51	14.07	14.07	14.07	14.07	14.07	14.07

NOTES: All rates are based on California Department of Finance estimates except for 1990 and 2000, which are based on U.S. Census counts. These figures do not include seasonal, recreational, or occasional use residences. Historically low rates during the shown time period are italicized.
SOURCE: California Department of Finance, 2005.

EMPLOYMENT AND INCOME

Employment

Madera County had approximately 64,400 people in its 2007 labor force, which is approximately 44 percent of the total population. Approximately 7.6 percent of the labor force was unemployed in 2007. Since 2005 the unemployment rate has remained below 8 percent, but in previous years, unemployment was higher (9 percent in 2004 and over 10 percent in 2002 and 2003). Local officials attribute much of the reduction in unemployment to the introduction of jobs at the Chukchansi Casino, which opened in June 2003. While over the past several years local unemployment rates have improved, they remain high compared to the state rate (5.4 percent in 2007).

Influenced by the main industry in the County, agriculture, the unemployment rate is extremely dynamic over the course of the year. For example, in September 2007, the unemployment rate was only 6.3 percent, but by December unemployment was as high as 8.8 percent.

Income

The average annual household income in Madera County, at \$58,576 (2007 estimate), is much lower than the averages of California and the United States. The City of Madera has an even lower average income than the County at \$49,409. There are two main reasons for a lower average income level in the region, a high unemployment rate and the seasonal nature of the agricultural industry. Median household income for census tracts in the vicinity of the Madera and North Fork sites is contained in **Tables 3.7-4** and **3.7-5**. Census 2000 data represents the most current household income data available by census tract. The use of older income data is expected to result in a conservative estimate of income when compared to 2004 poverty income levels, given that income levels tend to rise over time due to inflation.

TABLE 3.7-4
HOUSEHOLD INCOME DATA BY CENSUS TRACT – MADERA SITE AND VICINITY

	Households: Median household income in 1999 (dollars)	Occupied housing units: Average household size; Total	2004 Poverty Level (dollars) *
Census Tract 2	33,289	3.34	19,803
Census Tract 5.03	43,822	2.99	15,219
Census Tract 5.06	41,806	3.67	19,803

NOTES: * Assumes average household size, conservatively rounded up to the nearest person and with a conservative assumption with regards to the number of children under 18 years.

SOURCE: U.S. Census Bureau, 2000, 2004; AES, 2005.

TABLE 3.7-5
HOUSEHOLD INCOME DATA BY CENSUS TRACT – NORTH FORK SITE AND VICINITY

	Households: Median household income in 1999 (dollars)	Occupied housing units: Average household size; Total	Poverty Level (dollars) *
Census Tract 1.02	35,858	2.43	15,219

NOTES: * Assumes average household size, conservatively rounded up to the nearest person and with a conservative assumption with regards to the number of children under 18 years.

SOURCE: U.S. Census Bureau, 2000, 2004; AES, 2005.

3.7.2 SOCIOECONOMIC CHARACTERISTICS OF THE TRIBE

The North Fork Rancheria of Mono Indians is comprised of 1,356 individuals. Of these 1,356 individuals, approximately 325 currently reside in Madera County, with 220 living in the Community of North Fork, 63 in the City of Madera, and the remainder in the City of Chowchilla and unincorporated areas. Approximately 412 members reside within Fresno County, 276 of which live in the City of Fresno. The remaining Tribal members live out of the area. The Tribe has grown rapidly over the past few years, primarily due to new enrollment.

In general, the economy of the Tribe lags behind the economy of the local community. According to a 2005 BIA Indian Population and Labor Force Report, the Tribal unemployment rate was approximately 15 percent, which is almost double the unemployment rate for Madera County. In addition, approximately 21 percent of employed Tribal members have incomes below the poverty level.

3.7.3 TRIBAL ATTITUDES, EXPECTATIONS, LIFESTYLE AND CULTURE

Both the Tribal government and individual Tribal members participate in area political and social activities. Tribal children attend local area schools and adult Tribal members are employed by local businesses. Altogether, Tribal attitudes and expectations favor increasing participation in, and benefit from, the regional economy, with continuation of the long tradition of comfortable coexistence and cooperation with their non-Indian neighbors.

3.7.4 ENVIRONMENTAL JUSTICE

POLICY/REGULATORY CONSIDERATIONS

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, as amended, directs Federal agencies to develop an Environmental Justice Strategy that identifies and addresses disproportionately high and adverse human health or

environmental effects of their programs, policies, and activities on minority populations and low-income populations. The Council on Environmental Quality (CEQ) has oversight responsibility of the Federal Government's compliance with Executive Order 12898 and National Environmental Policy Act (NEPA). The CEQ, in consultation with the United States Environmental Protection Agency (USEPA) and other agencies, has developed guidance to assist Federal agencies with their NEPA procedures so that environmental justice concerns are effectively identified and addressed.

According to guidance from the CEQ (1997b) and the USEPA (USEPA, 1998), agencies should consider the composition of the affected area, to determine whether minority populations, low-income populations, or Indian tribes are present in the area affected by the proposed action, and if so whether there may be disproportionately high and adverse environmental effects. Communities may be considered "minority" under the executive order if one of the following characteristics apply:

- The cumulative percentage of minorities within a census tract is greater than 50 percent (primary method of analysis); or
- The cumulative percentage of minorities within a census tract is less than 50 percent, but the percentage of minorities is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis (secondary method of analysis).

According to the USEPA, either the county or the state can be used when considering the scope of the "general population." A definition of "meaningfully greater" is not given by the CEQ or USEPA, although the USEPA has noted that any affected area that has a percentage of minorities that is above the state's percentage is a potential minority community and any affected area with a minority percentage double that of the state's is a definite minority community under Executive Order 12898.

Communities may be considered "low-income" under the executive order if one of the following characteristics applies:

- The median household income for a census tract is below the poverty line (primary method of analysis); or
- Other indications are present that indicate a low-income community is present within the census tract (secondary method of analysis).

In most cases, the primary method of analysis will suffice to determine whether a low-income community exists in the affected environment. However, when a census tract income may be just over the poverty line or where a low-income pocket within the tract appears likely, the secondary

method of analysis may be warranted. Other indications of a low-income community under the secondary method of analysis include limited access to health care, overburdened or aged infrastructure, and dependence on subsistence living.

For the Madera site, the following census tracts were analyzed for characteristics relevant to an environmental justice analysis:

- The census tract that includes the Madera site (tract 5.03), and
- Tracts adjacent to tract 5.03 (except to the west and south, where tract 5.03 extends over five miles from the Madera site).

Figure 3.7-1 displays the census tracts in the vicinity of the Madera site.

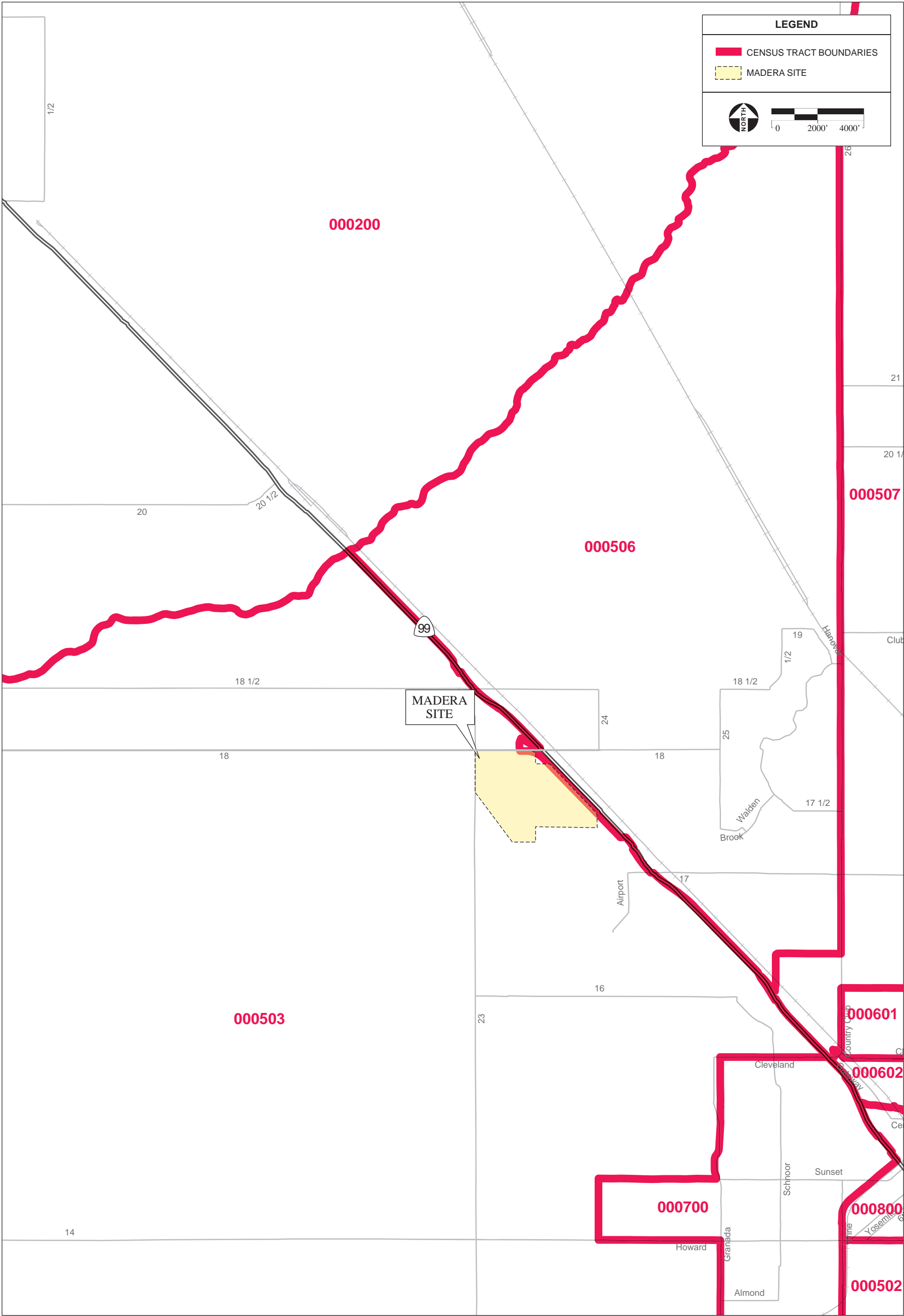
For the North Fork site, the census tract that includes the North Fork site (tract 1.02) was analyzed for characteristics relevant to an environmental justice analysis. No other census tracts were analyzed given the expansive nature of tract 1.02, which extends at least four miles from the North Fork site in all directions, to the Fresno County border to the east and south, and includes most of the nearby community of North Fork. **Figure 3.7-2** displays the census tracts in the vicinity of the North Fork site.

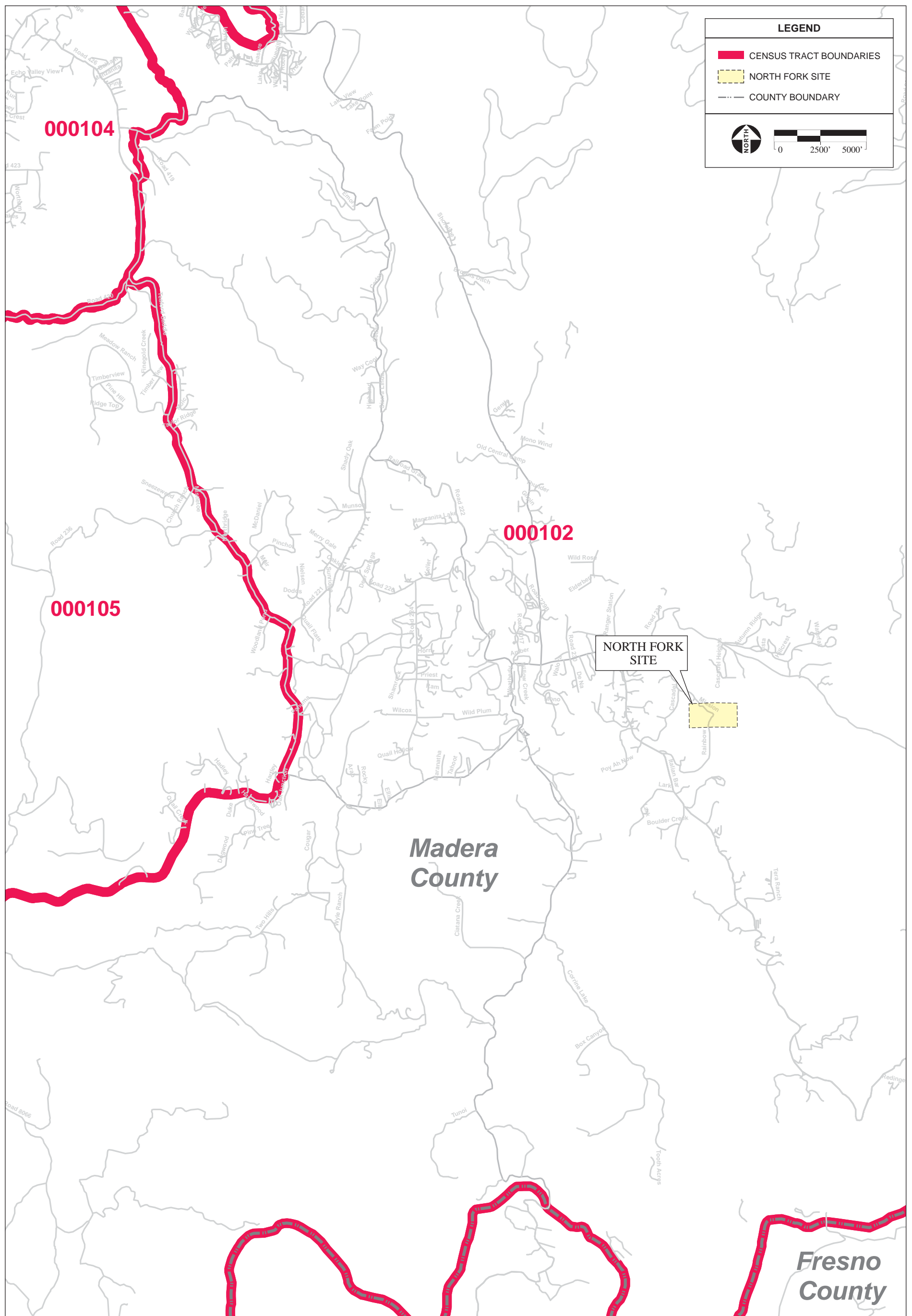
RACE

According to the 2000 Census (U.S. Census Bureau, 2005), the Madera County region has a predominately Caucasian ethnic composition. However a significant Latino population also exists in the region, with correspondingly smaller numbers of Blacks, Native Americans, Asians, and Pacific islanders. The following races are considered minorities under the executive order:

- American Indian or Alaskan Native,
- Asian or Pacific Islander,
- Black, not of Hispanic origin, and
- Hispanic.

Populations of two or more races were also considered to be a minority race for the purpose of environmental justice analysis.





Census 2000 data represent the most current racial data available by census tract. Although this data is more than four years old, the racial composition of census tracts is not expected to have changed substantially. Conservative assumptions will apply to any borderline situations where a minor change in racial composition could affect the minority status of a census tract. **Tables 3.7-6 and 3.7-7** display the population of each minority race according to census tract for the vicinity of the Madera site and North Fork sites.

As shown in **Table 3.7-6**, all census tracts in the vicinity of the Madera site are either above or just below the 50 percent minority threshold. The tract with the lowest percentage, at 49 percent, is census tract 5.03, which includes the Madera site. Given that the demographic statistics are over four years old and could have changed, resulting in an increased percentage of minorities, this tract will be considered a minority community for the purposes of environmental justice analysis. Thus, the three census tracts in the vicinity of the Madera site are all considered minority communities.

TABLE 3.7-6
MINORITY POPULATION BY CENSUS TRACT – MADERA SITE AND VICINITY

	Total population:	Total population: Hispanic or Latino	Total population: not Hispanic or Latino; population of one race; Black or African American alone	Total population: not Hispanic or Latino; population of one race; American Indian and Alaska Native alone	Total population: not Hispanic or Latino; population of one race; Asian alone	Total population: not Hispanic or Latino; population of one race; Native Hawaiian and Other Pacific Islander alone	Total population: not Hispanic or Latino; population of one race; some other race alone, other than white	Total population: not Hispanic or Latino; population of two or more races	Total population: minority	Percent minority*
Census Tract 2	11,334	3,819	2,236	214	174	34	19	501	6,997	62
Census Tract 5.03	5,215	2,022	160	24	206	2	4	123	2,541	49
Census Tract 5.06	5,485	2,959	146	52	76	2	15	112	3,362	61

NOTES: * Rounded to the nearest one percent.

SOURCE: U.S. Census Bureau, 2000; AES, 2005.

As shown in **Table 3.7-7**, the census tract that contains the North Fork site and includes areas in the vicinity of the North Fork site is well below the 50 percent minority threshold. Thus, there are no minority communities present in the vicinity of the North Fork site.

TABLE 3.7-7
MINORITY POPULATION BY CENSUS TRACT – NORTH FORK SITE AND VICINITY

Census Tract	Total population:	Total population: Hispanic or Latino	Total population: Not Hispanic or Latino; Population of one race; Black or African American alone	Total population: Not Hispanic or Latino; Population of one race; American Indian and Alaska Native alone	Total population: Not Hispanic or Latino; Population of one race; Asian alone	Total population: Not Hispanic or Latino; population of one race; Native Hawaiian and Other Pacific Islander alone	Total population: Not Hispanic or Latino; population of one race; some other race alone	Total population: Not Hispanic or Latino; population of two or more races	Total population: minority	Percent minority*
Census Tract 1.02	4,278	358	13	284	21	15	34	274	999	23

NOTES: * Rounded to the nearest one percent.

SOURCE: U.S. Census Bureau, 2000; AES, 2005.

Tribal Gaming

A number of local tribes have been able to improve the socioeconomic conditions of their members through gaming. Specifically, the current primary gaming market in the area around Madera is comprised of three large casinos: Table Mountain, the closest facility to Fresno, the Chukchansi Gold Resort and Casino in Coarsegold, a resort that opened June 25, 2003, and The Palace, located south of Fresno in Lemoore. In addition to this primary gaming market, a number of other tribal casinos compete to varying degrees with the Madera area casinos. For most of the casinos in the primary market, proximity and ease of access from Fresno are major determinants of the casino popularity and revenue potential. Most of the mature, larger properties in the market either have, or will soon have, ample attractive non-gaming amenities to attract gamblers from longer distances as well. The existing and proposed tribal casinos that make up the competitive gaming market in the Madera area are described in more detail below.

Table Mountain Casino

Table Mountain Casino is located just east of Millerton Lake, approximately 12 miles east of Route 41 in the town of Friant. The facility is easily visible from the road with parking available in a lot in front of the casino and a parking structure in the rear. The casino has been expanded numerous times over the years and is the market leader in the area because of its convenience and positive reputation. The facility houses 2,000 slot machines, 33 table games, and an 800-seat bingo parlor, which also doubles as an entertainment pavilion. The casino includes three restaurants but no bars as alcohol is not served.

Chukchansi Gold

Located in Coarsegold, Chukchansi Gold opened June 25, 2003. The new facility's design offers a large, open gaming floor that is well laid out with easy access to restaurants and the hotel. The property is situated in the foothills adjacent to Yosemite National Park and offers beautiful views.

The casino features 1,800 slot machines and 59 table games, including a 12-table poker room. The 192-room full-service hotel complements the casino by accommodating trips to nearby Yosemite National Park. The property offers six restaurants and a restaurant-bar that offers live entertainment. An 11-story, 220 room hotel expansion has recently been completed that includes a pool and spa.

Palace Casino

Forty-five minutes to the south of Fresno, near the town of Lemoore, is the Palace Gaming Center Casino. Once a truck stop, the facility now has 2,000 slot machines, 30 gaming tables, a large bingo hall, and a variety of food and beverage outlets including a steak house and large buffet. The Palace has recently completed a \$60 million expansion that includes a re-designed casino, a 250-room hotel, a 1,200-seat entertainment center, and several new food and beverage amenities.

Mono Wind Casino

The Big Sandy Rancheria tribe currently operates the Mono Wind Casino in Auberry. Although geographically close to Table Mountain (approximately 10 miles to the east), Mono Wind Casino is located in a mountainous area that is difficult to reach. The casino has 340 video game machines, 8 table games, and a 65-seat bingo parlor. There is a small restaurant and a small gift shop.

Eagle Mountain Casino

Southeast of Lemoore, approximately 100 miles from the Madera site, is the Eagle Mountain gaming facility, run by the Tule River Tribe. Located in Porterville, the 70,000 square foot casino offers 1,500 slot machines and 22 tables. Additional amenities include two restaurants, a bingo hall, and live entertainment.

Black Oak Casino

In Tuolumne, approximately 75 miles north of Madera, the Tuolumne Band of Me-Wuk Indians offers the Black Oak Casino. There are 600 slot machines and 10 gaming tables at this casino, as well as a cafe and bar. An expansion was recently completed that added 165,000 square feet to the facility.

Chicken Ranch and Bingo Casino

The Chicken Ranch Bingo is a non-compacted casino in Jamestown which offers a 900-seat bingo hall and a comparatively limited offering of slot games, totaling approximately 250.

Jackson Rancheria

North of the immediate region, and located approximately 100 miles north of Madera, Jackson Rancheria caters to gamers 18 and over and does not serve alcohol. An arcade is available for minors. The primary market for the property is the Stockton-Sacramento corridor.

Proposed Casinos

In addition to the existing competition in the market, there is one other proposed casino in the Fresno-Madera-Yosemite area market that will compete for gamers in the region, as well as several large-scale casinos, existing and proposed, well outside of the region near major metropolitan areas in Northern California. The most proximate proposed casino to Madera is to be located approximately one mile from Table Mountain. The Big Sandy Band of Western Mono Indians is planning a \$200 million casino and hotel on more than 215 acres near the intersection of Millerton Road and Auberry Road. Three other casinos have been assumed in the outlying markets: Shingle Springs, Lytton San Pablo, and Graton Rancheria in Rohnert Park.

INCOME

Section 3.7.1 discusses the median household income in census tracts in the vicinity of the Madera and North Fork sites. As shown in **Tables 3.7-4** and **3.7-5**, median household income in census tracts in the vicinity of the Madera and North Fork sites is, in all cases, well above the poverty level. Thus, no low-income communities are present in the vicinity of either site.

3.8 RESOURCE USE PATTERNS

3.8.1 TRANSPORTATION

MADERA SITE

Transportation/Circulation

Existing Circulation Network

The main transportation route through the Madera County is State Route 99 (SR-99), a north-south route connecting the Kern, Tulare, and Fresno Counties to the south with Madera, Mariposa, San Joaquin, and Sacramento Counties to the north. The Madera site is bounded on the north by Avenue 18, rural residential land, light industrial land, and vacant land; on the east by Golden State Boulevard and State Route 99 (SR-99); on the south by agricultural land and residential land; and on the west by Road 23 and agricultural land. Regional access to the Madera site is via SR-99. Road 23, Avenue 18, and Golden State Boulevard would provide direct access to the proposed casino and hotel resort. **Figures 3.8-1** and **3.8-2** show the major roadways in the vicinity of the Madera site. A traffic study was prepared for the project and is included in **Appendix M**. This section discusses the existing traffic conditions in the vicinity of the Madera site. The following is a description of the major roadways in the vicinity of the Madera site:

- Avenue 18 ½ is a two-lane county roadway with a posted speed limit of 35 miles per hour (mph).
- Avenue 18 a two-lane arterial roadway with no posted speed limit.
- Avenue 17 is a two-lane arterial roadway with a posted speed limit of 45 mph.
- Avenue 16 is a two-lane arterial roadway with a posted speed limit varying from 35 to 40 mph.
- Avenue 15½ is a two-lane arterial roadway with no posted speed limit.
- Avenue 14 is a two-lane arterial roadway with no posted speed limit.
- Avenue 12 is a two-lane arterial roadway with a posted speed limit of 35 mph.
- Road 23 is a two-lane county road with a posted speed limit of 45 mph.
- Road 26 is a four-lane county roadway with no posted speed limit.
- Golden State Boulevard/Airport Road is a two-lane arterial roadway with a posted speed limit of 35 mph.
- Golden State Boulevard is a two-lane arterial roadway with no posted speed limit.
- Schnoor Avenue is a two-lane arterial roadway with a posted speed limit of 40 mph.
- Cleveland Avenue is a four-lane roadway with a posted speed limit of 35 mph.
- Olive Avenue is an arterial varying from two to three lanes with a posted speed of 30 mph.
- Ellis Street is a two-lane arterial roadway with no posted speed limit.
- State Route 99 (SR-99) is a four-lane freeway with a posted speed limit of 65 mph.
- State Route 145 (SR-145) is a two-lane highway with a posted speed limit of 35 mph.

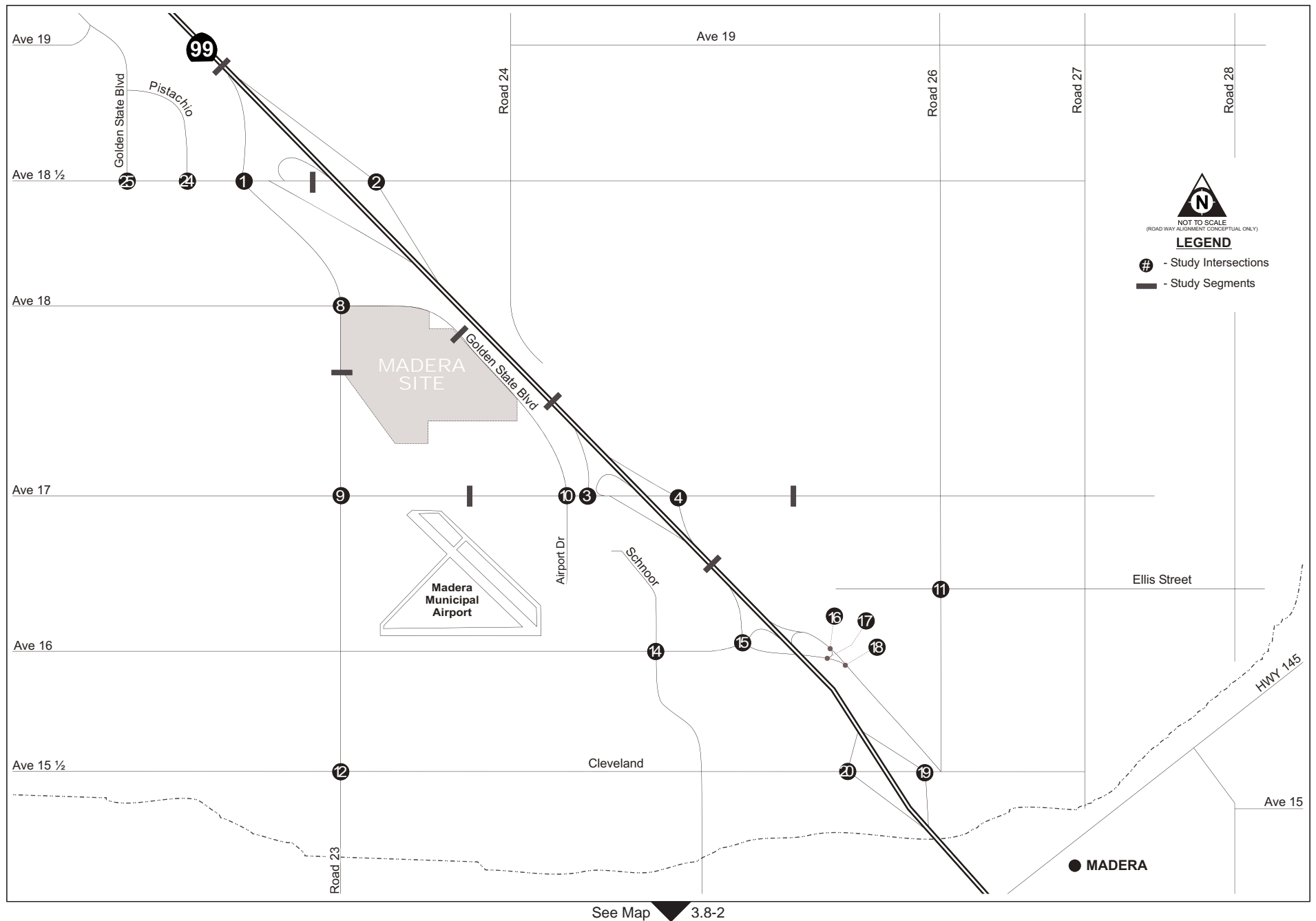


Figure 3.8-1
Madera Site – Major Roadways and Study Intersections

Transit, Bicycle and Pedestrian Facilities

Transit. Madera Dial-A-Ride service is offered in the City of Madera and its surrounding area. Dial-A-Ride is a demand-response service offered by the City of Madera with cooperative funding by Madera County. Service area is within approximately five miles of Downtown Madera. Hours of operation are 7:00 a.m. to 6:30 p.m. Monday through Friday, 9:00 a.m. to 4:00 p.m. Saturday, and 8:30 a.m. to 2:30 p.m. Sunday. Reservations are required. Fares are \$1.00 for rides beginning or ending within the City limits (Ellis to the north, Avenue 13 to the south, Road 24½ to the west and Road 29 to the east) and \$2.00 for rides beginning or ending outside of the City limits but within the area bounded by Avenue 19 to the north, Avenue 12 to the south, Road 23 to the west and Road 29½ and Road 30½ to the east.

Greyhound offers inter-community bus service several times a day with stops in both the City of Madera and Chowchilla. Buses operate seven days a week from the City of Madera's Downtown Intermodal Center.

Madera County also has one private taxi operator that provides service seven days per week, 24 hours per day.

Bicycle. There are currently no bike paths, lanes, or routes located in the study area surrounding the Madera site. According to the Madera County 2004 *Regional Bicycle Transportation Plan*, bike facilities are planned for the study area surrounding the Madera site. Construction is expected to be completed within 10 years.

Pedestrian. There are no pedestrian sidewalks, walking trails, or other areas separated from the roadways in the immediate vicinity of the Madera site.

Analysis Methodologies

Operating conditions experienced by drivers are described in terms of Level of Service (LOS). This term is a qualitative measure that includes factors such as speed, travel time, delay, freedom to maneuver, and driving comfort and convenience. Level of Service is represented as letters ranging from LOS A to LOS F, whereby LOS A represents the best traffic flow driving conditions and LOS F represents the worst traffic flow driving conditions.

Signalized and unsignalized intersections operating conditions are quantified based on average control delay per vehicle per second, while roadway segments use volume-to-capacity ratios and freeway segments use density (passenger cars/mile/lane).

Control delay includes initial acceleration delay, queue move-up time, stopped delay, and final acceleration delay. For signalized intersections, "the average control delay per vehicle is estimated for each lane group and aggregated for each approach and for the intersections as a whole" (TRB, 2000). The levels of service shown for signalized intersections are representative of the overall

level of service for that intersection. For unsignalized two-way stop controlled intersections, the level of service presented is the level of service for the worst operating movement, or minor road, at that intersection as opposed to the overall intersection level of service.

Street segment assessments for Madera County roadways were completed using the Capacity Table developed by Korve Engineering for use with the MCTC model. LOS for the segment volume-to-capacity ratios developed in this study were derived from the LOS ranges used in the model.

Table 3.8-1 relates the operational characteristics associated with each level of service category for both signalized and unsignalized intersections.

The freeway segment analysis used a free-flow speed of 70 mph. A freeway truck percentage of 24 percent was used and a recreational vehicle (RV) percentage of 2 percent was used for the freeway calculations. **Table 3.8-2** relates the operational characteristics associated with each level of service category for freeway segments.

LOS Thresholds

The California Department of Transportation (Caltrans) considers LOS C transitioning to D on State highways to be the acceptable measure, meaning worsening of roadway conditions to LOS D, E or F are unacceptable. Caltrans realizes this LOS may not always be feasible and recommends the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway is operating below the LOS threshold, the existing measures of effectiveness should be maintained.

The County and City of Madera have adopted LOS D as the acceptable LOS measure, meaning a worsening of traffic conditions to LOS E or F is unacceptable. Each table presenting LOS results at the study roadway segments and intersections under existing conditions are shown with the corresponding LOS threshold for reference.

Study Freeway and Roadway Segments and Intersections

Selection of study segments and intersections was based on the Madera County Regional Transportation model (model) and input from Madera County staff. Intersections where trip assignment would reasonably be expected to result in a capacity reduction of less than 1 percent were removed from the study, based on input from Madera County staff. Based on these parameters, the following six freeway segments and five roadway segments were analyzed:

TABLE 3.8-1
INTERSECTION LEVEL OF SERVICE DESCRIPTION

Level of Service	Conditions	Signalized Intersection Description	Signalized	Unsignalized ²
			Delay (secs/veh) ¹	Delay (secs/veh)
A	Free Flow	Users experience very low delay. Progression is favorable and most vehicles do not stop at all.	< 10.0	< 10.0
B	Stable Operations	Vehicles travel with good progression. Some vehicles stop, causing slight delay.	> 10.0 to 20.0	> 10.0 to 15.0
C	Stable Operations	Higher delays result from fair progression. A significant number of vehicles stop, although many continue to pass through the intersection without stopping.	> 20.0 to 35.0	> 15.0 to 25.0
D	Approaching Unstable	Congestion is noticeable. Progression is unfavorable, with more vehicles stopping rather than passing through the intersection.	> 35.0 to 55.0	> 25.0 to 35.0
E	Unstable Operations	Traffic volumes are at capacity. Users experience poor progression and long delays.	> 55.0 to 80.0	> 35.0 to 50.0
F	Forced Flow	Intersection's capacity is oversaturated, causing poor progression and unusually long delays.	> 80.0	> 50.0

NOTES: ¹ seconds/vehicle

² Unsignalized intersections include all-way stop and two-way stop controlled intersection.

SOURCE: TPG Consulting, Inc. 2006; AES 2006.

Freeway Segments

1. SR-99 NB – North of Avenue 18½
2. SR-99 SB – North of Avenue 18½
3. SR-99 NB – Avenue 18½ to Avenue 17
4. SR-99 SB – Avenue 18½ to Avenue 17
5. SR-99 NB – South of Avenue 17
6. SR-99 SB – South of Avenue 17

Roadway Segments

1. Avenue 18½ - Road 24 to Road 23
2. Road 23 – Avenue 18½ to Avenue 17
3. Avenue 17 – Road 23 to SR-99
4. Avenue 17 – SR-99 to Road 27
5. Golden State Boulevard – Avenue 17 to Road 23

TABLE 3.8-2
FREEWAY LEVEL OF SERVICE DESCRIPTION

Level of Service	Conditions ¹	Description	Density (pc/mi/ln) ²
A	Free Flow	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream. Effects of incidents or point breakdowns are easily absorbed at this level.	≤ 11
B	Stable Operation	Free-flow speeds are maintained. The ability to maneuver within the traffic stream is slightly restricted. Effects of minor incidents or point breakdowns are still easily absorbed at this level.	> 11 to 18
C	Stable Operation	Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver. Minor incidents may still be absorbed, but the local deterioration in service will be substantial. Queues may be expected to form behind any significant blockage.	> 18 to 26
D	Approaching Unstable	Speeds begin to decline slightly with increasing flows and density begins to increase somewhat more quickly. Freedom to maneuver within the traffic stream is more noticeably limited. Even minor incidents can be expected to create queuing, because the traffic stream has little space to absorb disruptions.	> 26 to 35
E	Unstable Operations	Traffic volumes are at capacity. Any disruption to the traffic stream can establish a disruption wave that propagates throughout the upstream traffic flow. Any incident can be expected to produce extensive queuing.	> 35 to 45
F	Forced Flow	Traffic volumes exceed the capacity of the freeway and traffic queues develop easily. Stop and go traffic conditions exist.	> 45

NOTES: ¹ free flow conditions at 65 or 70 mph

² passenger car/mile /lane

SOURCE: TRB, 2000; TPG Consulting, Inc. 2006; AES, 2006.

As discussed above, in cases where trips assigned to intersections would reasonably be expected to result in a capacity reduction of less than 1 percent, intersections were removed from further analysis. Based on these parameters and upon discussion with Caltrans, Madera County, and the Cities of Madera and Chowchilla, the following thirty intersections were analyzed:

1. Avenue 18½ at SR-99 SB ramps/Road 23
2. Avenue 18½ at SR-99 NB ramps
3. Avenue 17 at SR-99 SB ramps
4. Avenue 17 at SR-99 NB ramps
5. Avenue 12/Golden State Boulevard at SR-99 SB ramps
6. Avenue 12 at Golden State Boulevard
7. Avenue 12 at SR-99 NB ramps

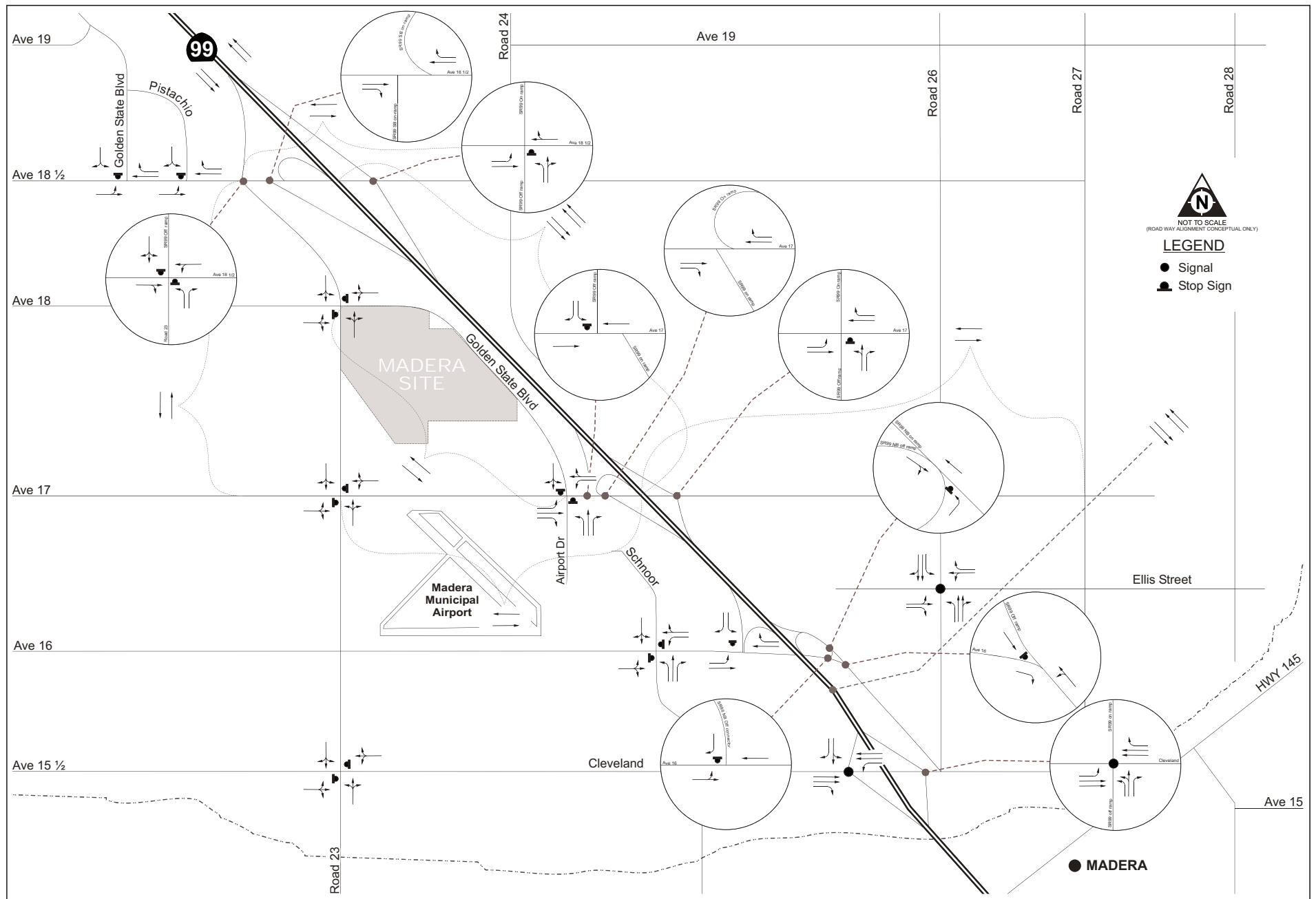
8. Avenue 18 at Road 23
9. Avenue 17 at Road 23
10. Avenue 17 at Golden State Boulevard
11. Ellis Street at Road 26
12. Avenue 15½ at Road 23
13. Avenue 14 at Road 23
14. Avenue 16 at Schnoor Avenue/Golden State Boulevard
15. Avenue 16 at SR-99 SB ramps
16. Avenue 16 at SR-99 NB ramps
17. Avenue 16/Avenue 16 connector at SR-99 NB ramps
18. Avenue 16 at SR-99 NB ramp connector
19. Gateway/Avenue 16 at SR-99 NB ramps
20. Avenue 16/Ellis Street Overcrossing at Aviation Drive
21. Avenue 16/Ellis Street at SR-99 SB ramps
22. Avenue 16/Ellis Street at SR-99 NB ramps
23. Cleveland Avenue/Avenue 15½ at SR-99 NB ramps
24. Cleveland Avenue/Avenue 15½ at SR-99 SB ramps
25. SR 145/Madera Avenue at SR-99 NB ramps
26. Olive Avenue/Avenue 14 at SR-99 SB off-ramp
27. Olive Avenue/Avenue 14/SR-99 SB on-ramp at SR 145
28. Avenue 18½ at Pistachio Drive
29. Avenue 18½ at Golden State Boulevard
30. Avenue 18½ at Golden State Boulevard/Road 23

Figures 3.8-1 and **3.8-2** present the location of the study intersections for the Madera site and **Figures 3.8-3** and **3.8-4** present the existing lane configuration and traffic controls for the Madera site study intersections.

Data Collection

Traffic volumes were collected in accordance with Caltrans *Guide for the Preparation of Traffic Impact Studies* (Caltrans, 2001). **Table 3.8-3** details when traffic data was collected at each road segment. **Table 3.8-4** provides information on dates when traffic data was collected at each study intersection.

Traffic volumes were collected during the weekday a.m. and p.m. peak periods of the day in the middle of the week. The a.m. and p.m. peak periods were determined to be between the hours of 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m. Per discussions with Madera County, City of Madera, and Caltrans staff, the above peak of the street traffic times were analyzed. These peak periods are also the standard peak periods typically used for study in the County and City of Madera.



See Map 3.8-4

Figure 3.8-3
Madera Site – Existing Lane Configuration and Intersection Control

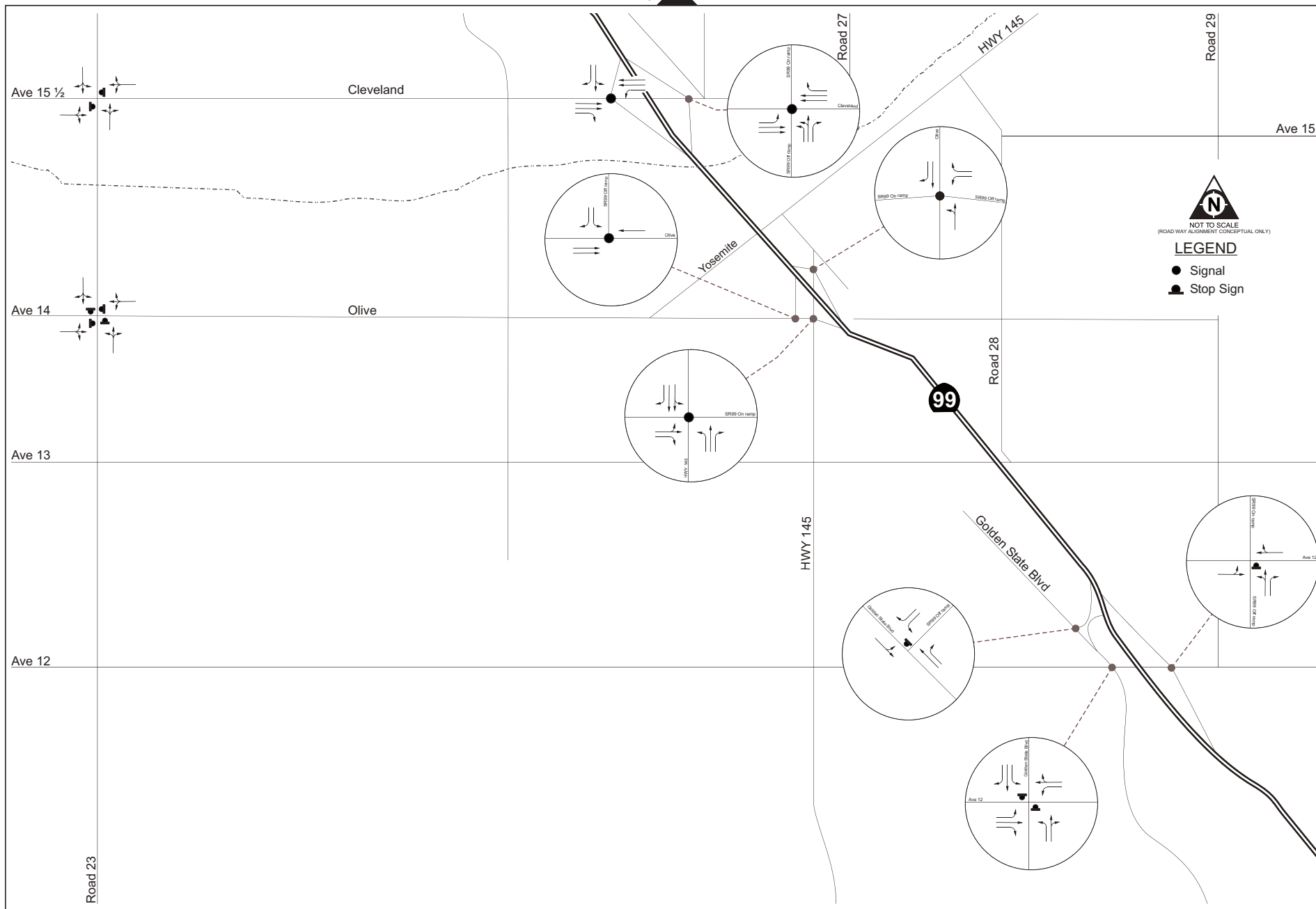


Figure 3.8-4

Madera Site – Existing Lane Configuration and Intersection Control

TABLE 3.8-3
SEGMENT DATA COLLECTION PERIOD (MADERA SITE)

Segments	Day	Date
Avenue 18½ – Road 24 to Road 23	Tuesday	6/24/08
Road 23 – Avenue 18½ to Avenue 17	Tuesday	6/24/08
Avenue 17 – Road 23 to SR-99	Tuesday	6/24/08
Avenue 17 – SR-99 to Road 27	Tuesday	6/24/08
Golden State Boulevard – Avenue 17 to Avenue 18	Tuesday	6/24/08

SOURCE: TPG Consulting, Inc. 2008; AES, 2008.

TABLE 3.8-4
INTERSECTION DATA COLLECTION PERIOD (MADERA SITE)

Intersections	AM Peak Hour		PM Peak Hour	
	Day	Date	Day	Date
Avenue 18½ at SR-99 SB ramps/Road 23	Tuesday	6/24/08	Tuesday	6/24/08
Avenue 18½ at SR-99 NB ramps	Tuesday	6/24/08	Tuesday	6/24/08
Avenue 17 at SR-99 SB ramps	Tuesday	6/24/08	Tuesday	6/24/08
Avenue 17 at SR-99 NB ramps	Tuesday	6/24/08	Tuesday	6/24/08
Avenue 12/Golden State Boulevard at SR-99 SB ramps	Tuesday	6/24/08	Tuesday	6/24/08
Avenue 12 at Golden State Boulevard / Road 29	Tuesday	6/24/08	Tuesday	6/24/08
Avenue 12 at SR-99 NB Ramps	Tuesday	6/24/08	Tuesday	6/24/08
Avenue 18 at Road 23	Tuesday	6/24/08	Tuesday	6/24/08
Avenue 17 at Road 23	Tuesday	6/24/08	Tuesday	6/24/08
Avenue 17 at Golden State Boulevard / Airport Road	Tuesday	6/24/08	Tuesday	6/24/08
Ellis Street at Road 26	Thursday	6/26/08	Thursday	6/26/08
Avenue 15½ at Road 23	Tuesday	6/24/08	Tuesday	6/24/08
Avenue 14 at Road 23	Tuesday	6/24/08	Tuesday	6/24/08
Avenue 16 at Schnoor Avenue/Golden State Boulevard	Tuesday	6/24/08	Tuesday	6/24/08
Avenue 16/Avenue 16 connector at SR-99 NB ramps	Wednesday	6/25/08	Wednesday	6/25/08
Avenue 16 at SR-99 NB ramps	Wednesday	6/25/08	Wednesday	6/25/08
Gateway/Avenue 16 at SR-99 NB ramps	Wednesday	6/25/08	Wednesday	6/25/08

Avenue 16 at SR-99 SB Ramps	Wednesday	6/25/08	Wednesday	6/25/08
SR-99 NB Ramps at Cleveland Avenue/Avenue 15½	Wednesday	6/25/08	Wednesday	6/25/08
SR-99 SB Ramps at Cleveland Avenue/Avenue 15½	Tuesday	6/24/08	Tuesday	6/24/08
SR-99 NB Ramps at SR145/Madera Avenue	Wednesday	6/25/08	Wednesday	6/25/08
Olive Avenue/Avenue 14 at SR-99 SB off-ramp	Wednesday	6/25/08	Wednesday	6/25/08
SR-99 SB On-Ramp/Olive Avenue/Avenue 14 at SR-145	Wednesday	7/9/08	Wednesday	7/9/08
Avenue 18½ at Pistachio Drive	Tuesday	6/24/08	Tuesday	6/24/08
Avenue 18½ at Golden State Boulevard	Tuesday	6/24/08	Tuesday	6/24/08

SOURCE: TPG Consulting, Inc. 2006; AES, 2006.

Madera County Traffic Model

The Madera County Transportation Commission (MCTC) is responsible for developing and maintaining a microcomputer-based traffic simulation model that represents Madera County. The current model was developed to analyze proposed land uses, circulation systems, and air quality and covers the entire Madera County area, as well as portions of Fresno, Merced, and Stanislaus Counties. Residential dwelling unit and employment adjustments were made to the 2025 Without-Project model land use data to incorporate twenty-one approved or proposed General Plan Amendments (GPAs) that were located in the County and City of Madera. **Section 4.8** provides additional details on the GPAs.

Intersection heavy vehicle percentages were developed from the existing conditions count data. A minimum default of 2 percent heavy vehicles was used on all intersections and in all scenarios. All signalized intersections within a one-half mile distance were analyzed as actuated coordinated. Actuated signals use vehicle detectors and an actuated controller unit to assign the right of way based on changing traffic demand. Coordination between the signals can either be based on pre-timed coordination or hardwire coordination. The signalized intersections were optimized to achieve the greatest reduction in overall intersection delay.

Left turns at signalized intersections were analyzed as “protected” in the study area. Protected lefts are left turns that are only allowed to go during their “protected” phase of the signal, and the left turns are not allowed to go at the same time as the opposing direction through and right-turn movements.

If an unsignalized intersection was projected to operate below the adopted level of service threshold or have movements or approaches that were projected to operate below the adopted level of service threshold, the existing lane configurations were tested to determine if the intersection could be mitigated.

Existing Freeway and Roadway Segment Performance

This condition is based on current traffic counts, existing roadway geometry, and existing development conditions. This condition serves as a baseline from which projections for the 2010 and 2030 years are derived it is reported without the project added into the condition.

Table 3.8-5 summarizes the results of this weekday freeway and roadway segment analysis for the existing level of service conditions. As shown in **Table 3.8-5** below, based on existing traffic volumes, the following freeway and roadway segments currently operate at an unacceptable LOS:

- SR-99 – North of Avenue 18½
- SR-99 SB – Avenue 18½ to Avenue 17
- SR-99 SB – South of Avenue 17
- Avenue 17 – SR-99 to Road 27

TABLE 3.8-5
EXISTING FREEWAY AND ROADWAY SEGMENT PERFORMANCE - MADERA SITE

Segment	LOS Threshold	Existing			
		LOS		Density (pc/mi/ln) ¹	
		AM	PM	AM	PM
Freeway Segment					
SR-99 NB – North of Avenue 18 ½	C	C	C	22.6	22.1
SR-99 SB – North of Avenue 18 ½	C	C	C	18.4	28.1
SR-99 NB – Avenue 18 ½ to Avenue 17	C	C	D	23.6	23.0
SR-99 SB – Avenue 18 ½ to Avenue 17	C	C	D	19.1	29.7
SR-99 NB – South of Avenue 17	C	C	C	21.5	24.5
SR-99 SB – South of Avenue 17	C	C	D	20.2	32.4
Roadway Segment					
Avenue 18½ – Road 24 to Road 23	D	A	A	NA	NA
Road 23 – Avenue 18½ to Avenue 17	D	A	A	NA	NA
Avenue 17 – Road 23 to SR-99	D	A	A	NA	NA
Avenue 17 – SR-99 to Road 27	D	A	A	NA	NA
Golden State Boulevard – Avenue 17 to Road 23	D	A	A	NA	NA

NOTES: **Bold** text denotes unacceptable LOS.

NA = not applicable

¹ density = passenger car per mile per lane

SOURCE: TPG Consulting, Inc. 2008; AES 2008.

Existing Intersection Performance

Table 3.8-6 summarizes the results of this weekday intersection analysis for the existing level of service conditions and shows the intersection delay experienced per vehicle. As shown below, based on existing level of service, the following intersections currently operate at an unacceptable LOS:

- Avenue 12 at Golden State Boulevard
- Avenue 12 at SR-99 NB ramps/NB Approach

Figures 3.8-5 and **3.8-6** present the existing intersection volumes at each of the Madera site study intersections.

TABLE 3.8-6
EXISTING INTERSECTION PERFORMANCE - MADERA SITE

Intersection	LOS Thres- hold	Existing			
		LOS	AM Delay (secs) ¹	LOS	PM Delay (secs)
Avenue 18½ at SR-99 SB ramps/Road 23					
• WB Left-Through	C	A	0.6	A	1.2
• NB Approach		B	13.9	C	17.2
• SB Approach		B	13.5	C	17.2
Avenue 18½ at SR-99 NB ramps					
• EB Left	C	A	8.2	A	7.9
• NB Approach		C	16.3	B	14.8
Avenue 17 at SR-99 SB ramps					
• SB Approach	C	B	10.2	B	11.1
Avenue 17 at SR-99 NB ramps					
• EB Left	C	A	9.0	A	8.0
• NB Approach		B	11.9	B	13.3
Avenue 12/Golden State Boulevard at SR-99 SB ramps					
• SB Left-Though	C	A	4.6	A	3.4
• WB Approach		C	15.3	C	16.8
Avenue 12 at Golden State Boulevard					
	D	D	51.0	F	90.1
Avenue 12 at SR-99 NB ramps					
• EB Left-Though	C	A	2.3	A	4.1
• NB Approach		F	119.1	F	182.2
Avenue 18 at Road 23					
• NB Left-Through-Right	D	A	0.1	A	0.5
• SB Left-Through-Right		A	0.4	A	0.6
• WB Approach		B	9.4	A	9.8
• EB Approach		A	9.9	B	10.1
Avenue 17 at Road 23					
	D				

• NB Left-Through-Right		A	0.1	A	0.4
• SB Left-Through-Right		A	1.1	A	0.7
• WB Approach		B	10.5	B	10.6
• EB Approach		B	10.3	B	10.4
Avenue 17 at Golden State Boulevard					
• EB Left		A	0.0	A	0.0
• WB Left	D	A	7.6	A	7.5
• NB Approach		A	9.7	A	9.3
• SB Approach		B	12.2	B	11.9
Ellis Street at Road 26	D	A	4.8	A	5.5
Avenue 15½ at Road 23					
• NB Left-Through-Right		A	0.0	A	0.0
• SB Left-Through-Right	D	A	1.0	A	1.7
• WB Approach		B	10.1	B	10.7
• EB Approach		A	0.0	C	10.2
Avenue 14 at Road 23	D	A	8.4	C	8.4
Avenue 16 at Schnoor Avenue/Golden State	D	A	8.4	B	10.9
Avenue 16 at SR-99 SB ramps					
• EB Left	C	A	7.7	A	7.9
• SB Approach		B	11.0	B	13.0
Avenue 16/Avenue 16 connector at SR-99 NB ramps					
• EB Left	C	A	9.7	B	10.6
Avenue 16 at SR-99 NB ramp connector					
• SB Left-Through	C	A	4.7	A	4.8
• WB Right		A	9.0	A	9.6
Gateway/Avenue 16 at SR-99 NB Ramps					
• SB Approach	C	B	10.3	B	11.0
Cleveland Avenue/Avenue 15½ at SR-99 NB ramps	C	B	12.1	B	15.1
Cleveland Avenue/Avenue 15½ at SR-99 SB ramps	C	B	14.2	B	12.2
SR-145/Madera Avenue at SR-99 NB ramps	C	A	9.1	B	13.1
Olive Avenue/Avenue 14 at SR-99 SB off-ramp	C	B	10.6	B	11.0
Olive Avenue/Avenue 14/SR-99 SB on-ramp at SR-145	C	C	22.1	C	31.2
Avenue 18½ at Pistachio Drive					
• EB Approach		A	0.0	A	0.4
• SB Approach	D	B	12.7	B	13.8
Avenue 18½ at Golden State Boulevard					
• EB Left-Through		A	0.4	A	0.1
• SB Approach	D	B	10.9	B	10.9

NOTES: **Bold** text denotes unacceptable LOS

NB = northbound, SB = southbound

¹ delay in seconds per vehicle

SOURCE: TPG Consulting, Inc. 2006; AES 2006.

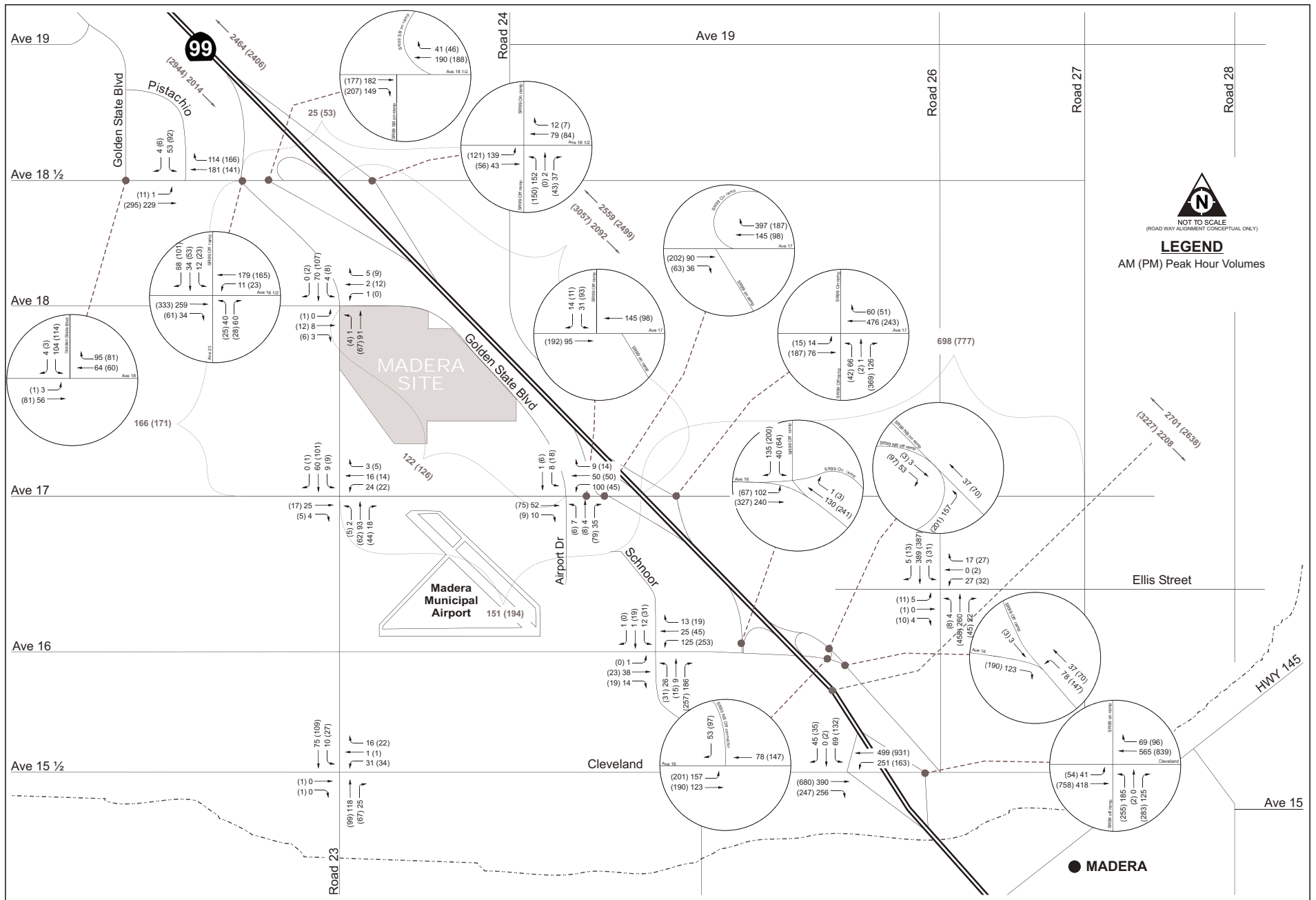


Figure 3.8-5
Madera Site – Existing Intersection Volumes

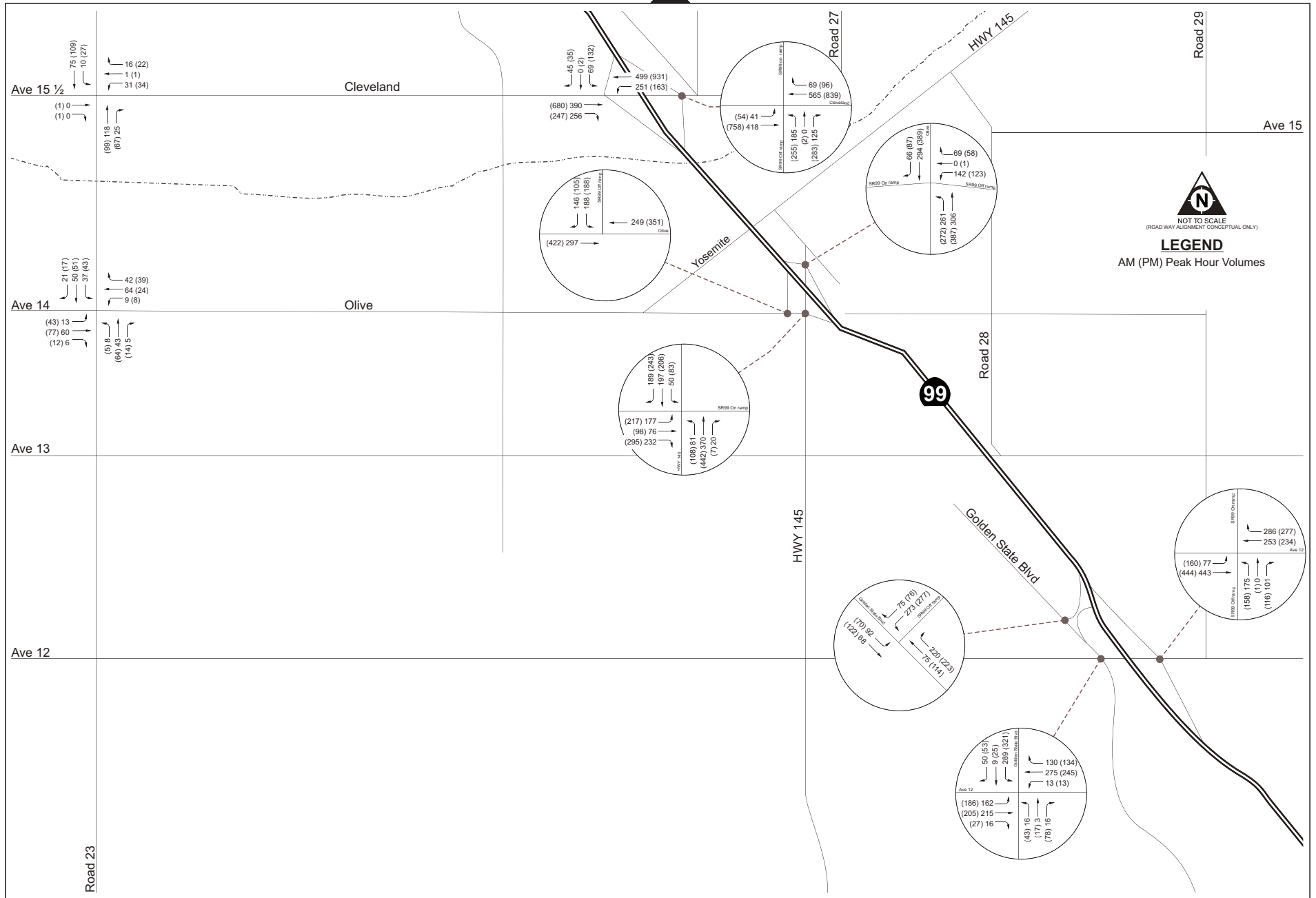


Figure 3.8-6
Madera Site – Existing Intersection Volumes

NORTH FORK SITE***Transportation/Circulation******Existing Circulation Network***

Streets and highways in the North Fork site vicinity include Mission Drive (Federal Road 209), Road 225 (Mammoth Pool Road), Rainbow Drive, Cascadel Road, Road 222 (Auberry Road), North Fork Road (Road 200), and Road 274 (Malum Ridge Road). The North Fork site bounded by Mammoth Pool Road on the west, Mission Drive on the north and Rainbow Drive to the south.

Figure 3.8-7 shows major roadways in the vicinity of the North Fork site. The following is a description of the major roadways in the vicinity of the North Fork site:

- State Route 49 (SR-49) is a two-lane highway with a posted speed limit of 35 mph.
- Road 200 is a two-lane county roadway with a posted speed limit of 55 mph.
- Road 420 (Thornberry Road) is a two-lane county roadway with no posted speed limit.
- State Route 41 (SR-41) in the North Fork site vicinity varies from two to four lanes with a posted speed limit varying from 45 to 55 mph.
- State Route 145 (SR-145) in the North Fork site vicinity is a two-lane highway varying to a county road with a posted speed limit of 55 mph.
- Road 274 (Malum Ridge Road) is a two-lane county roadway with a posted speed limit of 55 mph.
- Road 225 (Mammoth Pool Road) is a two-lane county roadway with a posted speed limit of 35 mph.
- Cascadel Road is a two-lane county roadway with a posted speed limit of 35 mph.
- Mission Drive is a two-lane county roadway with no posted speed limit.
- North Fork Road is a two-lane county roadway with a posted speed limit of 55 mph.
- Auberry Road is a two-lane county roadway with no posted speed limit.
- Crane Valley Road is a two-lane roadway with a posted speed limit of 55 mph.

Transit, Bicycle and Pedestrian Facilities

Transit. Madera County has one private taxi operator that provides service seven days per week, 24 hours per day.

Bicycle. There are currently no bike paths, lanes, or routes located in the study area surrounding the North Fork site.

Pedestrian. There are no pedestrian sidewalks, walking trails, or other areas separated from the roadways in the immediate vicinity of the North Fork site.

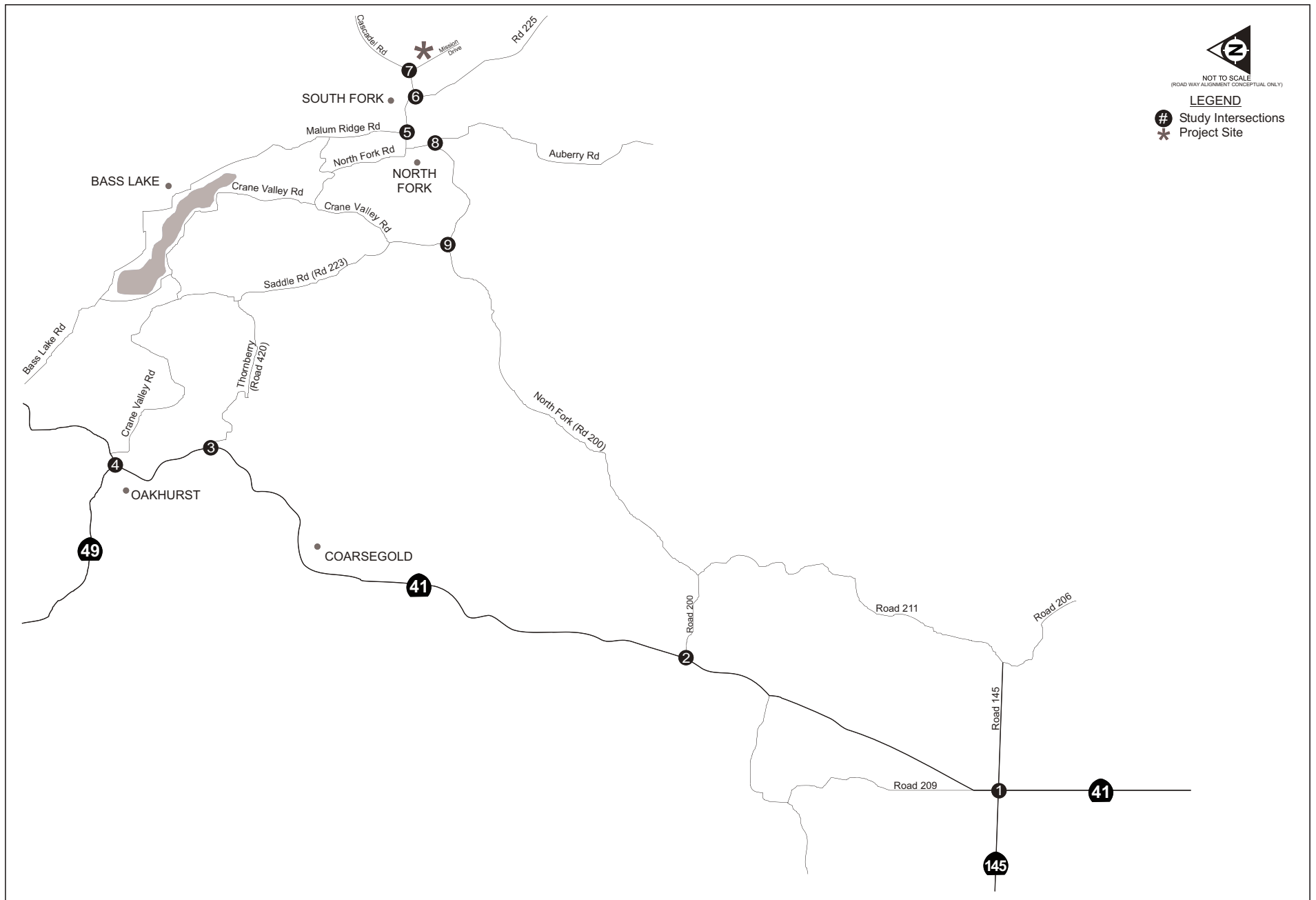


Figure 3.8-7
North Fork Site – Major Roadways and Study Intersections

Analysis Methodologies

The analysis methodologies used are the same as for the Madera site.

LOS Thresholds

The LOS thresholds are the same as for the Madera site.

Study Intersections

The proposed project will generate new vehicular trips that will increase traffic volumes on the nearby street network. To assess changes in traffic conditions associated with the project, the following intersections were evaluated:

1. SR-145 at SR-41
2. SR-41 at Road 200
3. SR-41 at Thornberry Road
4. SR-41 at SR-49
5. Malum Ridge Road at Road 225 (Mammoth Pool Road)
6. Road 225 (Mammoth Pool Road) at Cascadel Road
7. Cascadel Road at Mission Drive (Federal Road 209) – Site Access
8. North Fork Road at Auberry Road
9. North Fork Road at Crane Valley Road

Figure 3.8-8 presents the existing lane geometry and traffic control for these study intersections.

Data Collection

Traffic volumes were collected in accordance with Caltrans *Guide for the Preparation of Traffic Impact Studies* (Caltrans, 2001). **Table 3.8-7** details when traffic data was collected at each study intersection.

TABLE 3.8-7
INTERSECTION DATA COLLECTION PERIOD – NORTH FORK SITE

Intersections	AM Peak Hour		PM Peak Hour	
	Day	Date	Day	Date
SR-41 at SR-145	Wednesday	7/9/08	Wednesday	7/9/08
SR-41 at Road 200	Wednesday	7/9/08	Wednesday	7/9/08
SR-41 at Thornberry Road	Tuesday	7/8/08	Tuesday	7/8/08
SR-41 at SR-49	Tuesday	7/8/08	Tuesday	7/8/08
Road 274 (Malum Ridge Road) at Road 225 (Mammoth Pool Road)	Tuesday	7/8/08	Tuesday	7/8/08
Road 225 (Mammoth Pool Road) at Cascadel Road	Tuesday	7/8/08	Tuesday	7/8/08
North Fork Road at Auberry Road	Tuesday	7/8/08	Tuesday	7/8/08
North Fork Road at Crane Valley Road	Tuesday	7/8/08	Tuesday	7/8/08
Cascadel Road at Mission Drive (Federal Road 209)	Tuesday	7/8/08	Tuesday	7/8/08

SOURCE: TPG Consulting, Inc., 2008; AES, 2008.

Peak Hour Intersection Performance

Table 3.8-8 summarizes the results of this intersection analysis for the existing level of service conditions and shows the intersection delay experienced per vehicle. As shown below, based on existing level of service, none of the intersections currently operate at an unacceptable LOS.

Figure 3.8-9 presents the existing intersection volumes for each of the North Fork site study intersections.

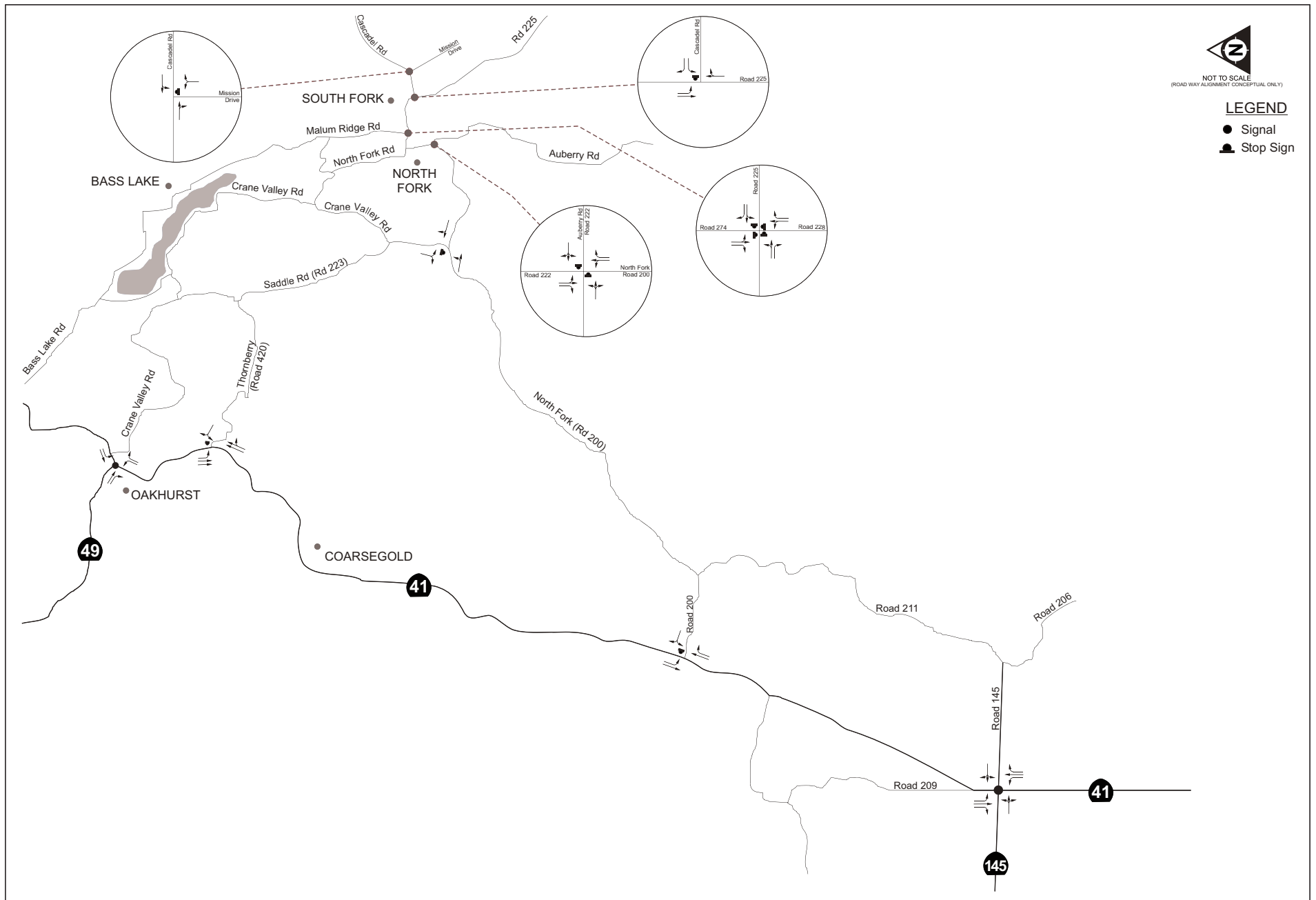


Figure 3.8-8
North Fork Site – Existing Lane Configuration and Intersection Control

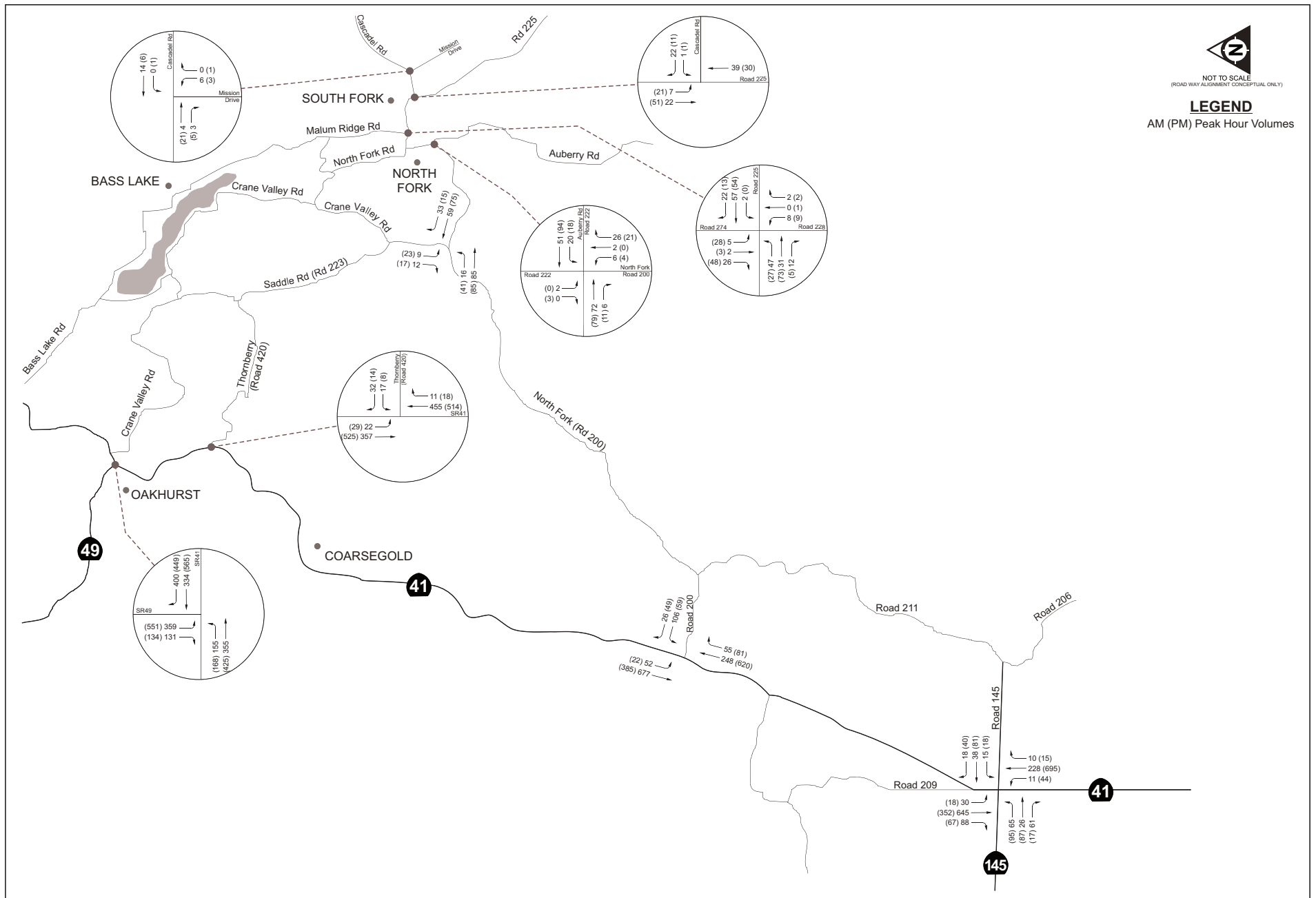
TABLE 3.8-8
EXISTING INTERSECTION PERFORMANCE – NORTH FORK SITE

Intersection	LOS Threshold	Existing			
		AM		PM	
		LOS	Delay (secs) ¹	LOS	Delay (secs)
SR-145 at SR-41	C	B	14.0	C	21.6
SR-41 at Road 200	C	A	8.1	A	5.7
SR-41 at Road 420 (Thornberry Road)					
• SB Left	C	A	8.7	A	8.9
• WB Approach		B	12.9	B	14.3
SR-41 at SR-49	C	A	9.9	B	11.9
Malum Ridge Road at Road 225 (Mammoth Pool Road)	D	A	7.0	A	7.3
Road 225 (Mammoth Pool Road) at Cascadel Road					
• SB Left	D	A	7.4	A	7.3
• WB Approach		A	8.6	A	8.6
Cascadel Road at Mission Drive (Federal Road 209)					
• SB Left-Through	D	NA	NA	A	1.1
• WB Approach		A	8.6	A	8.6
North Fork Road at Auberry Road					
• EB Left-Through		NA	NA	NA	NA
• WB Left	D	A	7.4	A	7.4
• NB Approach		A	9.1	A	9.1
• SB Approach		B	10.1	A	8.8
North Fork Road at Crane Valley Road					
• EB Left-Through	D	A	1.3	A	2.6
• SB Approach		A	9.3	A	9.9

NOTES: **Bold** text denotes unacceptable LOS.

¹ delay in seconds per vehicle

SOURCE: TPG Consulting 2008; AES 2008.



SOURCE: TPG Consulting, Inc., 2008; AES, 2008

North Fork Casino EIS / 204502 ■

Figure 3.8-9
North Fork Site – Existing Intersection Volumes

3.8.2 LAND USE

REGIONAL SETTING

Madera County encompasses 1,374,160 acres (2,147 square miles) and is located in the approximate center of California. The County consists of the region from the San Joaquin Valley to the Sierra Nevada Mountain Range. The Chowchilla River forms the northern boundary of Madera County and the San Joaquin River is located on the southern boundary. The County includes some of the most productive agricultural land in the nation. The cities of Chowchilla and Madera are located within the County along with the unincorporated communities of Ahwahnee, Bass Lake, Berenda, Coarsegold, Fairmead, Madera Ranchos, North Fork, Oakhurst, O'Neals, Raymond, and Rolling Hills (Madera, 2004). The main transportation route through the county is SR-99, a north-south route connecting the Bakersfield area to the south and the Sacramento area to the north.

Landscape characteristics, administrative boundaries, and infrastructure have affected how rural land use has developed within Madera County. Madera County commonly develops in blocks of rural subdivisions in one to five square mile units. Rural subdivisions are most common to the north and east of existing cities at the base of the foothills. Irregular configurations of low-density residential development occur at higher elevations along Highways 41 and 168 toward the Sierra Mountains (DLRP, 2005).

MADERA COUNTY GENERAL PLAN

The purpose of the Madera County General Plan is to create a comprehensive, long-term planning guideline for development throughout the County. The Madera County General Plan, published in October 1995, consists of two separate but interrelated documents: the Background Report and the Policy Document. The Background Report inventories and analyzes existing conditions and trends in Madera County. The General Plan Policy Document constitutes Madera County's formal policies for land use, development, and environmental quality. It includes: goals, policies, and standards; implementation programs; and the Land Use Diagram and the Circulation Plan Diagram. County-stated goals are the underlying motivation for development; these goals are general in nature and immeasurable. A County policy is a specific statement, in text or diagram, intended to guide action and implies a clear commitment.

Policies and Goals

The general plan sets policies and standards for the maintenance and improvement of existing development and for determining the location and characteristics of future development. **Table 3.8-9** shows General Plan goals and policies that are currently applicable to the Madera site and the North Fork site, and are relevant to development proposed by project alternatives (**Section 4.8**).

TABLE 3.8-9
MADERA COUNTY GENERAL PLAN APPLICABLE GOALS AND POLICIES

Goals and Policies

Commercial Land Uses**Goal**

Goal 1.D To designate adequate commercial land for and promote development of commercial uses to meet the present and future needs of Madera County residents and visitors and maintain economic vitality.

Section Policy

1.D.4 To designate adequate commercial land for and promote development of commercial uses to meet the present and future needs of Madera County residents and visitors and maintain economic vitality.

Jobs-Housing Balance**Goal**

Goal 1.F To work toward a jobs-housing balance in existing urban areas and new growth areas.

Section Policy

1.F.2 Designate and encourage the development of employment-generating uses in appropriate areas near existing and designated residential development.

Visual and Scenic Resources**Goal**

Goal 1.H To protect the visual and scenic resources of Madera County as important quality-of-life amenities and asset in the promotion of recreation and tourism.

Section Policy

1.H.1 Require that new development in scenic rural areas avoid locating structures along ridgelines, on steep slopes, or in other highly-visible locations, except when the location is necessary to avoid hazards or when the screening measures to minimize the visibility of structures and graded areas are incorporated into the project.

1.H.2 Require new development incorporates sound soil conservation practices and minimizes land alterations.

Streets and Highways**Goal**

Goal 2.A To provide for the long-range planning and development of the County's roadway system, ensure the safe and efficient movement of people and goods, and provide sufficient access to existing and new development.

Section Policy

2.A.9 To identify the potential impacts of new development on traffic service levels, the County shall require the preparation of traffic impact analyses for developments determined to be large enough to have potentially significant traffic impacts. The County may allow exceptions to the level of service standards where it finds that the improvements or other measures required to achieve the LOS standards are unacceptable.

2.A.17 Require proposed new development projects to analyze their contribution to increased traffic and to implement improvements necessary to address the increase.

2.A.19 Assess fees on new development sufficient to cover the fair share portion of that development's impacts on the local and regional transportation system. Exceptions may be made when new development generates significant public benefits and when alternative sources of funding can be identified to offset foregone revenues.

Goals and Policies

- 2.A.21 Require that new nonresidential development provide for off-street parking, either on-site or through contributions to consolidated lots or structures, particularly where these facilities are located in or near residential areas.

Transit**Goal**

- Goal 2.B To promote a safe and efficient mass transit system, including both rail and bus, to reduce congestion, improve the environment, and provide viable non-automotive means of transportation in and through Madera County

Section Policy

- 2.B.7 Require new development to provide sheltered public transit stops, with turnouts. The County will also consider development of turnouts in existing developed areas when roadway improvements are made or as deemed necessary for traffic flow and public safety.

Transportation Control Measures (TCM)**Goal**

- Goal 2.C To maximize the efficient use of transportation facilities so as to: 1) reduce travel demand on the County's roadway system; 2) reduce the amount of investment required in new or expanded facilities; 3) reduce the quantity of emissions of pollutants from automobiles; and 4) increase the energy efficiency of the transportation system.

Section Policy

- 2.C.4 Encourage major traffic generators to develop and implement trip reduction measures.
- 2.C.5 Require major development projects to prepare transportation studies that address potential use of bicycle routes and facilities and the use of public transportation.

Non-motorized Transportation**Goal**

- Goal 2.D To provide a safe, comprehensive, and integrated system of facilities for non-motorized transportation to meet the needs of commuters and recreational users.

Section Policy

- 2.D.7 Require developers to finance and install pedestrian walkways, equestrian trails, and multi-purposed paths in new development, as appropriate.

General Public Facilities and Services**Goal**

- Goal 3.A To ensure the timely development of public facilities and to maintain an adequate level of service to meet the needs of existing and future development.

Section Policy

- 3.A.1 Ensure through the development review process that adequate public facilities and services are available to serve new development. The County shall not approve new development where existing facilities are inadequate unless the applicant can demonstrate that all necessary public facilities will be installed or adequately financed and maintained (through fees or other means).

Public Facilities and Services Funding**Goal**

- Goal 3.B To ensure that adopted facility and service standards are achieved and maintained through the use of equitable funding methods.

Section Policy

- 3.B.1 Require that new development pay its fair share of the cost of developing new facilities and services and upgrading existing public facilities and services subject to the requirements of California Government Code Section 66000, et seq. (AB1600); exceptions may be made when

Goals and Policies

new development generates significant public benefits (e.g., low income housing) and when alternative sources of funding can be identified to offset foregone revenues.

Water Supply and Delivery

Goal

Goal 3.C To ensure the availability of an adequate and safe water supply and the maintenance of high quality water in water bodies and aquifers used as sources of domestic and agricultural water supply.

Section Policy

- 3.C.1 Approve new development only if an adequate water supply to serve such development is demonstrated.
- 3.C.2 Approve new development based on the following guidelines for water supply:
- a. Urban and suburban development should rely on community water systems.
 - b. Rural communities should rely on community water systems. Individual wells may be permitted in cases where no community water system exists or can be extended to the property but development will be limited to densities which can be safely developed with wells.
 - c. Agricultural areas should rely on public water systems where available, otherwise individual water wells are acceptable.
- 3.C.3 Limit development in areas identified as having severe water table depression to uses that do not have high water usage or to uses served by a surface water supply.
- 3.C.4 Require that water supplies serving new development meet state water quality standards.
- 3.C.5 Require that new development adjacent to bodies of water used as domestic water sources adequately mitigate potential water quality impacts on these water bodies.
- 3.C.6 Promote efficient water use and reduced water demand by:
- a. Requiring water-conserving design and equipment in new construction.
 - b. Encouraging water-conserving landscaping and other conservation measures;
 - c. Encouraging retrofitting existing development with water-conserving devices; and
 - d. Encouraging use of recycled or gray water for landscaping.
- 3.C.7 Promote the use of reclaimed wastewater to offset the demand for new water supplies.

Wastewater Collection, Treatment and Disposal

Goal

Goal 3.D To ensure adequate wastewater collection and treatment and the safe disposal of liquid and solid waste.

Section Policy

- 3.D.2 Promote efficient water use and reduced wastewater system demand by:
- a. Requiring water-conserving design and equipment in new construction;
 - b. Encouraging retrofitting with water-conserving devices; and
 - c. Designing wastewater systems to minimize inflow and infiltration, to the extent economically feasible.
- 3.D.3 Permit on-site sewage treatment and disposal on parcels where all current regulations can be met; where parcels have the area, soils, and other characteristics that permit such disposal facilities without threatening surface or groundwater quality or posing any other health hazards; and where community sewer service is not available and cannot be provided.

Goals and Policies

- 3.D.4 Require that the development, operation, and maintenance of on-site disposal systems complies with the requirements and standards of the County Department of Environmental Health.

Storm Drainage and Flood Control

Goal

- Goal 3.E To provide efficient, cost-effective, and environmentally sound storm drainage and flood control facilities.

Section Policy

- 3.E.2 Require new development to provide protection from the 100-year flood as a minimum.
- 3.E.4 Require new development to pay its fair share of the costs of Madera County storm drainage and flood control improvements.
- 3.E.5 Encourage project designs that minimize drainage concentrations and impervious coverage and maintain, to the extent feasible, natural site drainage conditions.
- 3.E.6 Future drainage system discharges shall comply with applicable state and federal pollutant discharge requirements.
- 3.E.7 Encourage the use of natural stormwater drainage systems to preserve and enhance natural features.

Landfills, Transfer Stations, and Solid Waste Recycling

Goal

- Goal 3.F To ensure the safe and efficient disposal or recycling of solid waste generated in Madera County.

Section Policy

- 3.F.2 Promote maximum use of solid waste source reduction, recycling, composting, and environmentally safe transformation of wastes.
- 3.F.6 Require that all new development comply with applicable provisions of the Madera County Integrated Waste Management Plan.

Law Enforcement, Fire, and Emergency Medical Services

Goal

- Goal 3.G To ensure the prompt and efficient provision of law enforcement, fire, and emergency medical facility and service needs.

Section Policy

- 3.G.3 Require new development to pay its fair share of the costs for providing law enforcement, fire, and emergency medical facilities, subject to the requirements of California Government Code Section 66000 et seq. (AB1600).
- 3.G.4 Require that new development be designed to maximize safety and security and minimize fire hazard risks to life and property.

Fire Protection Services

Goal

- Goal 3.H To protect residents of and visitors to Madera County from injury and loss of life and to protect property and watershed resources from fires.

Section Policy

- 3.H.4 Require new development to develop or fund fire protection facilities that, at a minimum, maintain the (above) service level standards (see Policy 3.H.1 or 3.H.2 in the Madera County General Plan Policy Document or **Section 3.8** of this document for service level standards).

Goals and Policies

- 3.H.5 Ensure that all proposed developments are reviewed for compliance with fire safety standards by responsible local fire agencies per the Uniform Fire Code and other state and local ordinances.

Utilities

Goal

Section Policy

- 3.J.3 Require proposed new development in identified underground conversion districts and along scenic corridors to construct underground utility lines on and adjacent to the site of proposed development or, when this is infeasible, to contribute funding for future undergrounding.

Agriculture and Natural Resources

Goal

- Goal 5A To designate adequate agricultural land and promote development of agricultural uses to support the continued viability of Madera County's agricultural economy.

Section Policy

- 5.A.1 Maintain agriculturally designated areas for agricultural uses and direct urban uses to designated new growth areas, existing communities, and/or cities.
- 5.A.2 Discourage the conversion of prime agricultural land to urban uses unless an immediate and clear need can be demonstrated that indicates a lack of land for non-agricultural uses.
- 5.A.3 Ensure that new development and public works projects do not encourage further expansion of urban uses into designated agricultural areas.
- 5.A.5 Allow the conversion of existing agricultural land to urban uses only within designated urban and rural residential areas, new growth areas, and city spheres of influence where designated for urban development on the General Plan Land Uses Diagram.
- 5.A.6 Encourage continued and, where possible, increased agricultural activities on lands designated for agricultural uses.
- 5.A.13 Require development within or adjacent to designated agricultural areas to incorporate design, construction, and maintenance techniques that protect agriculture and minimize conflicts with adjacent agricultural uses.

Water Resources

Goal

- Goal 5.C To protect and enhance the natural qualities of Madera County's streams, creeks and groundwater.

Section Policy

- 5.C.2 Minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of roads and bridges, and use of off-road vehicles. The County shall discourage grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of creeks and damage to riparian habitat.
- 5.C.3 Require new development of facilities near rivers, creeks, reservoirs, or substantial aquifer recharge areas to mitigate any potential impacts of release of pollutants in floodwaters or flowing river, stream, creek, or reservoir waters.
- 5.C.4 Require the use of feasible and best management practices (BMPs) to protect streams from the adverse effects of construction activities, and shall encourage the urban storm drainage systems and agricultural activities to use BMPs.

Goals and Policies

- 5.C.5 Approve only wastewater disposal facilities that will not contaminate groundwater or surface water.
- 5.C.7 Protect groundwater resources from contamination and further overdraft by encouraging water conservation efforts and supporting the use of surface water for urban and agricultural uses wherever feasible.

Wetland and Riparian Areas**Goal**

- Goal 5.D To protect wetland communities and related riparian areas throughout Madera County as valuable resources.

Section Policy

- 5.D.1 Comply with the wetlands policies of the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game. Coordination with these agencies at all levels of project review shall continue to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed.
- 5.D.2 Require new development to mitigate wetland loss in both regulated and non-regulated wetlands through any combination of avoidance, minimization, or compensation. The County shall support mitigation banking programs that can provide the opportunity to mitigate impacts to rare, threatened, and endangered species and/or the habitat which supports these species in wetland and riparian areas.
- 5.D.3 Development should be designed in such a manner that pollutants and siltation will not significantly adversely affect the value or function of wetlands.
- 5.D.4 Require riparian protection zones around natural watercourses. Riparian protection zones shall include the bed and bank of both low- and high-flow channels and associated riparian vegetation, the band of riparian vegetation outside the high-flow channel, and buffers of 100 feet in width as measured from the top of bank of unvegetated channels and 50 feet in width as measured from the outer edge for the canopy of riparian vegetation. Exceptions may be made in existing developed areas where existing development and lots are located within the setback areas.
- 5.D.5 Identify and conserve remaining upland habitat areas adjacent to wetlands and riparian areas that are critical to the feeding or nesting of wildlife species associated with these wetland and riparian areas.
- 5.D.6 Require new private or public developments to preserve and enhance existing native riparian habitat unless public safety concerns require removal of habitat for flood control or other public purposes. In cases where new private or public development results in modification or destruction of riparian habitat for purposes of flood control, the developers shall be responsible for creating new riparian habitats within or near the project area at a ratio of three acres of new habitat for every acre destroyed.

Fish and Wildlife Habitat**Goal**

- Goal 5.E To protect, restore, and enhance habitats that support fish and wildlife species so as to maintain populations at viable levels.

Section Policy

- 5.E.2 Require development in areas known to have particular value of wildlife to be carefully planned and, where possible, located so that the reasonable value of the habitat for wildlife is maintained.
- 5.E.3 Encourage private landowners to adopt sound wildlife habitat management practices, as recommended by the California Department of Fish and Game officials and the U.S. Fish and Wildlife Service.

Goals and Policies

Vegetation

Goal

Goal 5.F To preserve and protect the valuable vegetation resources of Madera County.

Section Policy

- 5.F.1 Encourage landowners and developers to preserve the integrity of existing terrain and natural vegetation in visually sensitive areas such as hillsides and ridges, and along important transportation corridors.
- 5.F.2 Require developers to use native and compatible non-native species, especially drought-resistant species, to the extent possible in fulfilling landscaping requirements imposed as conditions of discretionary permit approval or for project mitigation.
- 5.F.6 Require that new development preserve natural woodlands to the maximum extent possible.

Open Space for the Preservation of Natural Resources

Goal

Goal 5.H To preserve and enhance open space lands to maintain the natural resources of the County.

Section Policy

- 5.H.2 Require that new development be designed and constructed to preserve the following types of areas and features as open space to the maximum extent feasible:
- a. High erosion hazard areas;
 - b. Scenic and trial corridors;
 - c. Streams and streamside vegetation;
 - d. Wetlands;
 - e. Other significant stands of vegetation;
 - f. Wildlife corridors; and
 - g. Any areas of special ecological significance.
- 5.H.5 Require that significant natural, open space, and cultural resources be identified in advance of development and incorporated into site-specific development project design.

Air Quality

Goal

Goal 5.J To protect and improve air quality in Madera County and the region.

Section Policy

- 5.J.5 Require new development projects that exceed adopted SJVUAPCD emission thresholds to submit an air quality analysis for review and approval. Based on this analysis, the County shall require appropriate mitigation measures consistent with the SJVUAPCD's 1991 Air Quality Attainment Plan (or updated edition).
- 5.J.11 Require developers to pave all access roads, driveways, and parking areas serving new commercial and industrial development.

Air Quality - Transportation/Circulation

Goal

Goal 5.K To integrate air quality planning with the transportation planning process.

- 5.K.1 Require new development to be planned to result in smooth flowing traffic conditions for major roadways. This includes traffic signals and traffic signal coordination, parallel roadways, and intra- and inter-neighborhood connections where significant reductions in overall emissions can be achieved.

Goals and Policies

- 5.K.5 Require large new developments to dedicate land for and construct appropriate improvements for suitably located park-and-ride lots, subject to the requirements of California Government Code Section 66000 et seq. (AB 1600).

Seismic and Geological Hazards**Goal**

- Goal 6.A To minimize loss of life, injury, and property damage due to seismic and geological hazards.

Section Policy

- 6.A.1 Require the preparation of a soils engineering and geologic-seismic analysis prior to permitting development in areas prone to geological or seismic hazards (i.e., groundshaking, landslides, liquefaction, critically expansive soils).

Flood Hazards**Goal**

- Goal 6.B To minimize the risk of loss of life, injury, damage to property, and economic and social dislocations resulting from flood hazards.

Section Policy

- 6.B.1 Require flood-proofing of structures in areas subject to flooding.
- 6.B.3 Restrict uses in designated floodways to those that are tolerant of occasional flooding and do not restrict or alter flow of floodwaters. Such uses may include agriculture, outdoor recreation, mineral extraction, and natural resource areas.
- 6.B.4 Require that all development within areas subject to 100-year floods be designed and constructed in a manner that will not cause floodwaters to be diverted onto adjacent property or increase flood hazards to other areas.
- 6.B.5 Require flood control structures, facilities, and improvements to be designed to conserve resources, incorporate and preserve scenic values, and to incorporate opportunities for recreation, where appropriate.

Fire Hazards**Goal**

- Goal 6.C To minimize the risk of loss of life, injury, and damage to property and watershed resources resulting from unwanted fires.

Section Policy

- 6.C.3 New development shall be required to have water systems that meet County fire flow requirements. Where minimum fire flow is not available to meet County standards, alternative fire protection measures, including sprinkler systems, shall be identified and may be incorporated into development if approved by the appropriate fire protection agency.
- 6.C.4 The County shall review project proposals to identify potential fire hazards and prevent or mitigate such hazards to acceptable levels of risk.
- 6.C.5 Require development to have adequate access for fire and emergency vehicles and equipment. All major subdivisions shall have two points of ingress and egress.

Airport Hazards**Goal**

- Goal 6.D To minimize the risk of loss of life, injury, damage to property, and economic and social dislocations resulting from airport hazards.

Goals and Policies

Section	Policy
6.D.1	Ensure that new development around airports does not create safety hazards such as lights from direct or reflective sources, smoke, electrical interference, hazardous chemicals, or fuel storage in violation of adopted safety standards.
6.D.2	Limit land uses in airport safety zones to those uses listed in the applicable airport comprehensive land use plans (CLUPs) as compatible uses. Exceptions shall be made only as provided for in the CLUPs. Such uses shall also be regulated to ensure compatibility in terms of location, height, and noise.

Noise**Goal**

Goal 7.A To protect County residents from the harmful and annoying effects of exposure to excessive noise.

Section Policy

7.A.2	Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed 60 db L _{dn} within the outdoor activity areas of existing or planned noise-sensitive land uses and 45 db L _{dn} in interior spaces of existing or planned noise-sensitive land uses.
7.A.5	Noise which will be created by new non-transportation noise sources, or existing noise sources, or existing non-transportation noise sources which undergo modification that may increase noise levels, shall be mitigated so as not to exceed the noise level standards of Table 7.A.4 (of the Madera County General Plan Policy Document) on lands designated for noise-sensitive uses. This policy does not apply to noise levels associated with agricultural operations.
7.A.6	Enforce the State Noise Insulation Standards (California Code of Regulations, Title 24) and chapter 35 of the Uniform Building code (UBC) concerning interior noise exposure for multi-family housing, hotels and motels.
7.A.7	Where the development of a project may result in land uses being exposed to existing or projected future noise levels exceeding the levels specified by the policies of the noise section of the General Plan, the County shall require an acoustical analysis early in the review process so that noise mitigation may be included in the project design.

SOURCE: County of Madera, 1995.

MADERA COUNTY ZONING ORDINANCE

The Madera County Code zoning ordinance (Ord. 525 Section 1) provides specific parameters for development on land within the County. The zoning designation ensures that adequate County resources will be available to support development within the County. The zoning designations also act as guidelines for the safety and efficiency of the public streets and highways; aid in stabilizing the economic vitality of the County; and preserve and promote the aesthetics of the community environment. The zoning designations serve as a guide for the distribution and location of the population and of various land uses.

MADERA SITE

The Madera site consists of agricultural land and one single-family rural residential unit. For the last 10 years, the site has been used for non-irrigated feed grain crops such as oat, a winter crop. No crops were planted in 2005 (Shaw, pers. comm., 2005).

Land uses within Madera County are predominantly agricultural. Land uses surrounding the Madera site include light industrial, rural residential, highway service commercial, commercial, recreational and airport. Vacant agricultural, abandoned greenhouses, vacant land, and a single-family residence are located to the north of Avenue 18 adjacent to the Madera site. A junkyard is located south of Avenue 18 between the Madera site and Highway 99. Land directly west of Road 23, adjacent to the Madera site, is used for orchards. The land located directly south-southwest of the Madera site at the northeastern junction of Road 23 and Avenue 17 is used for vineyard and residential uses. The Madera Municipal Airport is located approximately 0.5 miles south of the Madera site across Avenue 17. The Madera Municipal Golf Course is adjacent to the airport.

General Plan and Zoning Designations

General Plan

The Madera County General Plan assigns land a general land use designation to act as overall guidance for Countywide development. The Madera County General Plan land use designation for the Madera site is Agriculture (A) (**Figure 3.8-10**), defined as:

Agriculture – This designation provides for agricultural uses, limited agricultural support service uses (e.g., barns, animal feed facilities, silos, stables, fruit stands and feed stores), agriculturally oriented services (e.g., wineries, cotton gins), timber production, mineral extraction, airstrips, public and commercial refuse disposal sites, recreational uses, public and quasi public uses, and similar and compatible uses. The minimum parcel size shall be 18 acres. Allowable residential development in areas designated Agriculture includes one or two single-family homes per parcel, secondary residential units, caretaker/employee housing, and farmworker housing. The FAR for nonresidential uses shall not exceed 0.10, with the following exceptions: the FAR for agriculturally oriented services shall not exceed 0.25 and the FAR for poultry ranches, greenhouses, and similar uses shall not exceed 0.50. This designation assumes an average of 3.2 persons per dwelling unit.

Zoning

County zoning designations in and surrounding the Madera site include Agricultural, Rural, Exclusive, Twenty Acre District (ARE-20); Commercial, Rural, Highway District (CRH);

Commercial, Rural, General District (CRG); and Agricultural, Rural, Five Acre District (AR-5) (Figure 3.8-11).

According to the zoning ordinance (Chapter 18.58, Title 18) of the Madera County Code, the Madera site has been zoned as *ARE-40*, which is defined as “Agricultural, Rural, Exclusive, Forty Acre District” (Madera County, 2005). Permitted uses within the *ARE-40* zone include most agricultural uses, single family residential, dormitory or attached multi-family farm labor housing unit, and communication tower/wireless communications facility. Regulations under the zoning designation include setback and offset minimums and maximums, structure height maximums, dimension requirements and off-street parking requirements, as defined in zoning ordinance (Chapter 18.58, Title 18) of the Madera County Code. The Madera site is within the sphere of influence of the City of Madera (City of Madera General Plan, 1992). A sphere of influence is defined as a plan for the expected physical boundaries of a local agency (in this case the City of Madera).

Airport Land Use Compatibility Plan

The City of Madera owns all of the property within the airport runway protection zones, as well as most of the property within the runway protection zones proposed for the future. The Madera

Municipal Airport has 120 non-commercial aircraft based at the airfield. These aircraft include 98 single-engine airplanes, 12 multi-engine airplanes, 1 jet airplane, 1 helicopter and 8 ultralights. Aircraft operations average 139 per day, 75% of which is local general aviation, 24% transient general aviation, less than 1% air taxi and less than 1% military (AirNav, 2005).

The *Airport Land Use Compatibility Plan*, adopted in December 1993, established the criteria and policies to assess the compatibility between the principal airports in Madera County and proposed land use development in the areas surrounding them (Table 3.8-10). The plan specifically applies to land uses surrounding the Chowchilla Municipal Airport and the Madera Municipal Airport. The Madera site is located approximately 0.5 miles north of the Madera Municipal Airport.

Portions of the Madera site are located within Madera Municipal Airport Compatibility Zones A, B1, B2, and D, as defined in the Airport Land Use Plan (most of the site is within Zone D). Zone A is classified as runway protection zone or within building restriction line. Zone A is considered high-risk area and no buildings, including residential, or assemblages of people are allowed in this area. A maximum of 10 people per acre is allowed within this area. Zone B1 is classified as an approach/departure zone and includes any land adjacent to a runway. Zone B2 is classified as an extended approach/departure zone. In Zone B1 aircraft commonly travel below 400 feet above ground level within 1,000 feet of the runway. In Zone B2 aircraft are commonly below 800 feet above ground level. Zone B1 and B2 are considered to be subject to substantial noise.

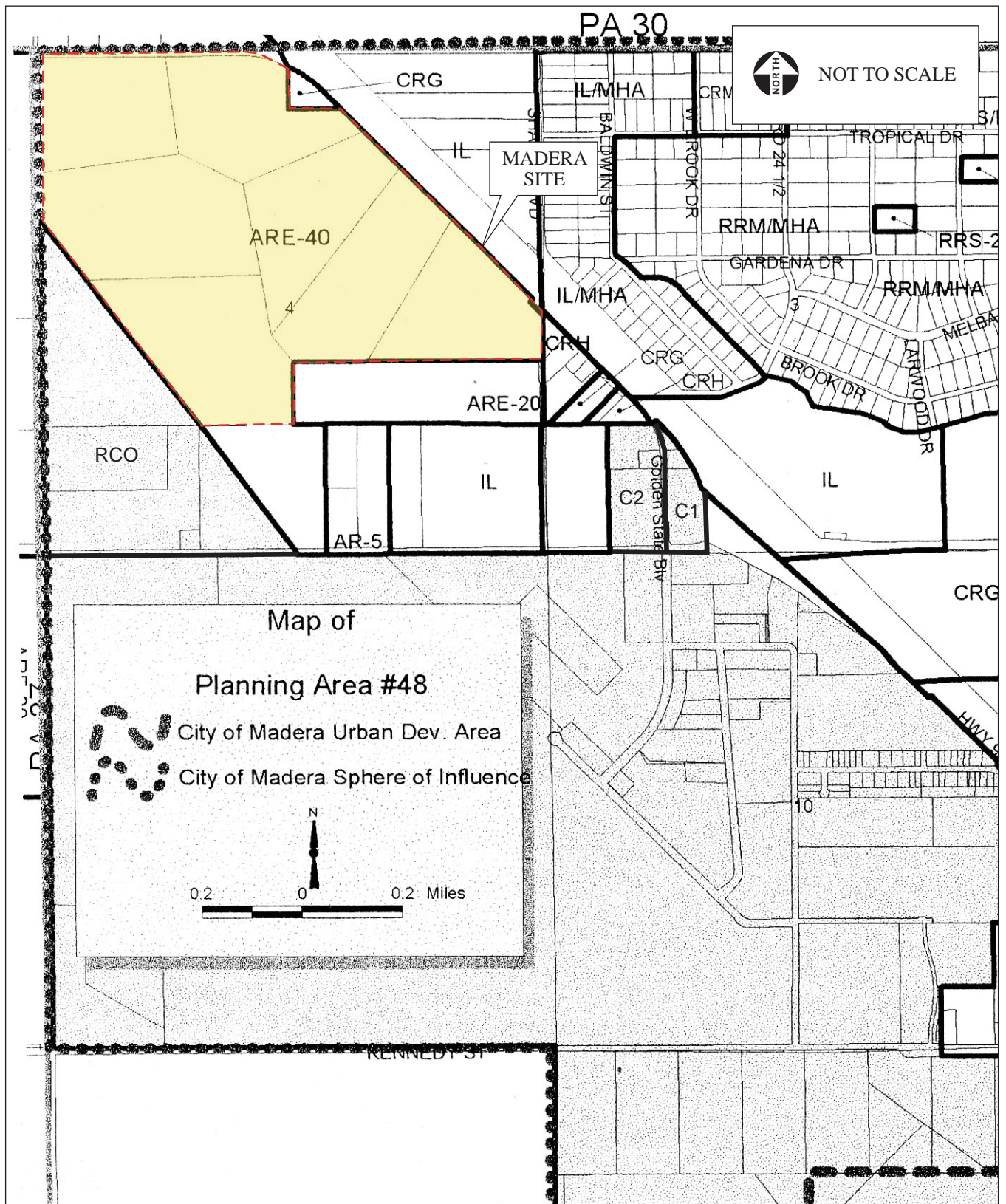


Figure 3.8-11
Madera Site Zoning Map – Alternatives A, B, and C

TABLE 3.8-10
MADERA COUNTY AIRPORT LAND USE PLAN – SUPPORTING COMPATIBILITY CRITERIA

Section	Supporting Compatibility Criteria
3.1	Noise
3.1.4	Noise Exposure for Other Land Uses – Noise level standards for compatibility with other types of land uses shall be applied in the same manner as the [above] residential noise level criteria (i.e. the maximum CNEL considered normally acceptable for residential uses in the vicinity of the airports covered by the plan is 60 dBA). Examples of acceptable noise levels for other land uses in an airport's vicinity are presented in Table 2B (of the Airport Plan; recreated in Section 3.10 of this DEIS).
3.2	Safety
3.2.2	Risks to People on the Ground – The principal means of reducing risks to people on the ground is to restrict land uses so as to limit the number of people who might gather in areas most susceptible to aircraft accidents.
3.2.3	Land Uses of Particular Concern – Land uses of particular concern are ones in which the occupants have reduced effective mobility or are unable to respond to emergency situations. Schools, hospitals, nursing homes, and other uses in which the majority of occupants are children, the elderly, and the handicapped shall be prohibited within Compatibility Zones A, B, and C.
3.2.4	Other Risks – Any use involving the potential for aboveground explosion or release of toxic or corrosive materials shall be prohibited in Compatibility Zones A and B.
3.2.5	Open Land – In the event that an aircraft is forced to land away from an airport, the risks to people on board can best be minimized by providing as much open land area as possible within the airport vicinity. This concept is based upon the fact that the large majority of aircraft accidents occurring away from an airport runway are controlled emergency landings in which the pilot has reasonable opportunity to select the landing site. <ul style="list-style-type: none"> (a) To qualify as open land, an area must be: (1) free from structures and other major obstacles such as walls, large trees, and overhead wires; and (2) have minimum dimensions of at least 75 feet by 300 feet. Roads and automobile parking lots are acceptable as open land area if they meet the preceding criteria. (b) Open land requirements for each compatibility zone are to be applied with respect to the entire zone. Individual parcels may be too small to accommodate the minimum-size open area requirement. Consequently, the identification of open land areas must initially be accomplished at the general plan or specific plan level or as part of large-acreage projects. (c) Clustering of development and providing contiguous landscaped and parking areas is encouraged as a means of increase in the size of open land areas (d) Building envelopes and the approach zones should be indicated on all development plans and tentative maps within an airport's planning area in order to assure that individual development projects provide the open land areas identified in a general plan, specific plan, or other large-scale plan.
3.3	Airspace Protection
3.3.1	Height Limits – The criteria for limiting the height of structures, trees and other objects in the vicinity of an airport shall be set in accordance with Part 77, subpart c, of the Federal Aviation Regulations and with the United States Standard for Terminal Instrument Procedures (TERPS). Airspace plans for each airport which depict the critical areas for airspace protection are provided in Chapter 4 (of the airport compatibility plan).

Section	Supporting Compatibility Criteria
3.3.2	<p>Avigation Easement Dedication – The owner of any property proposed for development within Compatibility Zones A and B shall be required to dedicate an avigation easement to the jurisdiction owning the airport.</p> <ul style="list-style-type: none"> (a) The avigation easement shall: (1) provide the right of flight in the airspace above the property; (2) allow the generation of noise and other impacts associated with aircraft overflight; (3) restrict the height of structures, trees and other objects; (4) permit access to the property for the removal or aeronautical marking of objects exceeding the established height limit; and (5) prohibit electrical interference, glare, and other potential hazards to flight from being created on the property. (b) Within Compatibility Zones A and B, height restrictions of less than 35 feet may be required.
3.3.3	<p>Minimum Restriction – Other than within Compatibility Zones A and B, no restrictions shall be set which limit the height of structures, trees, or other objects to less than 35 feet above the level of the ground on which they are located even if the terrain or objects on the ground may penetrate Federal Aviation Regulations Part 77 surfaces.</p>
3.3.5	<p>Other Flight Hazards – Land uses which may produce hazards to aircraft in flight shall not be permitted within any airport's planning area. Specific characteristics to be avoided include: (1) glare or distracting lights which could be mistaken for airport lights; (2) sources of dust, steam, or smoke which may impair pilot visibility; (3) sources of electrical interference with aircraft communications or navigation; and (4) any use which may attract large flocks of birds, especially landfills and certain agricultural uses.</p>

SOURCE: Madera County, 1993; AES, 2006.

Maximum allowable density for both Zone B1 and B2 for uses other than residential is 60 people per acre. The land use should not attract more than the indicated number of people per acre at any time, including all individuals who may be on the property (e.g., employees, customers/visitors, etc.). The densities are intended as general planning guidelines to aid in determining the acceptability of proposed land uses. Zone B1 and B2 are required to be 30% open land, as defined in **Table 3.8-11**. Zone D is classified as other airport environs. It is considered to have negligible safety risk but may have potential for annoyance from overflights. In Zone D there is no limit on land use densities and no requirements for open land.

As indicated in **Figure 3.8-12**, less than a quarter of the Madera site is within Zone B1. A small portion of the Madera site is located in Zones A and B2 and the remainder of the Madera site is within Zone D. Common hazards to flight include: 1) glare or distracting lights which could be mistaken for airport lights, 2) sources of dust, steam, or smoke which may impair pilot visibility, 3) sources of electrical interference with aircraft communications or navigation; and 4) any use which may attract large flocks of birds, especially landfills and certain agricultural uses.

TABLE 3.8-11
MADERA COUNTY AIRPORT LAND USE COMPATIBILITY PLAN – DEVELOPMENT CRITERIA

Zone	Development Criteria		Examples	
	Prohibited Uses	Other Development Conditions	Normally Acceptable Uses	Uses Not Normally Acceptable
A	<ul style="list-style-type: none"> • All structures except ones with location set by aeronautical function. • Assemblages of people. • Objects exceeding FAR Part 77 height limits. • Hazards to flight. 	<ul style="list-style-type: none"> • Dedication of avigation easement. 	<ul style="list-style-type: none"> • Aircraft tiedown apron. • Pastures, field crops, vineyards. • Automobile parking. 	<ul style="list-style-type: none"> • Heavy poles, signs, large trees, etc.
B1 and B2	<ul style="list-style-type: none"> • Schools, day care centers, libraries. • Hospitals, nursing homes. • Highly noise-sensitive uses. • Storage of highly flammable materials. • Hazards to flight. 	<ul style="list-style-type: none"> • Locate structures maximum distance from extended runway centerline. • Minimum NLR of 25 dBA in residential and office buildings. • Dedication of avigation easement. 	<ul style="list-style-type: none"> • Aircraft tie down apron. • Pastures, field crops, vineyards. • Automobile parking. • Any agricultural use except ones attracting bird flocks. • Warehousing, truck terminals. • Single-story offices. 	<ul style="list-style-type: none"> • Suburban residential subdivisions. • Intensive retail uses. • Intensive manufacturing or food processing uses. • Two-story offices. • Hotels and motels.
D	<ul style="list-style-type: none"> • Hazards to flight. 	<ul style="list-style-type: none"> • Deed notice required for residential development. 	<ul style="list-style-type: none"> • All except ones hazardous to flight. 	<ul style="list-style-type: none"> • Land uses with bright lights or bird attractions and uses that create smoke or dust.

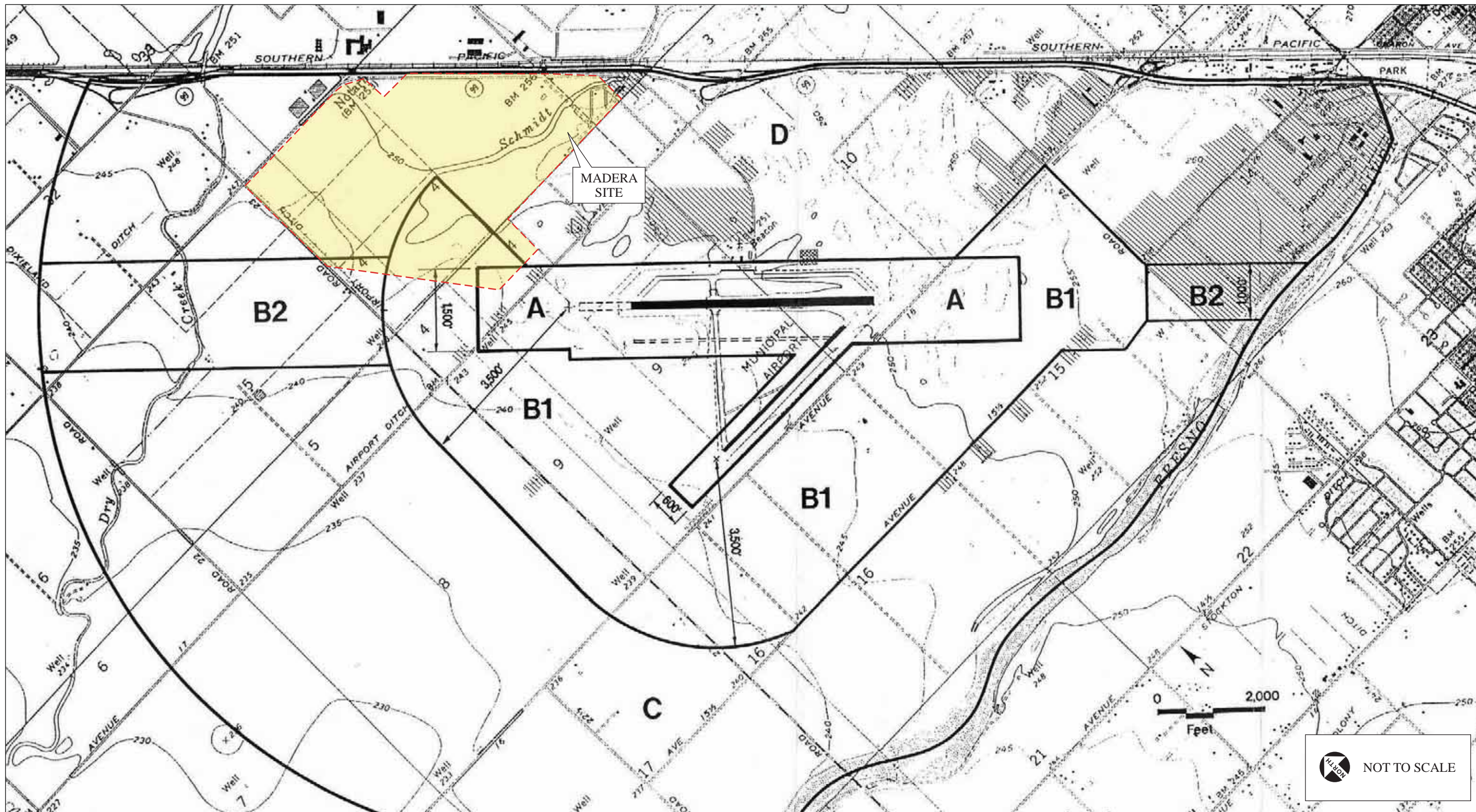
NOTES: NRL = noise level reduction; i.e., the attenuation of sound level from outside to inside provided by the structure.

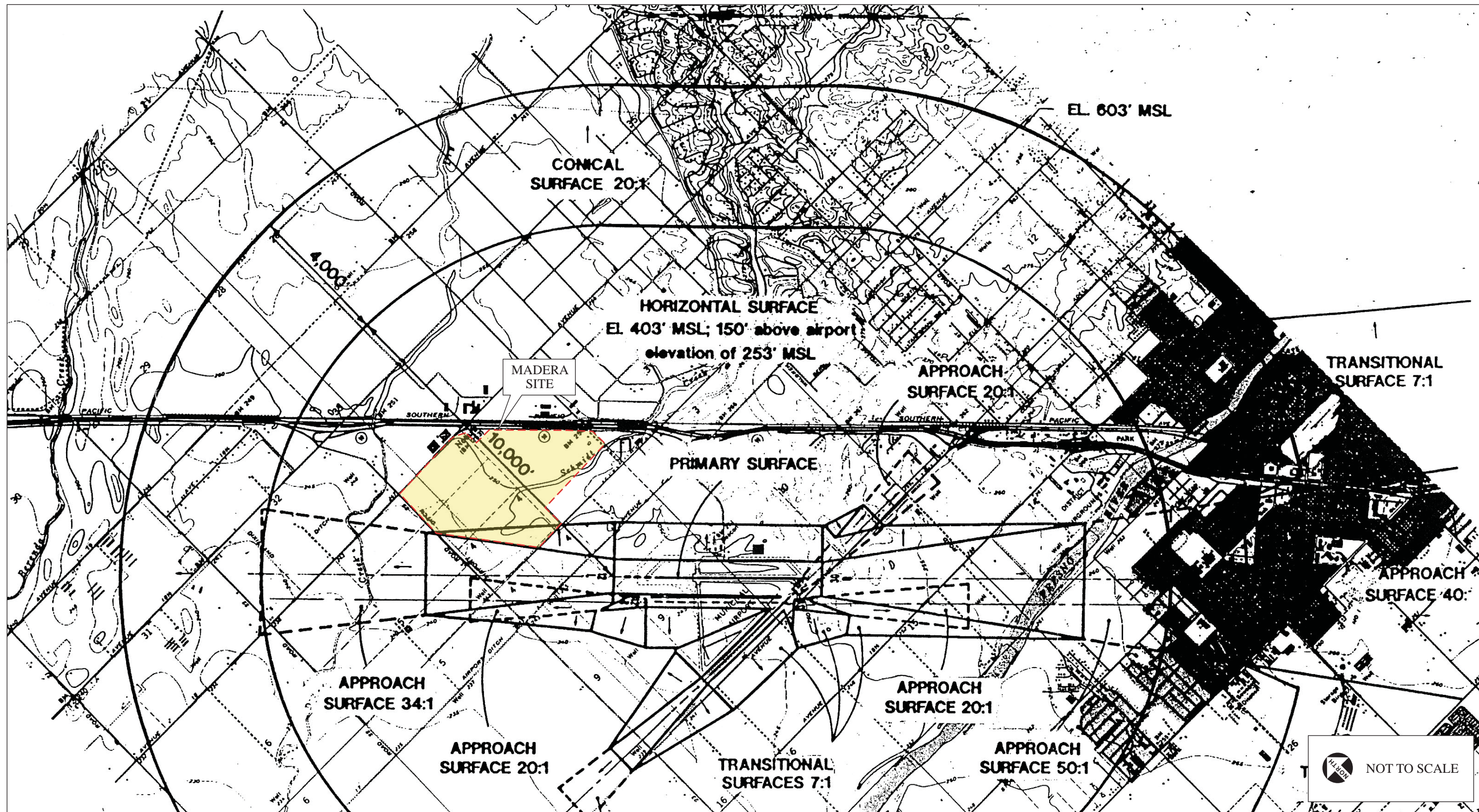
SOURCE: Madera County, 1993.

Federal Aviation Administration Regulations

The Federal Aviation Administration (FAA) regulates height restrictions surrounding the Madera Municipal Airport. The Federal Aviation Regulations (FAR) Part 77, addresses objects affecting navigable airspace (FAA, 2005). FAR Part 77 defines “surfaces” above the ground that represent height restrictions for objects, including buildings, trees, heavy poles, signs, etc. Surfaces surrounding the airport are represented in **Figure 3.8-13**. The southernmost portion of the Madera site is within the transitional surfaces zone. The rest of the Madera site is within the horizontal surface zone. The surface heights are defined in those areas as:

- *Transitional surface.* These surfaces extend outward and upward at right angles to the runway centerline and the runway centerline extended at a slope of 7 to 1 from the sides of the primary surface and from the sides of the approach surfaces. They extend until they reach the height of the horizontal surface.
- *Horizontal surface.* A horizontal plane 150 feet above the established airport elevation.





The FAA also has several requirements for notifying the FAA if construction of an object may affect the navigable airspace (FAA, 2000). Notice is required if the object is:

Near a Public-Use or Military Airport, Heliport, or Seaplane Base, where the proposed project would be within 20,000 feet of an airport with at least one runway more than 3,200 feet in length and the object would exceed a slope of 100:1 horizontally from the nearest point of the nearest runway.

In addition to permanent structures, the FAA requires notification of temporary structures or equipment, such as a crane, if the object exceeds the 100:1 horizontal slope requirement.

NORTH FORK SITE

The North Fork site is located within four miles of the community of North Fork, which has a population of approximately 3,600 residents. North Fork is located in the Sierra Nevada Mountains adjacent to the Sierra National Forest, about 30 miles south of Yosemite National Park, and 50 miles north of Fresno. The North Fork site is located on land that is currently held in individual trust by the BIA. Individual trust allotments are held on land to the north of the North Fork site. Current land use at the North Fork site, which has three residences, is rural residential. Land uses surrounding the North Fork site are also rural residential.

General Plan and Zoning

Because the North Fork site is located on land that is currently held in trust by the BIA, it is not subject to local land use jurisdiction. The general plan and zoning for Madera County are not applicable to land that is held in trust by Federal agencies. The North Fork site is not within the range of influence of the Madera Municipal Airport or any other airport.

3.8.3 AGRICULTURE

The United States Department of Agriculture performs a state-by-state census of agriculture every five years. The National Agriculture Statistical Service (NASS) collects census data from a list of all known potential agriculture operators. The census reports on various statistics relating to crop yields, farm acreage, and farm economics. Selected census of agriculture data for Madera County from the past three census years is shown in **Table 3.8-12**. According to the most recent census, 682,468 acres (or 50%) of the total 1,374,160 acres in Madera County were used for farming purposes (USDA, 2005). Farmland in Madera County accounts for 2.5% of the total farmland within the State of California.

The Madera County Department of Agriculture publishes the annual crop report that includes data on that year's crop yields and the progress of any County pest management programs.

TABLE 3.8-12
CENSUS OF AGRICULTURE STATISTICS FOR MADERA COUNTY

Category	1992 Census	1997 Census	2002 Census
Farms	1709	1673	1780
Land in farms	749,465	641,546	682,468
Farm acreage (percentage of total County acreage)	55%	47%	50%
Average size of farm	439	383	383

SOURCE: USDA, 2005; AES, 2006.

According to the *2003 Agricultural Crop Report*, Madera County's gross production value in 2003 was \$760,784,000, which was a decrease of 2.4% from the 2002 production value (Madera County, 2003). The report also indicated that field crop production decreased slightly for most commodities, such as cotton, corn, oats, wheat, rice, barley, sugar beets, dry edible beans, and all hay. Wheat production experienced the greatest decline due to wheat stripe rust affecting more than two thirds of the County wheat acreage. Almonds became the number one crop in Madera County in 2003, due to continuing increases in acreage and a 42% increase in production value. Grape values were also increasing slightly although not enough to offset decreased harvested acreage and yield per acre. Variable temperatures harmed pistachio pollination, resulting in a 70% decrease in yield. Apples, olives, and many fruits increased in yield when less productive orchards were taken out of production. Dairy herd numbers increased and market milk production increased by over 14% during 2003. Nursery production acreage increased 58% in 2003, with an accompanying increase in production value of nearly \$2.4 million. In contrast, vegetable crop production values decreased over \$7 million (Madera County, 2003). The top ten crops for 2002 and 2003 are shown in **Table 3.8-13**.

TABLE 3.8-13
TOP TEN CROPS IN MADERA COUNTY

2002		2003	
Crop	Gross Production Value	Crop	Gross Production Value
Grapes	\$155,043,000	Almonds	\$163,038,000
Almonds	\$115,148,000	Grapes	\$148,260,000
Milk	\$108,843,000	Milk	\$128,973,000
Pistachios	\$93,798,000	Heifers	\$47,025,000
Heifers	\$43,750,000	Pistachios	\$31,891,000
Alfalfa	\$32,650,000	Alfalfa	\$31,374,000
Cattle and Calves	\$24,225,000	Cattle and Calves	\$29,185,000
Poultry	\$23,801,000	Poultry	\$22,125,000
Nursery Stock	\$18,271,000	Cotton	\$21,771,000

Cotton	\$21,771,000	Nursery Stock	\$20,660,000
Total	\$637,300,000	Total	\$644,302,000

SOURCE: Madera County, 2004; AES, 2006.

Farmland Protection Policy Act

The Farmland Protection Policy Act (FPPA) (7 U.S.C. § 4201) is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to non-agricultural uses. It assures that Federal programs are compatible with state, local, and private programs and policies to protect farmland (NRCS, 2004).

The Natural Resource Conservation Service (NRCS) is responsible for the implementation of the FPPA and categorizes farmland in a number of ways. These categories include: prime farmland, farmland of statewide importance, and unique farmland. Prime farmland is considered to have the best possible features to sustain long-term productivity. Farmland of statewide importance includes farmland similar to prime farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Unique farmland is characterized by inferior soils and generally needs irrigation depending on climate. The designated farmlands must also have been in production four years prior to the categorization by the NRCS.

Consultation with the NRCS has shown that the Madera site contains prime farmland, unique farmland, and farmland of statewide and local importance (**Appendix Q**). The NRCS uses the California Storie Index to evaluate the land for crop suitability, as detailed in **Table 3.8-14**.

TABLE 3.8-14
STORIE INDEX RATING

Grade	Index Rating	Description
1	80-100	Few limitations that restrict their use for crops.
2	60-80	Suitable for most crops, but have minor limitations that narrow the choice of crops and have a few special management needs.
3	40-60	Suited to a few crops or to special crops and require special management.
4	20-40	If used for crops, are severely limited and require special management.
5	10-20	Not suited for cultivated crops, but can be used for pasture and range.
6	Less than 10	Soil and land types generally not suited to farming.

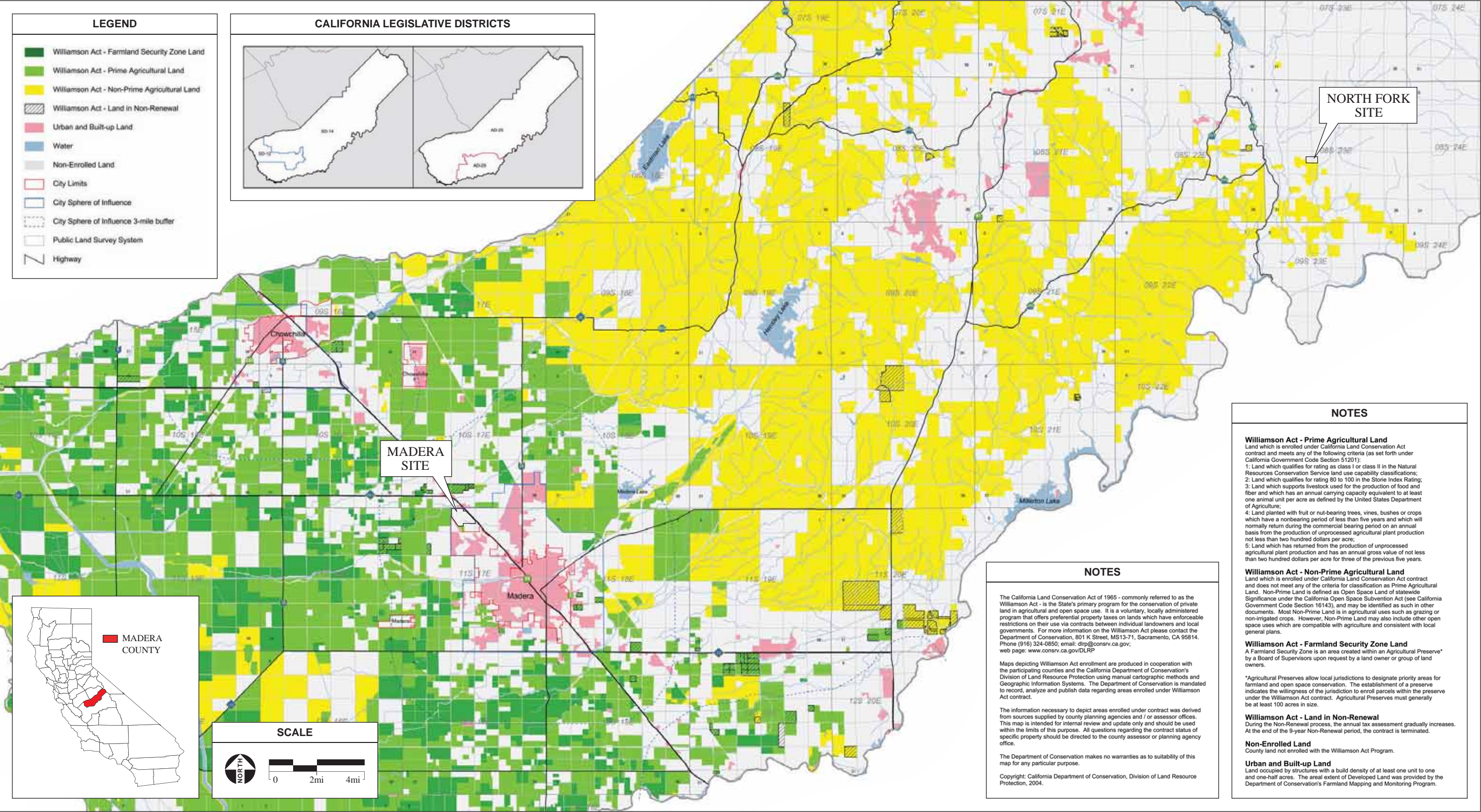
SOURCE: USDA, 2004; AES, 2004.

In some areas, land that does not meet the criteria for prime or unique farmland is considered to be farmland of statewide importance for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the State. Generally, the land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable. Farmland of statewide importance may include tracts of land that have been designated for agriculture by State law. As shown in **Figure 3.8-15**, the majority of the Madera site is made up of farmland of local importance. Farmland of local importance is defined as tracts of land that are not identified as having national (prime or unique farmland) or statewide importance, but which have nonetheless been identified by a local agency as important farmlands (7 C.F.R. § 657.5).

Williamson Act

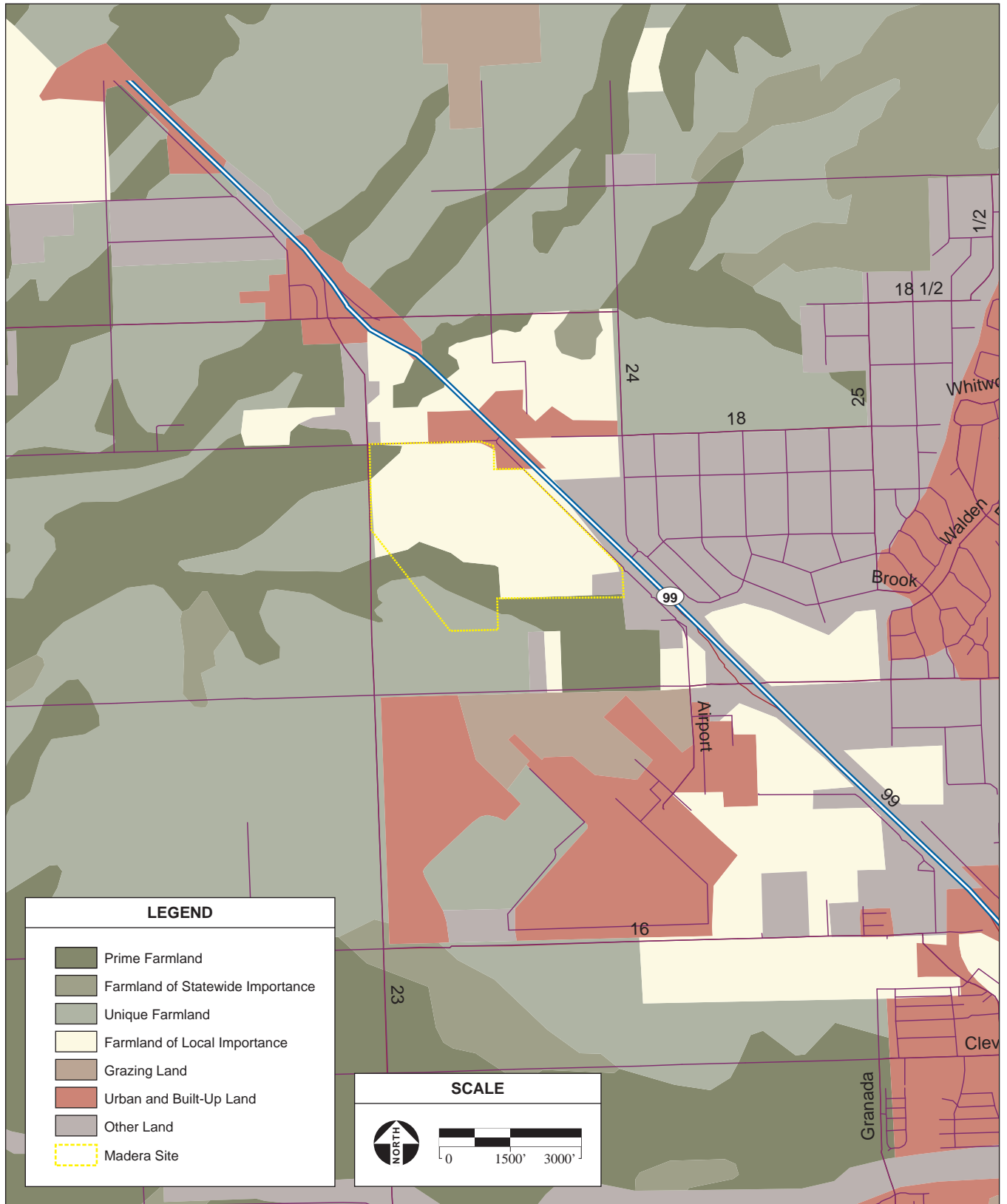
In addition to the NRCS categorization, the California Land Conservation Act of 1965, referred to as the Williamson Act (CGC § 51200 *et. seq.*), enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments which are much lower than normal because they are based upon farming and open space uses as opposed to full market value. Local governments receive an annual subvention of forgone property tax revenues from the State via the Open Space Subvention Act of 1971. A majority of land in Madera County is under Williamson Act contracts, as shown in **Figure 3.8-14**. Land subject to a Williamson Act contract is valued on a yearly basis according to its income-producing ability. Generally, the assessor values the land by taking the fair rental value, as well as the actual rent being paid (if any) on the subject land. The fair rental value is then divided by a specified capitalization rate. The capitalized value, which will serve as the land's value under the Williamson Act, is the result of this calculation.

The Williamson Act was amended in 1998 to include the Farmland Security Zone (FSZ) Act (CGC § 51200 *et. seq.*). The property must be in a Williamson Act contract in order to qualify as a FSZ. Under the provisions of the act, the landowner applies for FSZ status, and enters into a contract with the county, which annually renews twenty years into the future. The owner of the property promises not to develop the property into non-agricultural uses. In return, the FSZ contract is valued for assessment purposes at 65 percent of the value of its Williamson Act value, or its Proposition 13 value, whichever is lower. The terms of a Williamson Act contract are for a minimum of 10 years, whereas terms of the FSZ contract are for a minimum of 20 years. In September 2002, a group of adjacent landowners just outside of the City of Madera created a farmland security perimeter, which permanently protects 440 acres of farmland to the west of the



SOURCE: Madera County Williamson Act Lands, 2004; AES, 2006

Figure 3.8-14
Williamson Act and Farmland Security Zone Parcels



city, shown as dark green areas in **Figure 3.8-14**. There are no Williamson Act or FSZ contracts on the Madera site or the North Fork site.

Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP) produces maps and statistical data used for analyzing impacts on California's agricultural resources. Agricultural land is rated according to soil quality and irrigation status and is usually based on information obtained from aerial photographs and from the NRCS. The FMMP map for the vicinity of the Madera site is shown in **Figure 3.8-15**.

Madera County Right to Farm Ordinance

In situations where nonagricultural land uses extend into agricultural areas, agricultural operations sometimes become the subject of nuisance complaints. Litigation sometimes results, leading to a curtailing of agricultural operations and investments in agricultural operations. In order to conserve, protect, and encourage the development, improvement, and viability of agricultural operations, Madera County passed a "right to farm" ordinance protecting existing agricultural operations from nuisance lawsuits (Ord. 522 § 2(part), 1989).

Current Use

Recently, the Madera site has been used for non-irrigated feed grain crops such as oat. Oat is a winter crop and is harvested in July/August. The land is fallow the remainder of the year (Shaw, pers. comm., 2005).

The North Fork site is not currently used for agricultural activities. Because the North Fork site is trust land, it is not applicable for Williamson Act or FSZ contract.

3.8.4 OTHER RESOURCE USES

The Madera site is primarily used for agriculture. No hunting, fishing, hiking or other recreational uses exist at the Madera site. The nearest recreational use is the Madera Municipal Golf Course, located just south of the Madera site across Avenue 17.

The North Fork site is currently used for rural residences and for open space.

3.9 PUBLIC SERVICES

3.9.1 WATER SUPPLY

MADERA SITE

The City of Madera's (City) water supply consists of 18 groundwater wells, a 1-million gallon water storage tower and water distribution pipelines. In addition to the public wells, a large number of residents utilize private wells for their water supply needs. Shallow wells within a two-mile radius of the Madera site are shown in **Figure 3.9-1** and deep wells within a two-mile radius are shown in **Figure 3.9-2**. Municipal Well #26 is located about a mile south of the Madera site at the intersection of Airport Drive and Aviation Drive (**Figure 3.9-2**). This well is approximately 600 feet deep and has a capacity of approximately 1,300 gallons per minute (gpm). Municipal Well #25 is located about 1.5 miles southeast of the Madera site. The well is approximately 500 feet deep and has a capacity of approximately 2,200 gpm. The Madera site has previously been used for agriculture and there is one active agricultural well on the Madera site. Groundwater quality is generally good but manganese levels tend to increase with depth north of the City (HydroScience Engineers, 2006). Thus, elevated manganese levels are possible in the vicinity of the Madera site. Manganese in water does not create a health hazard but in high concentrations will cause brownish-black staining of laundry, porcelain, dishes, utensils, and even glassware. Treatment is not required but is usually desirable.

In addition to municipal uses, Madera County requires irrigation water for intensive agricultural land uses. The Bureau of Reclamation created the Central Valley Project (CVP) in order to provide the semi-arid regions of California with water for irrigation and industrial uses. Madera County is part of the Friant Division of the CVP, which transports surplus northern California water through the southern part of the semiarid Central Valley. The division delivers water to over one million acres of irrigable farmland on the east side of the southern San Joaquin Valley, from approximately Chowchilla in the north, to the Tehachapi Mountains in the south. The main features of this division are Friant Dam, Friant-Kern Canal, and Madera Canal. The principal features of the Friant Unit begin with the San Joaquin River at Millerton Reservoir and Friant Dam located northeast of Fresno. Out of Millerton Reservoir, water is distributed to contracting irrigation and water districts and local cities by way of the Friant-Kern Canal to the south, and the Madera Canal to the north.

NORTH FORK SITE

Municipal water supply service has not been extended to the North Fork site. Water in the area is currently provided by three individual wells, one located at each residence. Wells within a one-mile radius are shown in **Figure 3.9-3**. Approximately 10 wells are not shown on the figure due to inadequate location information. A study by Madera County suggests that groundwater quantity in eastern Madera County is sufficient to meet current and some future development

(County of Madera, 2002). Some wells throughout the County have elevated concentrations of total coliform bacteria, gross alpha/uranium, arsenic, iron, and manganese. Due to increased levels of uranium and arsenic, some wells supply only non-potable demands (HydroScience Engineers, 2006).

The nearest municipal system is the Madera County Maintenance District 8A (District), which serves water to the town of North Fork. The District has 49 residential connections, 9 commercial connections with 27.56 equivalent dwelling units (EDUs), and 22 standby connections. The District will serve approximately 200 homes and services upon final build-out. The system receives water from one well, which is 520 feet deep. Water is pumped at 240 gallons per minute (gpm) into a 200,000 gallon storage tank (Madera County, 2005). There is also one inactive well available for future use. The nearest connection point is located at the intersection of Road 225 and Road 274. Water shortages have not been an issue for this District (County of Madera, 2002).

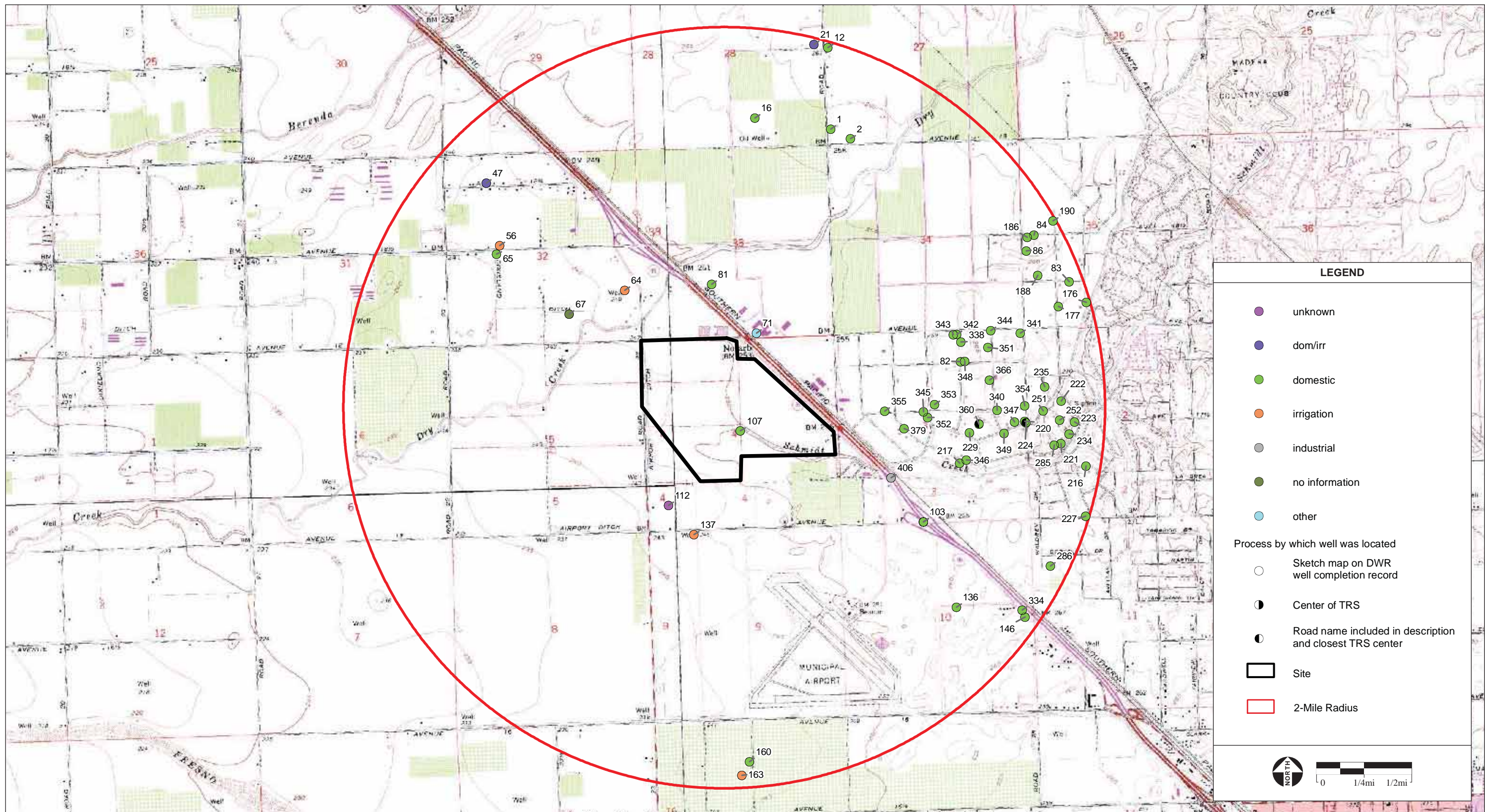
3.9.2 WASTEWATER SERVICE

MADERA SITE

Currently there are no wastewater treatment facilities located on the Madera site. The Madera Wastewater Treatment Plant, located at 13048 Road 21½, approximately 5 miles southwest of the Madera site in the City of Madera, is the regional facility for disposal of wastewater. The trickling filter treatment plant handles wastewater and sewage from approximately 10,000 residential, commercial and industrial customers in the City. The treatment plant was recently expanded to a maximum capacity of 10.1 MGD (million gallons per day), with an average daily demand of 5.8 MGD. During March 2008 expansion, the trickling filter system was replaced with an activated sludge system. The City of Madera maintains approximately 140 miles of sanitary sewer mains in a system that includes five sewer lift pump stations and main pipelines ranging in size from 6 inches to 48 inches. A 10-inch sewer main is located at the junction of Avenue 17 and Airport Drive, 0.25 miles southeast of the Madera site.

NORTH FORK SITE

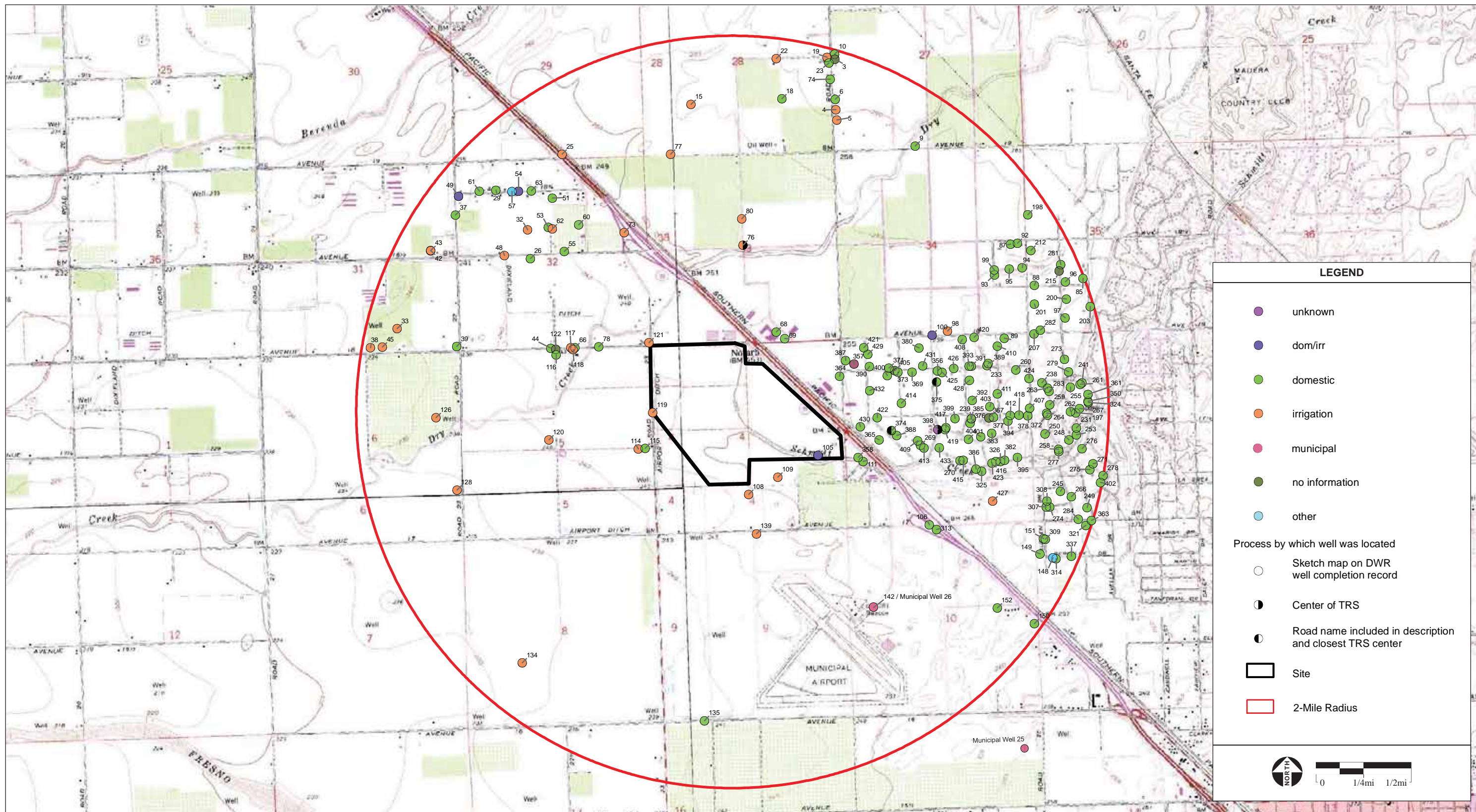
Currently there are no wastewater treatment facilities located on the North Fork site. Residential units currently utilize individual septic systems. The nearest treatment plant is located approximately 2 miles northwest of the North Fork site near the intersection of Road 225 and Road 228 in North Fork. It is an extended aeration treatment plant operated by the County and designed to treat 31,000 gallons per day (gpd). Treated effluent is disposed of in spray fields. Currently there are 99 service connections and 22 standby connections and the treatment plant is near maximum capacity. Improvement plans include expanding treatment facilities to treat 60,000 gpd and adding leachfields for disposal.



SOURCE: Worley Parsons Komex, 9/06; "Berenda, CA" & "Kismet, CA" USGS 7.5 Minute Topographic Quadrangles, Sections 32 & 33, T10S, R17E and Section 4, T11S, R17E, Mt. Diablo Baseline and Meridian; AES, 2006

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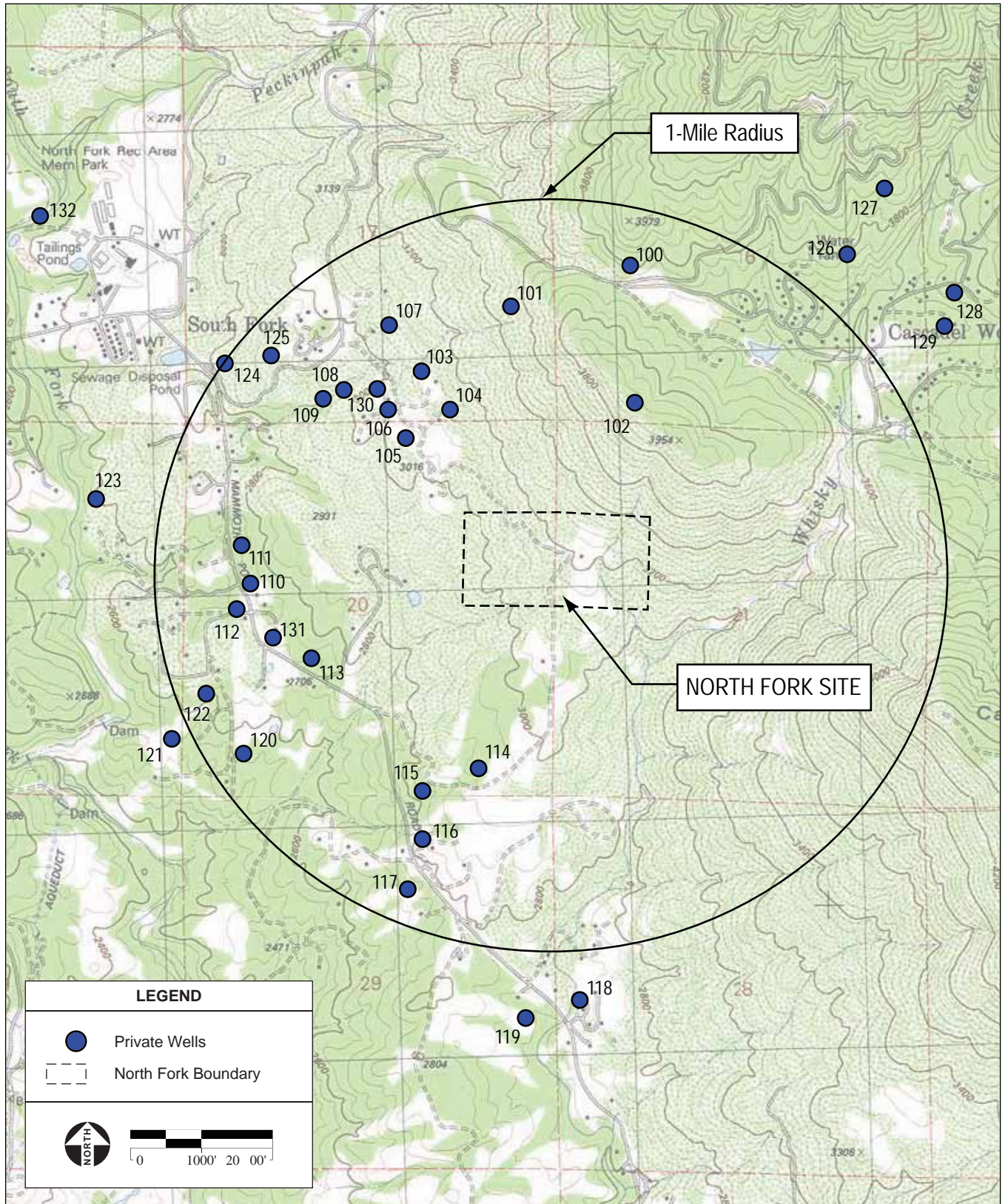
Figure 3.9-1
Location of Shallow Wells - Madera Site and Vicinity



SOURCE: Worley Parsons Komex, 9/06; "Berenda, CA" & "Kismet, CA" USGS 7.5 Minute Topographic Quadrangles, Sections 32 & 33, T10S, R17E and Section 4, T11S, R17E, Mt. Diablo Baseline and Meridian; AES, 2006

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Figure 3.9-2
Location of Deep Wells - Madera Site and Vicinity



SOURCE: "Cascadel, CA" USGS 7.5 Minute Topographic Quadrangle,
Sections 20 & 21, T8S, R23E Mt. Diablo Baseline and Meridian; AES, 2006

North Fork Casino EIS / 204502 ■

Figure 3.9-3
Well Locations – North Fork Site and Vicinity

3.9.3 SOLID WASTE SERVICE

CALIFORNIA INTEGRATED WASTE MANAGEMENT ACT

The management of non-hazardous solid waste in Madera County is mandated by State law and guided by policies at the State and local levels. In 1989, the State of California enacted Assembly Bill (AB) 939, the California Integrated Waste Management Act. The purpose of AB 939 is to:

- Reduce, recycle, and reuse solid waste generated in the State to the maximum extent feasible,
- Improve regulation of existing solid waste landfills,
- Ensure that new solid waste landfills are environmentally sound,
- Streamline permitting procedures for solid waste management facilities, and
- Specify the responsibilities of local governments to develop and implement integrated waste management programs.

As a result of AB 939, all local jurisdictions, cities, and counties are required to divert 50% of the total waste stream from landfill disposal by the year 2000. Each local jurisdiction would demonstrate compliance by instituting source reduction programs. Fines up to \$10,000 a day can be issued for non-compliance. Jurisdictions that did not meet the 50% diversion requirement in 2000 were allowed to petition the California Integrated Waste Management Board (CIWMB) for time extension lasting a maximum of five years. The disposal capacity component of AB 939 requires jurisdictions to conduct a solid waste disposal needs assessment that estimates the disposal capacity needed to accommodate projected solid waste generated within the jurisdiction and to identify a minimum of 15 years of permitted disposal capacity.

MADERA SITE

The City of Madera Solid Waste and Recycling Division provides residents and business owners with the appropriately sized trash receptacle. Brown-Ferris Industries (BFI), the City's contract waste hauler, collects and transports solid waste to the landfill for disposal. Madera County's solid waste disposal needs are provided for at the Fairmead Sanitary Landfill. The landfill is located on approximately 160 acres west of Highway 99 at Avenue 22 and Road 19½, approximately 8.5 miles north of the Madera site. The landfill consists of the old portion of the landfill (46 acres), the new expansion area (100+ acres) and a Materials Recovery Facility (MRF). The MRF is a picking and sorting line where recyclables are recovered and sold. The landfill is permitted up to 1,100 tons per day and has an estimated closure date of 2032. The landfill actually receives 600 tons per day and received 141,300 tons in 2004 (Jones, pers. comm., 2005). Permitted waste types for the landfill include agricultural, mixed municipal, sludge (biosolids), tires, green materials, construction/demolition, and industrial waste. The MRF was

constructed in the year 2000 as part of efforts to comply with AB 939. The City of Madera met the 50% landfill diversion goal in 1999. Unincorporated County diversion rates do not meet the AB 939 requirement and received goal extensions based on biennial review (CIWMB, 2005).

NORTH FORK SITE

Residential and business solid waste collection services are provided by EMADCO Disposal, located in Oakhurst, which serves the Eastern Madera County area. The North Fork Transfer Station is located at 33699 Road 274 near the Town of North Fork, approximately 4 miles to the west of the North Fork site. The transfer station is located on 10 acres and is permitted to receive up to 60 tons per day. Solid waste from the area is collected and routed through the transfer station to the Fairmead Sanitary Landfill for disposal, approximately 50 miles to the southwest of the transfer station. As stated above, the County did not meet the diversion rate requirement of 50% and has received extensions.

3.9.4 ELECTRIC, NATURAL GAS AND TELECOMMUNICATION SERVICES

MADERA SITE

Pacific Gas and Electric Company (PG&E) supplies electricity and natural gas services to the project vicinity. Existing 12 kilovolt (kV) overhead electric facilities extend east/west along Avenue 17, adjacent to the Madera site. Additionally, distribution pressure gas lines are located 0.5 miles to the south of the Madera site at Falcon Drive. The distribution lines are stepped down from the transmission gas facilities that extend north/south between Golden State Boulevard and Highway 99, located adjacent to the Madera site (Barrow, pers comm., 2005).

AT&T provides telecommunication service to residents and businesses in the San Joaquin Valley. AT&T has facilities located along Avenue 18 on the south side of the street and Road 23 on the east side of the street. There are no capacity issues with regards to phone lines in this area. SBC also has a cable along Golden State Boulevard north of Avenue 17.

NORTH FORK SITE

PG&E is the company that provides electricity service in the vicinity of the North Fork site. The nearest electrical line is an overhead 12 kV line near Road 225 and Rainbow Road, approximately 0.5 miles southwest of the North Fork site. There are no natural gas facilities within the area.

The Ponderosa Telephone Company serves the mountain areas surrounding the North Fork site. Copper cable extends along Rainbow Road and Mission Road, adjacent to the North Fork site, which has the capacity to serve 50 phone lines or “pairs”.

3.9.5 PUBLIC HEALTH AND SAFETY

FIRE PROTECTION SERVICES

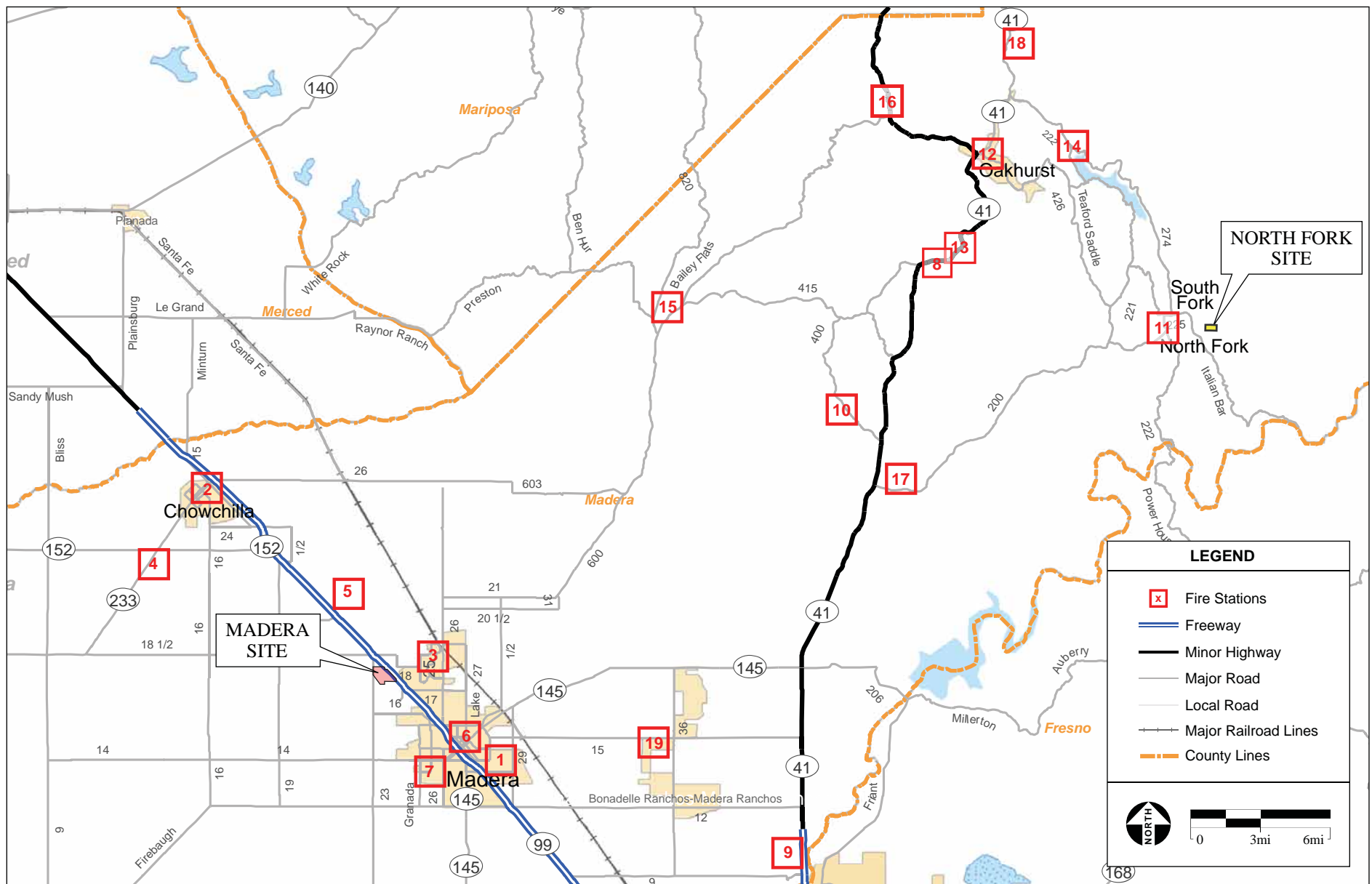
Madera Site

The Madera County Fire Department serves Madera County with the exception of the City of Madera, City of Chowchilla, Central California Women's Facility (Department of Corrections), and Yosemite National Park. These areas have mutual aid agreements with the Department. Both the Madera County and City of Madera Fire Departments are administered and staffed by the California Department of Forestry and Fire Protection (CDF), through separate contracts. The Madera County Board of Supervisors is responsible for governing the County Fire Department. Funding for the County Department is provided through the County General Fund (Helm, pers. comm., 2005). Table 3.9-1 shows the location, staffing, and equipment for fire stations in the vicinity of the Madera site. All stations are operated by the County Fire Department with the exception of Stations 6 and 7, operated by the City of Madera Fire Department. Figure 3.9-4 shows the locations of fire stations in the vicinity of the Madera site.

The staffing goals for County Fire Department are a 2 staff (minimum) for all career-staffed stations. The County Department responded to 8,100 emergency calls in 2003, 70% of which were for medical aid. The County Department does not provide ambulatory services. The 30% of the remaining calls were fire-related emergencies. The majority of those incidents are vegetation fires, followed by structure fires and vehicle fires. Other incidents include hazardous material responses, public service assists and false alarms. Response times vary greatly throughout the County of Madera. According to Deputy Chief Stan Craig, the standard goal for a fire department is to be able to respond to any location in its jurisdiction in 4 minutes. Obviously, this may not be possible under all circumstances, especially for the residential units found in the remote areas of the County. Some areas can be greater than 30 minutes while others run 3 to 5 minutes. Thus, given these circumstances, desired response time (from time of call to arrival at the scene) is less than 5 minutes for heavy urban, 5 to 8 minutes for urban, and 10 to 15 minutes for rural.

Madera County Fire Station #3, located approximately 4.6 miles from the Madera site at 25950 Avenue 18½ in Madera, currently serves the Madera site. The response time to the Madera site from Station 3 is approximately 6.5 minutes (Helm, pers. comm., 2005). The County Department is currently planning several new fire facilities in the near future within Madera County along the Highway 41 corridor.

The City of Madera Fire Department serves areas in the City of Madera and in the City's sphere of influence. As the Madera site is within the City's sphere of influence, it is possible that the City Fire Department would serve the site, although it would primarily be served by County Station #3. Staffing and equipment for the City fire stations, Stations 6 and 7, are listed in Table 3.9-1. The response time from the City Fire Department to the Madera site is 8-10 minutes (Hartsuyker, pers. comm, 2005).



SOURCE: ESRI Data, 2004; AES, 2006

North Fork Casino EIS / 204502 ■

Figure 3.9-4
Fire Station Locations

TABLE 3.9-1
STAFFING LEVELS OF FIRE STATIONS

Station	Address	Paid Staff	Volunteer Staff	Apparatus ¹
1 – Madera	14225 Road 28, Madera	1	20	2 Engines
2 – Chowchilla	112 Trinity Street, Chowchilla	0	7	1 Engine
3 – Madera Acres	25950 Avenue 18½, Madera	1	17	1 Engine, 1 Water Tender
4 -- Dairyland	13802 Avenue 21, Chowchilla	0	10	1 Engine, 1 Water Tender
5 – Central CA Women's Facility	23370 Road 22, Chowchilla	--	--	--
6 – Madera City ²	317 North Lake, Madera	3	0	1 Engine
7 – Madera City ²	200 South Schnoor, Madera	2	0	1 Aerial Apparatus
8 – Chukchansi Casino	34555 Highway 41, Coarsegold	2	0	1 Aerial Apparatus, 1 Light Engine
9 – Rolling Hills	41016 Avenue 11, Madera	1	7	1 Engine
10 – Yosemite Lakes	29453 Glacier Drive, Coarsegold	0	18	2 Engines, 1 Squad
11 – North Fork	32908 Road 222, North Fork	0	13	1 Engine, 1 Squad, 1 Water Tender
12 – Oakhurst	49015 Civic Circle Drive, Oakhurst	1	9	2 Engines, 1 Squad
13 – Coarsegold	35600 Highway 41, Coarsegold	0	5	1 Engine, 1 Water Tender
14 – Bass Lake	40601 Road 274, Bass Lake	0	10	1 Engine, 1 Squad, 1 Water Tender
15 – Raymond	36896 Road 600, Raymond	0	6	1 Engine
16 – Ahwahnee	42308 Highway 49, Ahwahnee	0	9	1 Engine, 1 Squad, 1 Water Tender
17 – O'Neals	Road 201 and Road 200, O'Neals	0	3	1 Engine
18 – Cedar Valley	44907 Lakeside Drive, Oakhurst	0	4	1 Engine, 1 Squad, 1 Water Tender
19 -- Bonadelle	35141 Bonadelle Avenue, Madera	1	26	2 Engines, 1 Squad, 1 Water Tender

NOTES: ¹ A water tender carries approximately 4,000 gallons of water to provide a mobile water source that will supply the fire engines. A squad is a small truck with no pump, water, hose or ladders that carries rescue and EMS supplies. An aerial apparatus carries a hydraulically operated and permanently affixed extending ladder that generally range from 55 feet to 110 feet in vertical reach. In addition to providing an aerial ladder, it may also provide for an elevated fire stream. Aerial apparatus may or may not have a pump and carry water.

² Stations operated by City of Madera Fire Department.

SOURCE: Madera County Fire Department, 2005.

North Fork Site

The Madera County Fire Department provides service to the North Fork site. **Table 3.9-1** shows locations, staffing, and equipment information for the Madera County Fire Department. **Figure 3.9-4** shows the location of stations in the vicinity of the North Fork site. The nearest station is Station #11 located at 32908 Road 222 in North Fork, approximately 4 miles west of the site. The expected response time to the site is approximately 10 to 15 minutes (Helm, pers. comm., 2005). Several new facilities are planned along the Highway 41 corridor.

LAW ENFORCEMENT SERVICES

Madera Site

The County of Madera Sheriff's Department currently provides public safety services to the Madera site. The Department is funded by appropriations from the County General Fund. Dedicated third party funds from State and federal grant programs pay for some law enforcement

expenses. The elected Sheriff of Madera County is the administrative authority. The Department is divided into two geographic sections, the Valley and the Mountains. Each section is commanded by a lieutenant and is almost self-sufficient. The Department provides law enforcement within the Madera County lines. Municipal police departments provide primary law enforcement within the jurisdictional boundaries of Madera and Chowchilla. The Sheriff's Department employs 94 people, of whom 65 are sworn officers. The department headquarters, located at 14143 Road 28 in the City of Madera, is the primary dispatch point for patrol services from the Valley Division. As currently configured, area services are provided from the Headquarters station. The Headquarters Station is approximately 6 miles southeast of the Madera site (Outfleet, pers. comm., 2004). **Figure 3.9-5** shows the location of police stations in the vicinity of the Madera site.

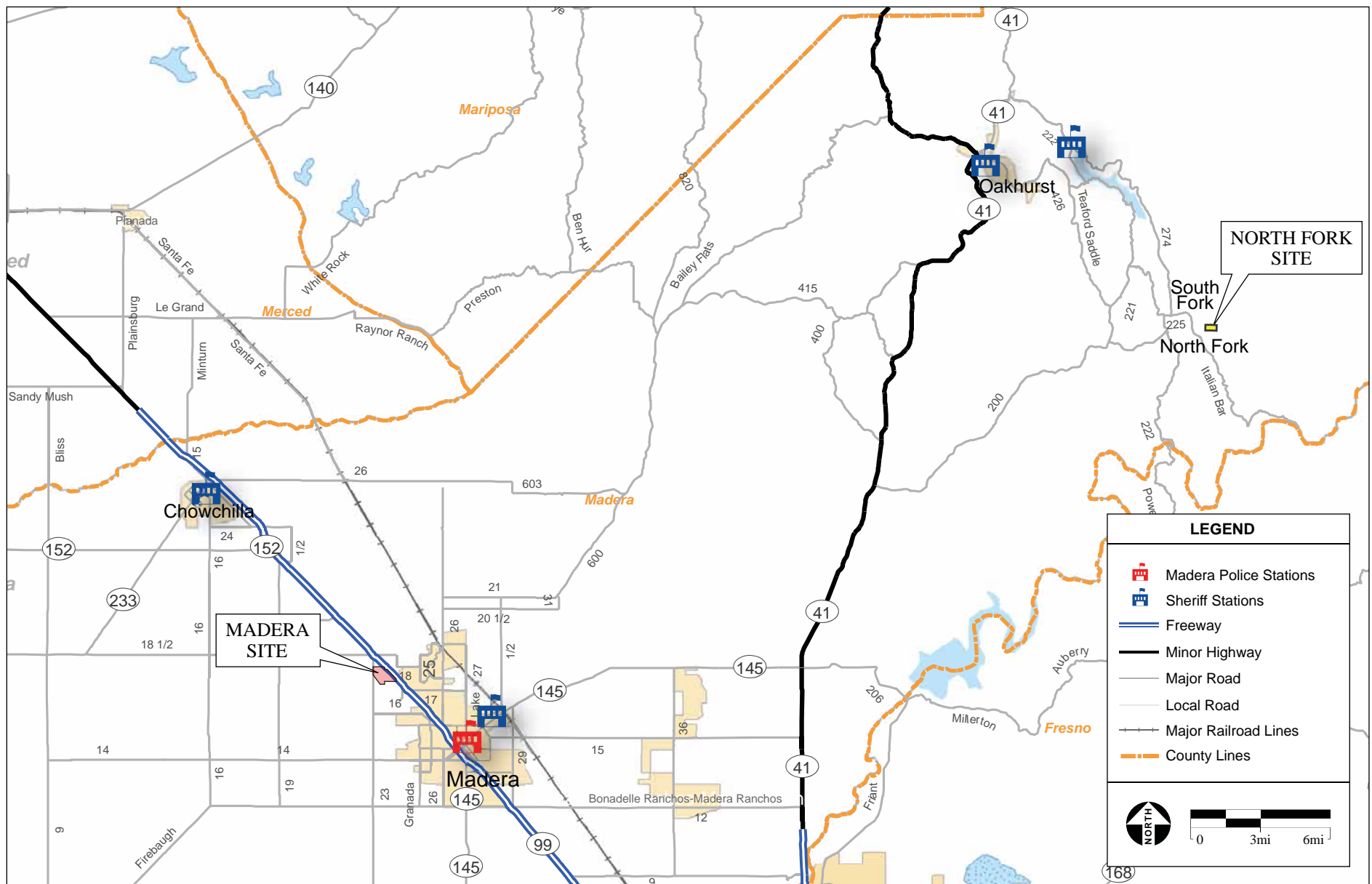
The Headquarters Station houses 24 Deputy Sheriffs and their requisite equipment. The station also has 4 detectives, 2 lieutenants, an Undersheriff and a Sheriff available to respond to calls for service. The department has 4 authorized law enforcement positions that are currently unstaffed; clerical and dispatcher vacancies also exist. The Department seeks to attain the suggested US Department of Justice Federal standard of 1.2 law enforcement officers for every 1,000 persons. Within Madera County, the Board of Supervisors determines the actual service level, which is currently 0.8 law enforcement officers per 1,000 persons. Actual response time for emergency and non-emergency calls is not a maintained statistic within the department, the desired response time for the department is 15 minutes. Calls are dispatched with priority given to threats to life or health (Outfleet, pers. comm., 2004). **Table 3.9-2** provides a summary of Sheriff-Coroner services in 2003.

TABLE 3.9-2
MADERA SHERIFF-CORONER SUMMARY OF SERVICES RENDERED IN 2003

Service	Number of Cases
Requests for service	37,387
Case files opened	6,567
Major crimes reported	2,071
All arrests	1,366
Felony arrests	595
Misdemeanor arrests	745
Coroner cases reported	491

SOURCE: Madera County Sheriff's Department, 2004.

Although unincorporated areas of Madera County are rarely served by the City of Madera Police Department, it is located within the vicinity of the Madera site. The Department is funded by the City of Madera general fund. There is one station, located at 203 West 4th Street, as shown on **Figure 3.9-5**. There are 79 total staff, of which 54 are sworn officers. There are 4 authorized sworn positions which are currently vacant. The City Department has 15 patrol vehicles, 3 K-9



SOURCE: ESRI Data, 2004; AES, 2006

North Fork Casino EIS / 204502 ■

Figure 3.9-5
Police Station Locations

units, and a SWAT team, which is shared with the County. Patrols are run in 2 shifts with 5 officers and 1 supervisor per shift. There are 4 beats and the Madera site is closest to Beat #4. In 2004, there were 40,000 calls for service to the City of Madera Police Department (Frazier, pers. comm., 2005).

The California Highway Patrol (CHP) has jurisdiction on all state highways and county roadways. The CHP responds to incidents on private property involving vehicular theft, vehicular collision, drunk driving, and a serious injury or fatality while using a motor vehicle. The CHP has 8 divisions. The Central Division, in which Madera County is located, has 15 Area Offices, 6 Resident Posts, and 2 Commercial Inspection Facilities, employing 667 Uniformed Officers and 226 Non-Uniformed personnel. The Madera Area Office has one commander, 3 field supervisors, and 30 officers. The recommended ratio of field supervisors to officers is 1:8, which implies that the Madera Area Office is slightly understaffed. This office covers primarily the valley floor of Madera County along with a portion of the foothills.

The judicial system and Madera County Department of Corrections (MCDC) are additional components of law enforcement in Madera County. The judicial system includes the District Attorney who prosecutes crimes, Public Defender who defends accused who are indigent, the court system that holds trials, and grand jury that indicts the accused. The County has one jail built to accommodate 316 inmates although the population often surpasses this level (**Appendix R**). At the beginning of 2005, the facility housed 364 inmates. In fiscal year 2005-2006, the average daily inmate population was 377. In 2006-2007, this number was 396. The projection for 2007-2008 is 408. In fiscal year 2006-2007 a project which added bed space and staffing to the current facility was completed, which is expected to accommodate the projected inmate population of 408 and modest increases beyond that number. The MCDC has received funding of \$30 million by the State of California to build a new facility. The facility is expected to be completed by mid-2010. Prisoners in the facility are awaiting arraignment, held on warrants, or serving sentences of less than one year. Prisoners serving over one year are moved to state facilities (**Appendix R**).

North Fork Site

The County of Madera Sheriff provides public safety services to the North Fork site and the surrounding vicinity. The Oakhurst Substation is the closest station that would respond to calls from the North Fork site. The Oakhurst Substation is approximately 18 miles north of the North Fork site at 39884 Road 425B (**Figure 3.9-5**). There are 29 sworn officers and 3 non-sworn officers at this substation with 2 to 4 officers working per shift. The Substation covers mountain areas of the County 24 hours a day, 7 days a week. The Substation service area is divided into 5 sectors and the North Fork site is located in the North Fork sector. The Oakhurst Station responds to approximately 40% of County calls for service. The expected response time for the

mountain areas, including the North Fork site, is within 30 minutes (Salvador, pers. comm., 2005).

Bass Lake Substation is approximately 13 miles to the north of the North Fork site at 40601 Road 274; however, this substation does not respond to calls for service and operates with only 5 sworn officers and 4 un-sworn staff members (Weak, pers. comm., 2005).

A recent expansion created a new CHP Area Office, which covers the area from the border in the foothills to Yosemite. This office has 16-18 officers.

The North Fork site is served by the same judicial system and Department of Corrections as described for the Madera site.

EMERGENCY MEDICAL SERVICES

Madera Site

Pistoresi Ambulance Service operates ambulances in the cities of Madera and Chowchilla and provides emergency medical service to the unincorporated, valley areas of the County. Pistoresi has eight licensed ambulances and one operations support vehicle. Four paramedic units are staffed seven days a week 24 hours per day and one paramedic unit is staffed 12 hours per day Monday through Friday. Also, one basic life support ambulance that provides non-emergency transports is staffed Monday thru Friday from 9 a.m. to 6 p.m. The two remaining ambulances are reserve units (Pistoresi, pers. comm., 2005).

Pistoresi Ambulance responds to approximately 7,500 calls per year and is not required to have a mandated response time. Nonetheless, the services goal is to meet guidelines that have been established for Fresno County (Pistoresi, pers. comm., 2005). The Fresno County Fire Protection District emergency response standard is five minutes in commercial and residential areas near Fresno and Clovis and 20 minutes in rural areas.

Madera Community Hospital, located at 1250 East Almond Avenue, approximately 6.4 miles south of the Madera site, is the emergency facility that serves the City of Madera and vicinity.

North Fork Site

Sierra Ambulance provides paramedic ambulance service to communities in eastern Madera County, including portions of Yosemite National Park and the Sierra National Forest. The area of service includes over 1,000 square miles and a population of approximately 30,000. The company operates 3 paramedic ambulances stationed in Oakhurst, Coarsegold, and Bass Lake. Sierra Ambulance has a staff of approximately 25 persons including paramedics, EMT-1's, a field supervisor, and office staff. In 2004, Sierra Ambulance responded to over 2,800 calls for service

(Sierra Ambulance, 2004). The nearest emergency rooms are St. Agnes Medical Center and Kaiser Permanente Fresno Medical Center in Fresno, California. St Agnes Medical Center is located at 1303 E Herndon Avenue, 42 miles southwest of the North Fork site. The Kaiser Permanente Fresno Medical Center is located at 7300 North Fresno Street, 40 miles southwest of the North Fork site.

3.9.6 SCHOOL SERVICES

Public education services were provided to 27,821 students during the 2004-2005 school year in Madera County. The County operates 67 schools, which are divided into 11 districts.

MADERA SITE

The Madera site is located in the Madera Unified School District (MUSD), which includes 21 schools and serves almost 19,000 students, from kindergarten through adult education (**Appendix R**). The MUSD also has approximately 1,700 employees. **Table 3.9-3** shows information for the district from the 2003-2004 school year. The average class size is 27 students and the student-to-teacher ratio for the District is 20.8:1, compared to 20.4:1 for the County of Madera (California Department of Education, 2005).

In 2004, the Madera Unified School District had a student population of 17,511. The District is currently has been experiencing an increase of 500 students per year, which has slowed recently to 125-150 students per year. Management expects higher student population growth rates to resume when the economy improves. Most of the District's students are in elementary school. To accommodate the current number of students, the elementary and middle schools operate on a year-round system where 4 groups of students stagger their attendance by going to school for 3 months and then having 1 month of vacation.

After several years of high student population growth, MUSD residents passed two school bonds (in 2002 and 2006) which allowed the construction of four elementary schools, one middle school, one high school, renovations at existing schools, and purchase of land for a third high school. The opening of a fifth new school in August 2007 allowed the District to transition from a year-round calendar (which had been implemented because of capacity constraints and high population growth) to a traditional 9-month calendar.

Budget cuts have caused the District to close one school building for the upcoming school year with a capacity of 635 students. Additionally, there are 30 vacant classrooms throughout MUSD facilities. Each classroom can accommodate an average of 25 students. In total, in the 2008-2009 school year the MUSD could potentially accommodate an additional 1,385 students.

The nearest school is Crossroads Christian School, which is approximately 2.5 miles east of the Madera site at 17755 Road 26 in Madera. There are 8 public and private schools located approximately 3.5 to 4 miles from the Madera site.

NORTH FORK SITE

The North Fork site is in the Chawanakee Unified School District. The District has 1,179 students attending 9 schools. There are 3 elementary schools, 2 high schools, 1 alternative school, and one community day school. Staff consists of approximately 70 full-time teachers and 94 classified employees (staff not required to hold teaching credentials). The average class size is 26.3 students and the student-to-teacher ratio for the District is 16.9:1, compared to 20.4:1 for the County of Madera (California Department of Education, 2005).

The nearest school is North Fork Elementary, which is located approximately 2 miles northwest of the North Fork site at 33087 Road 228 in North Fork.

TABLE 3.9-3
2003-2004 SCHOOL INFORMATION FOR MADERA UNIFIED SCHOOL DISTRICT

School (Grade span)	Number of Students	Percent of Fully Credentialed Teachers ¹	FTE ² Admin. ³	FTE Teachers ⁴	Number of Classified Staff ⁵	Pupil Teacher Ratio	Avg. Class Size	Number of Students Per Computer
Adams (John) Elementary	901	97.7	2	43	15	21.0	21.9	6.7
Alpha Elementary	881	97.9	2	45.5	34	19.4	22.0	5.6
Berenda Elementary	942	97.7	1	42.9	18	22.0	23.0	4.4
Dixieland Elementary	301	100.0	1	15	8	20.1	21.5	2.3
Eastin-Arcola Elementary	763	100.0	2	38	38	20.1	21.8	4.5
Furman (Duane E.) High	281	100.0	0	10.8	3	26.0	25.5	5.7
Howard Elementary	499	95.5	1	22	16	22.7	25.0	4.5
Jefferson (Thomas) Middle	1,004	100.0	3	45	45	22.3	29.1	3.9
King (Martin Luther, Jr.) Middle	1,046	96.0	3	48.4	35	21.6	28.1	3.5
La Vina Elementary	305	100.0	1	17	16	17.9	20.3	2.6
Lincoln Elementary	906	100.0	2	44	13	20.6	22.6	4.7
Madera High	3,999	87.8	11	178.6	123	22.4	29.6	4.9
Madison Elementary	878	100.0	2.5	41.5	11	21.2	22.5	5.8
Millview Elementary	980	89.6	2	46.9	36	20.9	22.5	6.2
Monroe (James) Elementary	975	100.0	2	48.4	28	20.1	22.2	6
Mountain Vista High	248	75.0	1	12	7	20.7	22.3	3.9
Ripperdan Elementary	245	83.3	1	12	9	20.4	21.1	2.6
Sherman Thomas Charter	165	88.9	1	8.2	4	20.1	19.9	4.7
Sierra Vista elementary	983	100.0	2	46.7	27	21.0	23.4	4.1
Washington (George) Elementary	945	93.6	2	45.7	30	20.7	22.0	5.4
District total	17,247	94.8	59.1	827.4	734	20.8	27.0	4.6
County total	27,188	95.0	129.9	1,330.1	1,434	20.4	26.3	4.9
State total	6,298,774	90.8	23,427.3	297,434.2	286,186	21.2	27.4	5

NOTES: ¹ Percent of teachers who hold a full credential.

² Percentage of time a staff member works represented as a decimal. A full-time person is 1.00, a half-time person is .50 and a quarter-time person is .25.

³ Principals, assistant principals, program directors or coordinators, and other certificated staff not providing direct services to students.

⁴ An employee of the school district who holds a position requiring certification and whose duties require direct instruction to the pupils in the school(s) of that district.

⁵ An employee of a school district, in a position not requiring certification. The data are not collected in a manner that will allow full-time equivalent (FTE) reporting.

SOURCE: California Department of Education, 2005; AES, 2005.

3.10 OTHER VALUES

3.10.1 NOISE

ACOUSTICAL BACKGROUND AND TERMINOLOGY

Noise is often defined as unwanted sound. Pressure variations occurring frequently enough (at least 20 times per second), that the human ear can detect are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, called hertz (Hz).

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable. Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals of pressure) as a point of reference, defined as 0 dB. Other sound pressures are then compared to the reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB. Another useful aspect of the decibel scale is that changes in levels (dB) correspond closely to human perception of relative loudness.

NOISE EXPOSURE AND COMMUNITY NOISE

Community noise is commonly described in terms of the “ambient” noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}) over a given time period (usually one hour). The L_{eq} is the foundation of the Day-Night Average Level noise descriptor, L_{dn} , and shows very good correlation with community response to noise. **Table 3.10-1** contains definitions of acoustical terminology used in this section. **Table 3.10-2** shows examples of noise sources that correspond to various sound levels.

The Day-Night Average Level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighting applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. Additional weight is placed on nighttime readings based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment. L_{dn} -based noise standards are commonly used to assess noise effects associated with traffic, railroad and aircraft noise sources.

TABLE 3.10-1
ACOUSTICAL TERMINOLOGY

Term	Definition
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of noise.
Decibel or dB	Fundamental unit of sound. A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 to 10 p.m.) weighted by a factor of 3 and nighttime hours weighted by a factor of 10 prior to averaging.
L _{dn}	Day-Night Average Sound Level. Similar to CNEL but with no evening weighting.
L _{eq}	Equivalent or energy-averaged sound level.
L _{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.

SOURCE: Beranek, 1998.

TABLE 3.10-2
TYPICAL A-WEIGHTED SOUND LEVELS OF COMMON NOISE SOURCES

Loudness Ratio	Decibels (dBA)	Description
128	130	Threshold of pain.
64	120	Jet aircraft take-off at 100 feet.
32	110	Riveting machine at operator's position.
16	100	Shotgun at 200 feet.
8	90	Bulldozer at 50 feet.
4	80	Diesel locomotive at 300 feet.
2	70	Commercial jet aircraft interior during flight.
1	60	Normal conversation speech at 5 to 10 feet.
1/2	50	Open office background level.
1/4	40	Background level within a residence.
1/8	30	Soft whisper at 2 feet.
1/16	20	Interior of recording studio.

SOURCE: Beranek, 1998.

Existing Noise Environment

Madera Site

Existing traffic noise levels were evaluated using the Sound 2000 Prediction Model. Traffic volumes and speeds of 65 miles per hour along State Route 99 and 50 miles per hour along Golden State Boulevard were entered into the model to estimate noise levels at the proposed location for Alternatives A, B, and C. For Alternative D, traffic volumes and speeds of 35 miles per hour along Mission Drive were entered into the model.

To assess existing noise conditions, current traffic counts and existing geometric conditions data was compiled. Noise level measurements were taken on the Madera site on September 8, 2005. Measurements were conducted during peak hours and while aircraft from the Madera Municipal Airport were in the air. The purpose of the measurements was to evaluate the accuracy of the model in describing traffic noise exposure within the Madera site.

Noise monitoring equipment consisted of an Extech Type 2 sound level meter datalogger. Noise measurements were conducted in terms of the equivalent energy sound level (L_{eq}). Measured L_{eq} values were compared to L_{eq} values calculated (predicted) by the Sound 2000 model. Traffic volumes, truck mix and vehicle speeds were used as inputs to the model. Existing noise level measurements on the Madera site were between 53.2 dBA and 55.1 dBA, which are below the FHWA standards for exterior noise (**Appendix O**).

Madera Municipal Airport is located approximately 1.5 miles south of the Madera site. There are approximately 139 Aircraft operations per day. The airport accommodates business jet and turbojet type aircrafts (no commercial airlines) (AirNav, 2005). Typical approach and departure noise produced by business type aircrafts are presented in the noise study in **Appendix O**. Existing noise measurements were taken while an aircraft was in the air and it was noted that the noise meter would jump to approximately 58.0 to 60.0 dB. Based on the existing noise level analysis and typical aircraft noise pollution, the Madera Municipal Airport does not significantly effect the noise environment on the Madera site.

Adjacent to the north and south of the Madera site there are a few rural residential homes. The residential homes to the south of the Madera site are especially sensitive because a majority of the project traffic will travel north and south on Golden State Boulevard as the traffic flows to and from Avenue 17. Existing ambient noise levels at the nearest receptor were identified to be approximately 63.3 dBA, which is currently below the FHWA standards for exterior noise.

North Fork Site

The North Fork site is located within four miles of the community of North Fork, which has a population of approximately 3,600 area residents. North Fork is located in the Sierra Nevada Mountains adjacent to the Sierra National Forest, about 30 miles south of Yosemite National

Park, and 50 miles north of Fresno. The North Fork site is located on land that is currently in trust for the Tribe with individual trust land surrounding the North Fork site. Ambient noise sampling locations were limited to three on-site rural residential uses. Existing ambient noise levels in the vicinity of the North Fork site were measured to be approximately 39.5 dBA.

3.10.2 HAZARDOUS MATERIALS

INTRODUCTION

Hazardous materials are those materials that may pose a material risk to human health or the environment. These materials are subject to numerous laws and regulations at several levels of government. At the Federal level, human exposure to chemical agents, and in some cases environmental and wildlife exposure to such agents is regulated primarily by four agencies: the EPA, the Food and Drug Administration (FDA), the Occupational Safety and Health Administration (OSHA), and the Consumer Product Safety Commission (CPSC). The CPSC plays a limited role in regulating hazardous substances; it deals primarily with the labeling of consumer products. The FDA also plays a limited role in regulating hazardous substances; it primarily regulates food additives and contaminants, human drugs, medical devices, and cosmetics. In addition to these regulatory agencies, the U.S. Department of Transportation (DOT) regulates the interstate transport of hazardous materials.

Analytical Environmental Services (AES) conducted Phase I Environmental Site Assessments (ESA) for the Madera and North Fork sites in May and September 2005, respectively (**Appendix P**). Updated Phase Is were prepared by AES and the Bureau of Indian Affairs (BIA) for the Madera site in July 2007 and November 2008. The purpose of the Phase I ESAs are to identify Recognized Environmental Conditions (RECs) and hazardous materials involvement that may pose a material risk to human health or to the environment and result in potential cleanup liability on behalf of federal and Tribal governments. The ESAs were performed in conformance with the scope and limitations of the American Society for Testing and Materials (ASTM) Standard Practice E1527-00, E1527-05, and BIA guidelines (620 DM Chapter 2).

EXISTING CONDITIONS

Madera Site

Historically, the Madera site has been used for agriculture and ranching activities. As stated in previous sections of the EIS, the Madera site encompasses seven contiguous parcels with a total area of approximately 305-acres. One of the primary features that signifies past agricultural uses is the presence of several agricultural wells with associated piping and electrical circuit boxes. The wells are located along a dirt access road that crosses the site in a general north to south direction. The agricultural wells and associated circuit boxes are located along the north to south trending road. A majority of the circuit boxes did not appear functional and were in various forms of disrepair. A second access road originates at the southeast corner of the site, next to a

residential structure, barn and corral areas. This access road runs in a general east/west direction. The two roads intersect in the southern/central portion of the site. Several cattle feeders are located near this intersection, which also indicates prior ranching/agricultural activities on the site. Each feeder consisted of a cement foundation with metal chains for feeding collars (**Appendix P**).

There is an approximately 1,400 square foot (sf) residence located on the southeast corner of the site; tenants occupied the residence during the 2005 site visit. In addition to the residence, several ancillary buildings and barn and corral areas are present on the Madera site. The buildings include an approximately 500 sf metal storage building and two approximately 300 sf wood framed storage buildings. The metal storage building is constructed of a corrugated metal roof, metal frame, and concrete foundation. The two approximately 300 sf storage buildings are constructed of wood frame, wood roof and wood post foundations. A barn and corral are located in close proximity to these structures. The buildings and one of the corral areas were being used as storage during the initial site visits. Items that were noted include agricultural and welding equipment, several tractors, vehicles and a boat. An empty 10,000 gallon diesel aboveground storage tank (AST) was present in the corral area during the 2005 site visit. Several 55-gallon drums were located in an area adjacent to the metal storage building. One of the drums contained a mix of rainwater and what appeared to be waste oils, a second drum contained used oil filters from farming equipment, and another drum contained an assortment of used automobile parts. Soil staining and chemical odors were not observed in the area next to these drums.

A representative from the Bureau of Indian Affairs (BIA) accompanied AES during the July 12, 2007 site visit. The conditions noted above did not change during the time between site visits with the exception of the following. The residence was vacant during the 2007 site visit. Several RECs were identified during the 2007 Phase I update including the presence of two five-gallon buckets of waste oils, several empty 55-gallon drums, several unmarked one-gallon containers of suspected paint or paint thinners, and two bags of fertilizers. These materials were located in the metal storage building and in a small corral area next to the storage building. All paints and hydraulic fluids were present in their original one gallon containers. Incidental soil staining was noted next to a five gallon bucket of waste oil inside one of the corral areas. All 55-gallon drums, one gallon paint containers, waste oils, and any additional unmarked containers left on the site were removed on March 14, 2008. All materials were transported to an offsite facility licensed to accept these materials. Federal regulations (40 CFR Chapter I Part 262) require generators and transporters of hazardous waste and owners or operators of hazardous waste treatment, storage, and disposal facilities to use the Uniform Hazardous Waste Manifest form (form 8700-22) and for both inter and intrastate transportation of both hazardous materials and suspected hazardous materials. A Uniform Hazardous Waste Manifest and site photos showing removal activities are included in a 2008 Phase I update (**Appendix P**). Chemical analysis for toxicity and volatility were performed on the waste oils to ensure the liquids did not contain other hazardous materials.

The 55-gallon drums contained non RCRA waste as noted in the 2008 Phase I update. Any residual amounts of liquid within the 55- gallon drums and suspected hazardous materials containers (one and five gallon containers) were also tested for volatility and toxicity. These tests concluded the contents were non hazardous; the drums were subsequently transported to a metal recycler. All materials removed from the site are documented on the hazardous waste manifest (form 8700-22) attached to the Phase I included in **Appendix P**. As a result of the initial soil sampling and public concerns regarding prior agricultural activities, a Limited Phase II Soil Investigation was performed in order to better assess soil conditions on the Madera Site (**Appendix P**). After the cleanup activities were completed, the BIA performed a confirmation site visit on October 29, 2008. One of the on-site pole mounted transformers appeared to have leaked as shown in the Phase I included as **Appendix P**.

As noted above, incidental soil staining was observed in one of the corral areas during site cleanup activities; specifically, areas next to the five gallon buckets of waste oils. The stained soils were subsequently removed and retained for chemical analysis. Areas that would be considered as risk for hazardous materials contamination were identified during the site clean up activities. These areas were used to identify primary soil sampling locations that would be the focus of a more in depth investigation. The stained soils were initially tested for diesel fuel, toxicity, and volatility prior to transportation. The initial laboratory analysis from the samples indicated high levels of diesel fuel and waste oils. These samples were collected in an area where surface staining was observed. Additionally the mixing of pesticides and other materials might have occurred in the areas where staining was observed. Secondary areas were also chosen based on proximity to the access roads and an analysis of historic aerials. Twenty four sampling locations were subsequently chosen.

No evidence of widespread soil contamination was found on the property. Chlorinated pesticides were not detected in any samples collected onsite. Motor oil was detected in eight samples at low concentrations and in a very limited area of shallow soils. With the absence of other indicators of soil contamination such as diesel fuels, gasoline, and gasoline constituents (BTEX), the presence of the waste oils in the concentrations and extent detected do not pose a threat to human health or the environment. Given the sporadic detections and a lack of motor oils at the deeper subsurface areas, it appears the source of motor oil is from incidental spilling during routine agricultural activities. Through natural attenuation, the low levels of motor oils are expected to dissipate over time.

The Phase II ESA recommends excavation and proper disposal of stained soils. The Phase II ESA additionally recommends confirmation soil sampling at the three locations where below surface motor oils were present (**Appendix P**).

North Fork Site

The ESA included a site reconnaissance visit of the site and adjacent properties on February 15, 2005. There are three residential structures located on the North Fork site. One of the structures is comprised of wood framing with a concrete slab foundation; the second and third structures are mobile/modular homes. All residences were occupied at the time of the site reconnaissance visit. Water is supplied to the residences through individual wells. One of the residents reported that her water has an unpleasant taste and odor and that her family no longer consumes the water. A Tribal member not residing on the site reported that there is an oily sheen on the surface of the well water. Title 22 water quality testing was performed in 1998 and 2004; the testing did not check for total petroleum hydrocarbons such as gasoline (TPH-g) and diesel (TPH-d) or other constituents that would cause a sheen to be present on the surface of water. The Phase I ESA recommends collection of soil and ground water samples both up gradient and down gradient with respect to the anticipated groundwater flow direction on the site. The additional TPH-g and TPH-d analysis is recommended prior to initiation of site development. The ESA also recommended samples be analyzed for the presence of volatile organic constituents (VOCs).

PROJECT AREA DATABASE REPORT

Madera Site

A regulatory agency database report was performed to identify locations of past and current hazardous materials involvement. Regulatory agency databases were searched for records of known storage tank sites, known sites of hazardous materials generation, storage, or contamination, or violations pertaining to storage and use of hazardous materials. Databases were searched for sites and listings up to two miles from a point roughly equivalent to the center of Madera site. The environmental database review was accomplished by using the services of a computerized search firm, *Environmental Data Resources, Inc.* (EDR). EDR uses a geographical information system to plot locations of past and/or current hazardous materials involvement. The EDR report was conducted in February 2005 and is included in the Phase I ESAs. A summary of the databases accessed by EDR is listed in **Table 3.10-3**. AES reviewed the database report to determine if any hazardous materials releases have occurred that would affect surface and subsurface conditions on the Madera site. The following paragraph summarizes the findings of the database report.

The Madera site was not listed on any regulatory agency database as having previous or current hazardous materials involvement. The database search located five sites with known history of storage, use, or release of hazardous materials within a one-mile search radius of the Madera site. **Table 3.10-4** summarizes the findings of the database report.

TABLE 3.10-3
DATABASES SEARCHED IN SITE ASSESSMENT

Agency Database	Survey Distance	Sites Identified
Federal Superfund Liens (NPL¹ RECOVERY)	1.75 miles	0
NPL Liens	1.75 miles	0
Hazardous Materials Information Reporting System (HMIRS)	0.75 miles	0
U.S. EPA Emergency Response Notification System (ERNS) List	0.75 miles	0
U.S. EPA RCRA Registered Large and Small Generators of Hazardous Waste (RCRIS-LQG and RCRIS-SQG)	1.0 miles	0
Brownfields Sites (US BROWNFIELDS)	0.25 miles	0
Corrective Action Reports (Corracts)	1.75 miles	0
U.S. Engineering Controls ²	0.50 miles	0
U.S. Institutional Controls ³	0.50 miles	0
Department of Defense Sites (DOD)	1.75 miles	0
CERCIS-NFRAP⁴	1.25 miles	1
Open Dump Inventory (ODI)	1.25 miles	0
Formerly Used Defense Sites (FUDS)	1.75 miles	0
Facility Index System/Facility Registry System (FINDS)	0.75 miles	2
Historical State Hazardous Wastes Sites (Hist Cal-Sites)	1.75 miles	0
California Department of Health Services Bond Expenditure Plan (CA Bond Exp. Plan)	1.75 miles	1
California Waste Discharge System (WDS)	0.75 miles	1
Waste Management Unit Database (WMUDS)	1.25 miles	1
California State Hazardous Wastes and Substances Sites (Cortese)	1.25 miles	1
California Hazardous Material Incident Report System (CHMIRS)	0.75 miles	0
Leaking Underground Storage Tank (LUST) Sites	1.25 miles	1
State Facilities Inventory System (CA FID UST)	1.0 miles	1
State Solid Waste Information System (SWF/LF)	1.25 miles	1
State Spills, Leaks, Investigations, and Cleanups Listing (SLIC)	1.25 miles	1
State Hazardous Substance Storage Container Database (HIST UST)	1.0 miles	1
Statewide Environmental Evaluation and Planning System (SWEEPS UST)	1.0 miles	0
State Proposition 65 Notification Records (Notify 65)	1.75 miles	3
Voluntary Cleanup Program Properties (VCP)	1.25 miles	0
Hazardous Materials Facility and Manifest Data (Haznet)	0.75 miles	6
Drycleaners (DRYCLEANERS)	1.00 miles	0
Emission Inventory Data (EMI)	0.75 miles	0
DTSC's Site Mitigation and Brownfields Reuse Program's EnviroStar Database (ENVIROSTAR)	1.75 miles	2

NOTES: ¹CORRACTS: Corrective Action Report System, a USEPA database of corrective actions taken at a RCRA-regulated site.

²RCRA: Resource Conservation and Recovery Act.

³CERCLIS: Comprehensive Environmental Response, Compensation and Liability Information System.

⁴NFRAP: No further remedial action planned (archived CERCLIS sites).

⁵CORTESE: Based on input from 14 state databases.

⁶RCRIS SQG: Resource Conservation and Recovery Information System small quantity generator. According to Federal guidelines, a SQG produces less than 1,000 kg/month of non-acutely hazardous wastes.

⁷WDS: California Water Resources Control Board Waste Discharge System

SOURCE: EDR Report, 2005.

TABLE 3.10-4
MADERA SITE: OFF-SITE HAZARDOUS MATERIALS

Database	Site Name / Address	Material	Media Affected	Case Status
HAZNET	AICO 17486 Road 23 Madera, CA	Off-specification, aged, or surplus organics	No reported releases or violations	Materials are removed off site for recycling
HAZNET	Madera Municipal Golf Course 23200 Avenue 17 Madera, CA	Aqueous solution with less than 10% total organic residues	No reported releases or violations	Treatment tank
HAZNET	Andrew Tahan. 23783 Avenue 17 Madera, CA	Asbestos containing waste	No reported releases or violations	Disposal/ Land Fill
CA FID UST	Valley Grains Products 23865 Avenue Madera, CA	Not Reported	No reported leaks	Inactive USTs
HAZNET	Valley Grains Products 23865 Avenue Madera, CA	1. Liquids with chromium (VI). 2. Liquids with pH less than 2 with metals. 3. Liquids with halogenated organic compounds	No reported illegal releases or violations	Materials are removed off site to a transfer station
WDS	Valley Grains Products 23865 Avenue Madera, CA	Water	No reported illegal releases or violations	Active
HAZNET	A – Z Manufacturing 17462 Baldwin Street Madera, CA	Oxygenated solvents ¹	No reported releases or violations	Materials are removed off site to a transfer station

NOTES: ¹Acetone, Butanol, Ethyl Acetate

Source: EDR, 2005.

The first site is the AICO site located adjacent to the Madera site at 17486 Road 23. The AICO site is listed on the HAZNET database as producing 0.0208 tons of off-specification, aged, or surplus organics. The organics were taken off-site for recycling.

The second site is the Madera Municipal Golf Course site located approximately 0.30 miles south of the Madera site at 23200 Avenue 17. The Golf Course site is listed on the HAZNET database as having a treatment tank that treats an aqueous solution with less than 10% total organic residues.

The third site is the Andrew Tahan site located approximately 0.45 miles south of the Madera site at 23783 Avenue 17. The Andrew Tahan site is listed on the HAZNET database as producing 2.53 tons of asbestos-containing wastes that were transferred to a landfill.

The fourth site is the Valley Grains Products, Inc. site located approximately 0.75 miles west of the Madera site at 23865 Avenue 18. The Valley Grains Products, Inc. site is listed on three databases including the California Facility Inventory Database (CA FID UST) as the location of

an inactive underground storage tank. The site is listed on the HAZNET database as producing liquids with the following constituents: chromium, pH less than two with metals, and halogenated organic compounds. The site is also listed on the California Water Resources Control Board Waste Discharge System (WDS) database as a facility that has been issued waste discharge requirements by the state. The EDR report identifies the site as an industrial facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, and water pumping. The waste type is classified as process waste, which is waste produced as part of the industrial and manufacturing process. The site is identified as a Category C facility, which is a facility having no treatment systems, such as cooling water dischargers or those who must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds. The EDR report did not list any reported leaks or spills associated with the Valley Grains Products, Inc. site.

The fifth and final site is the A-Z Manufacturing site located approximately 0.75 miles west of the Subject Property at 17462 Baldwin Street. The A-Z Manufacturing site is listed on the HAZNET database as producing 0.1485 tons of oxygenated solvents that are taken off site to a transfer station.

North Fork Site

The North Fork site was not listed on any regulatory agency database for storage, use or release of hazardous materials. The database search located one site within a one-mile search radius with a known history of storage, use, and release of hazardous materials (**Appendix P**). The former North Fork Mill site is located approximately 0.85 miles southwest of the Subject Property at 57839 Road 225. The site was operated as a lumber mill from 1942 to 1994. South Fork Timber Industries was the last operator of the lumber mill. In 1994 the property was donated to the redevelopment agency of Madera County. Pentachlorophenol was used in the dip solution to retard fungal growth on the lumber until its use as a fungicide was discontinued in the 1980's. A wood waste-fired cogeneration plant was operated on site from 1987 to 1994. The facility was fired by wood waste generated in the production of lumber at the sawmill, as well as by wood from outside sources. Ash generated by the co-generation plant was stored on site pending removal and off-site disposal. All equipment and buildings at the cogeneration plant have been entirely removed.

The database report contained a number of alternate names for the former North Fork Mill site. These include Bendix Forrest Products and American Forest Products (AFP). According to the database report the AFP site has been a lumber mill processing plant since 1942. From 1948 until

1968, pine boards were dipped into a preservative to retard staining. Copper 8-quinolinolate (PQ-8) and pentachlorophenol (PCP) were two of the preservatives used. Wastewater generated by the mill and wood waste generated by the cogeneration facility was disposed of to an existing pond system. In 1986 Regional Water Quality Control Board (RWQCB) and California Department of Toxic Substances Control (DTSC) sampled water in an area near dip pond #2. PCP and 2, 3, 4, 5- tetrachlorophenol were detected at 6 µg/L. AFP is currently operating on a Waste Discharge Requirement Permit under RWQCB oversight. RWQCB currently monitors the pond and any discharge to the nearby creek.

TABLE 3.10-5
NORTH FORK SITE: OFF-SITE HAZARDOUS MATERIALS

Database	Site Name / Address	Material	Media Affected	Case Status
VCP	Former North Fork Mill Site 57839 Road 225 North Fork, CA	Not Reported	Soil and Groundwater	Not Reported
CERCLIS- NFRAP	Dinuba Timber Inc North Fork 57839 Road 225 North Fork, CA	Not Reported	Not Reported	Archived 7/20/1990
State LUST	Dinuba Timber Inc North Fork 57839 Road 225 North Fork, CA	Diesel	Soil	Case Closed 10/27/1987
HAZNET	Dinuba Timber Inc North Fork 57839 Road 225 North Fork, CA	1. Asbestos containing waste 2. Waste oil and mixed oil 3. Liquids with PCBs	No reported violations	1. Removed to landfill waste 2. Removed off site for recycling 3. Incinerated
HIST UST	Dinuba Timber Inc North Fork 57839 Road 225 North Fork, CA	Diesel, waste oils, and unleaded gasoline	NA	Not Reported
State LUST	Sequoia Forest Products 57839 Road 225 North Fork, CA	Gasoline	Groundwater	Active

Source: EDR, 2005

The former North Fork Mill site is listed on the Federal Brownfields database as a targeted site that will undergo assessments. A Brownfield property is real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. The site is also listed on the CERCLIS-NFRAP database as Dinuba Timber, Inc., North Fork site. CERCLIS-NFRAP assessment history listed in the database report identifies the site as being archived in 1990. The former mill site is also listed as a small quantity generator with no violations. The former mill site is also listed on the Leaking Underground Storage Tank (LUST) database as a closed case. Soils were excavated and treated to remove diesel fuels from soil. The former mill site is also listed on the HAZNET database as having produced 1.68 tons of asbestos-containing waste that were removed off site to a landfill. The former mill site also produced 3.336 tons of waste oil and mixed oils that were removed off

site and recycled. The mill is also listed on the State Historical Underground Storage Tank (HIST UST) database as the site of 14 USTs. The USTs were used for unleaded gasoline, diesel fuel, and waste oils. The tanks ranged in size from 300 gallons to 14,000 gallons (**Appendix P**).

In the late 1990's and over a period of about two years, USEPA representatives completed soil assessment related activities at the site. As a result of the work, and other recent assessment work, pentachlorophenol has been identified in site soils, and diesel and other fuels have been identified in groundwater. In 2003, Madera County was the recipient of a Brownfields Assessment Grant from the USEPA. This grant is intended to provide the funds necessary for completing needed assessment work at the North Fork Mill site. The Regional Water Quality Control Board (RWQCB) is overseeing assessment work associated with the diesel and other fuels in groundwater at the site. A pending Voluntary Cleanup Agreement (VCA) with Madera County includes provisions for the Department of Toxic Substances Control (DTSC) to provide review and oversight of other assessment-related activities for the former mill site. These include a remedial investigation, risk assessment, and a feasibility study. Madera County received a \$200,000 assessment grant from the USEPA. Madera County plans to complete a Remedial Investigation, Health-Based Risk Assessment, and Feasibility Study. A provision for the Department of Toxic Substances Control (DTSC) to provide oversight is included in the VCA.

The former North Fork mill site is located more than 0.5 miles from the North Fork Rancheria and down gradient with respect to the anticipated groundwater flow direction. It is therefore not likely that contaminants migrated such a distance and affected subsurface conditions on the Subject Property.

3.10.3 VISUAL RESOURCES

MADERA SITE

The Madera site is located in a rural, agricultural area on the outskirts of the City of Madera in unincorporated Madera County. The Madera site is undeveloped except for a ranch house and barn complex located on the site's southeastern corner. The Madera site is used for agriculture, rural residential and open space purposes. The only public viewpoints of the Madera site are from surrounding roadways. The views from Road 23, Avenue 18, Golden State Boulevard, and State Route 99 (SR-99) are relatively unobstructed. The topography of the project site is level, with above-ground power lines present through the center of the site. The site is vegetated with agricultural crops and very few trees are present except in the vicinity of the ranch complex. The site is bounded on the north by Avenue 18, rural residential land, light industrial land, and vacant land; on the east by Golden State Boulevard and SR-99; on the south by agricultural and rural residential land; and on the west by Road 23 and agricultural land. The Madera site is not visible from any local or State-designated scenic corridors.

NORTH FORK SITE

The North Fork site is located in a rural area in unincorporated Madera County near the Community of North Fork. The North Fork site is currently utilized for rural residential purposes. The topography of the North Fork site is mountainous, with slopes of approximately 25% from the site's eastern to western border. Vegetation on the site consists primarily of mixed oak/conifer woodlands. There are no public viewpoints of the North Fork site. The North Fork site is surrounded by rural residential land uses; it is not visible from any local or State designated scenic corridors.

SECTION 4.0

ENVIRONMENTAL CONSEQUENCES

SECTION 4.0

ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This section describes the environmental consequences that would result from the development of the alternatives. The analysis presented in this section has been prepared in accordance with the Council on Environmental Quality's (CEQ) National Environmental Policy Act (NEPA) Regulations Section 1502.16. The direct environmental effects of each alternative are provided under the resource headings described in **Section 3** and listed below. This section also provides analysis of cumulative, indirect, and growth-inducing effects.

Section	Resource Area/Issue
4.2	Land Resources
4.3	Water Resources
4.4	Air Quality
4.5	Biological Resources
4.6	Cultural and Paleontological Resources
4.7	Socioeconomic Conditions and Environmental Justice
4.8	Resource Use Patterns
4.9	Public Services
4.10	Other Values
4.11	Cumulative Effects
4.12	Indirect and Growth-Inducing Effects

4.1.1 DETERMINATION OF SIGNIFICANCE

CEQ Regulations for Implementing NEPA (40 CFR 1508.27) define significance of effects in terms of context and intensity, as indicated below.

- (a) *Context.* This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon

- the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.*
- (b) *Intensity. This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:*
- (1) Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.*
 - (2) The degree to which the proposed action affects public health or safety.*
 - (3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.*
 - (4) The degree to which the effects on the quality of the human environment are likely to be highly controversial.*
 - (5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.*
 - (6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.*
 - (7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.*
 - (8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.*
 - (9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.*
 - (10) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.*

Significance criteria are more precisely defined in standard practices, environmental compliance criteria, or in the statutes or ordinances of the jurisdictional entities. Thus, Bureau of Indian Affairs (BIA) and National Indian Gaming Commission's (NIGC) determination of significance of impacts is accomplished with the assistance of governmental entities that have jurisdiction or special expertise for each resource. While some other entities or consultants may also possess special expertise for assessing impacts to key resources, BIA is particularly interested in the unique aspects of special expertise offered by the governmental entities in the locality of the

occurrence of impacts. Thus, the BIA's and NIGC's determination often uses the standard practices and criteria already established by those entities prior to the preparation of the EIS.

4.1.2 JURISDICTION AND SPECIAL EXPERTISE

Consistent with 40 CFR 1508.27, the BIA identified several parties having jurisdiction and/or special expertise regarding the proposed project. These entities have the role of assisting the BIA and NIGC in the determination of significant impacts for the alternatives for areas within their jurisdiction and/or area of special expertise. These agencies have either agreed to serve as NEPA cooperating agencies, to comment on the Environmental Impact Statement (EIS) or to otherwise provide consultation in the analysis process.

4.2 LAND RESOURCES

This section identifies the environmental and safety impacts of the Proposed Project alternatives related to the existing Land Resources identified in **Section 3.2**. The general topics considered here include topography, soils, seismicity and mineral resources. Mitigation Measures are discussed in **Section 5.2.1**.

4.2.1 ALTERNATIVE A – PROPOSED PROJECT

TOPOGRAPHY

Development of Alternative A would result in localized alterations to the topographical characteristics of the Madera site. 200,000 cubic yards of fill material excavated during construction of stormwater detention basins would be incorporated into the site grading. The overall topography of the Madera site, however, would remain essentially unchanged.

Usage of on-site wells for Alternative A would result in the lowering of the water table, at least locally, potentially resulting in land subsidence, which is a problem in some parts of the San Joaquin Valley, particularly in the western portions of the valley. Much of the subsidence in the San Joaquin Valley occurred during periods of increasing groundwater demand and decreasing groundwater levels from the 1920s to the 1970s. Since the 1970s, outside of prolonged years of statewide drought, ground subsidence has generally stopped or continued at a much lower rate due to increased surface water deliveries (USGS, 2009). Most of the areas in which high rates of subsidence have occurred are along the western edge of the San Joaquin Valley, which is underlain by the Corcoran Clay, which is the major regional aquitard that separates the western San Joaquin Valley's confined aquifer from the eastern valleys unconfined aquifer system (Komex, 2006 – **Appendix L**).

Fairly minimal ground subsidence of up to approximately one foot has been documented west of the City of Madera in the vicinity of the Madera Ranch, despite the fact that the area has been subject to extensive groundwater pumping from both above and below the Corcoran Clay over the last 100 years. No subsidence affected area is known or expected to exist in the vicinity of the Madera site. Given the relative resistance to subsidence of the nearby Madera Ranch area and the fact that the Madera site is underlain by an unconfined aquifer system, which is less susceptible to pumping induced subsidence, significant ground subsidence is not expected to be associated with the proposed project (Komex, 2006 – **Appendix L**).

Given that grading of the Madera site would not result in noticeable changes to topography and additional subsidence is not expected, Alternative A would not have a significant impact upon Madera site topography.

SOIL

The soils at the Madera site range from poorly drained to excessively drained, with generally moderate erosion hazards. The Grading and Drainage plan described in **Section 2.0** outlines several best management practices (BMPs), including the development of an erosion control plan, that would address and reduce erosion hazards. As such, the design and buildout of Alternative A would not significantly affect soils on the Madera site.

Landslide Hazards

Since the Madera site is flat and level, no impact associated with landslide hazards would occur. Moreover, the BMPs outlined for erosion control would also diminish the slide hazards localized around drainages and detention basins.

SEISMICITY

Section 3.2 identifies the probability for a seismic event to cause destructive ground acceleration at the Madera site. The nearest seismic hazard is the San Andreas Fault, located approximately 40 miles southwest of the Madera site. As discussed in **Section 3.2**, the Madera site is shown by the United States Geological Survey (USGS) to lie within an area anticipated to be subject to 0.2g to 0.3g maximum peak acceleration, with a 2% chance of exceedance in 50 years. The hazards to public safety related to seismically induced structural failure would be considered a potentially significant impact. Mitigation measures related to seismicity on the Madera site appear in **Section 5.2**. Adoption of the mitigation will reduce seismicity impacts to a less than significant level.

Soil Liquefaction

Due to the coarse, grainy composition of soils on the Madera site, the risk for soil liquefaction is low. Therefore, no significant impact related to liquefaction would occur during a seismic event.

Seismically Induced Flooding

No dams or water bodies above grade exist in the vicinity of the Madera site. Therefore, no impact related to seismically induced flooding would occur under Alternative A.

MINERAL RESOURCES

Alteration in the land use under Alternative A would not result in a loss of economically viable aggregate rock or diminish the extraction of important ores or minerals. Because there are no known or mapped mineral resources within the project area, development and use of the land would not be affected by such resources. There are no abandoned mines, shafts, or tailing that would affect development. Therefore, no impact related to mineral resources would occur as a result of this alternative.

4.2.2 ALTERNATIVE B – REDUCED INTENSITY

TOPOGRAPHY

Buildout of Alternative B would be similar in footprint to that for Alternative A, though at a reduced scale. Construction would therefore entail localized alterations to the topographical characteristics of the Madera site. Surface grading for facilities would incorporate the use of approximately 170,000 cubic yards of fill material obtained on-site by the excavation of detention basins. The overall topography of the Madera site, however, would remain unchanged. Subsidence effects would be lessened when compared to Alternative A due to the lower water demands of Alternative B. As such, buildout of Alternative B would not have a significant impact upon Madera site topography.

SOIL

As stated above, the soils at the Madera site range from poorly drained to excessively drained, with generally moderate erosion hazards. The Grading and Drainage plan described in **Section 2.0** outlines several best management practices (BMPs), including the development of an erosion control plan, that would address and reduce erosion hazards. As such, the design and buildout of Alternative B would not significantly affect soils on the Madera site.

Landslide Hazards

Since the Madera site is flat and level, no impact would occur associated with landslide hazards. Moreover, the BMPs outlined for erosion control would also diminish slide hazards localized around drainages and detention basins.

SEISMICITY

The seismic conditions, hazards and impacts related to Alternative B are similar to those identified for Alternative A, above. As with Alternative A, the hazards to public safety related to seismically induced structural failure would be considered a potentially significant impact. Mitigation measures related to seismicity on the Madera site appear in **Section 5.2**. Adoption of the mitigation will reduce seismicity impacts to a less than significant level.

Soil Liquefaction

Due to the coarse, grainy composition of soils on the Madera site, the risk for soil liquefaction is low. Therefore, no significant impact related to liquefaction would occur during a seismic event.

Seismically Induced Flooding

No dams or water bodies above grade exist in the vicinity of the Madera site. Therefore, no impact related to seismically induced flooding would occur under Alternative B.

MINERAL RESOURCES

Alteration in the land use under Alternative B would not result in a loss of economically viable aggregate rock or diminish the extraction of important ores or minerals. As with Alternative A above, there are no abandoned mines, shafts, or tailing that would affect development. Therefore, no impact related to mineral resources would occur as a result of this alternative.

4.2.3 ALTERNATIVE C – NON-GAMING USE

TOPOGRAPHY

Buildout of the proposed project under Alternative C would entail similar alterations to the topographical characteristics of the Madera site as for Alternative A and Alternative B, although at a lower scale. As such, buildout of Alternative C would not have a significant impact upon Madera site topography.

SOIL

As stated above, the soils at the Madera site range from poorly drained to excessively drained, with generally moderate erosion hazards. The Grading and Drainage plan described in **Section 2.0** outlines several BMPs, including the development of an erosion control plan, that would address and reduce erosion hazards. As such, the design and buildout of Alternative C would not significantly affect soils on the Madera site.

Landslide Hazards

Since the Madera site is flat and level, no impact would occur associated with landslide hazards. Moreover, the BMPs outlined for erosion control would also diminish slide hazards localized around drainages and detention basins.

SEISMICITY

The seismic conditions, hazards and impacts related to Alternative C are similar to those identified for Alternatives A and B. As with Alternative A, the hazards to public safety related to seismically induced structural failure would be considered a potentially significant impact. Mitigation measures related to seismicity on the Madera site appear in **Section 5.2**. Adoption of the mitigation will reduce seismicity impacts to a less than significant level.

Soil Liquefaction

Due to the coarse, grainy composition of soils on the Madera site, the risk for soil liquefaction is low. Therefore, no significant impact related to liquefaction would occur during a seismic event.

Seismically Induced Flooding

No dams or water bodies above grade exist in the vicinity of the Madera site. Therefore, no impact related to seismically induced flooding would occur under Alternative C.

MINERAL RESOURCES

Alteration in the land use under Alternative C, as under Alternatives A and B above, would not result in impacts to mineral resources.

4.2.4 ALTERNATIVE D – NORTH FORK LOCATION

TOPOGRAPHY

The preliminary grading plan (**Appendix K**), calls for cutting out a building pad in the middle of the site and creating soil stabilization areas on all sides of the pad at a slope of 2 to 1. Buildout of Alternative D would entail the use of approximately 600,000 cubic yards of displaced or imported fill material to provide a surface appropriate for construction, as well as to construct stormwater detention basins. This would be a localized alteration and the general topographical character of the region would remain unchanged. Ground subsidence from groundwater pumping generally does not occur in fractured rock aquifers like those that underlie the North Fork site. Creation of soil stabilization areas with a slope of 2:1 would not lead to slope instability unless they are improperly designed without erosion control measures, in which case a potentially significant impact would result. Mitigation measures are included in **Section 5.2.1** that would ensure impacts are less than significant.

SOIL

The soils on the North Fork Rancheria are of the Holland-Chaix and Auberry-Ahwahnee association, and subject to erosion due to the inclines found on and around the North Fork site. The Grading and Drainage plan described in **Section 2.0** outlines several Best Management Practices (BMPs), including the development of an erosion control plan, that would address and negate erosion hazards. As such, the design and buildout of Alternative D would not significantly affect soils on the North Fork site.

Landslide Hazards

While the North Fork site is surrounded by inclined ground surfaces, the Grading and Drainage Plan described in **Section 2.0** includes the incorporation of BMPs for compaction and erosion control that would also negate slide hazards around building and parking features, drainages and detention basins. Therefore, landslide-related impacts as a result of Alternative D would be less than significant.

SEISMICITY

The North Fork Rancheria is approximately 80 miles northeast of the San Andreas Fault. Another fault system created by the continual uplift of intrusive igneous matter exists approximately six miles to the northeast of the North Fork site. The North Fork site is shown by the United States Geological Survey (USGS) to lie within an area anticipated to be subject to 0.3g to 0.4g maximum peak acceleration, with a 2% chance of exceedance in 50 years. The hazards to public safety associated with potential structural failure under these conditions would be considered a significant impact. Mitigation appears in **Section 5.2**. Adoption of the mitigation will reduce seismicity impacts to a less than significant level.

Soil Liquefaction

Due to the coarse composition of soils and reduced potential for significant seismic events on the North Fork site, the risk for soil liquefaction is low. Therefore, no significant impact related to liquefaction would occur under this alternative.

Seismically Induced Flooding

No dams or water bodies above grade exist in the vicinity of the North Fork site. Therefore, no impact related to seismically induced flooding would occur under Alternative D.

MINERAL RESOURCES

Alteration in the land use under Alternative D would not result in a loss of economically viable aggregate rock or diminish the extraction of important ores or minerals. There are no abandoned mines, shafts, or tailing that would affect development. Therefore, no impact related to mineral resources would occur as a result of this alternative.

4.2.5 ALTERNATIVE E – NO ACTION

Under the No Action Alternative, no development would take place on the project site or on the Alternative site. For the purposes of the environmental analysis in this EIS, it is assumed that the use of the Madera site would not change under this alternative. Therefore, no impact would occur under Alternative E.

4.3 WATER RESOURCES

4.3.1 ALTERNATIVE A – PROPOSED PROJECT

SURFACE WATER

Executive Order 11988 requires that Federal agencies determine whether a proposed action will occur in a floodplain. If an agency proposes to allow an action to be located in a floodplain, “the agency shall consider alternatives to avoid adverse effects and incompatible development in the floodplains.” If the only practicable alternative action requires siting in a floodplain, the agency shall “minimize potential harm to or within the floodplain.”

The Madera site is located almost completely within a Federal Emergency Management Agency (FEMA) defined 100-year floodplain (**Figure 3.3-2**). Based on the current FEMA Flood Insurance Rate Map (FIRM) (Panel No. 0601700605B and Panel No. 0601700600B) the site is located in Zone AO, with an average flood depth of one foot. Zone AO is designated as “the flood insurance rate zone that corresponds to the areas of 100-year shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet.” Due to the size of the development proposed under Alternative A, elevating structures is not practicable. It would be extremely costly and would gain little benefit to the floodplain due to the relatively shallow depth of the 100-year flood in the area.

Projects encroaching within a 100-year floodplain are required by FEMA to be constructed a minimum of 1.0 foot above the estimated floodplain elevation (**Section 2.2.5**). The Grading and Drainage Plan (**Appendix K**, Figure 4) incorporates fill to elevate the finished floor of the proposed gaming facility and hotel approximately five feet above the FEMA 100-year floodplain. As noted in **Section 2.2.8**, well facilities would be elevated at least three feet above the FEMA 100-year floodplain. Earth from the detention basin excavation would be incorporated as fill material. Thus, effects to building structure and patron safety during a flood event would be less than significant.

Alternative A creates a potentially negative impact to the floodplain and the severity of flooding in the area in two different ways:

1. The loss of floodplain storage created by the encroachment of the facility, parking lots, treatment plant, wastewater storage basin, and stormwater detention basins into the floodplain, and
2. The increase in stormwater runoff created by the new impervious surfaces.

Impacts to floodplain storage occur when development displaces area that could be used for storage of flood waters during a flooding event. The runoff characteristics of a watershed are altered when impervious surfaces replace natural vegetation preventing infiltration into the soil. Runoff changes may increase stream volumes, increase stream velocities, increase peak

discharges, shorten the rate of peak flows, and decrease groundwater contributions to stream base flows during non-precipitation periods. Utilizing the FIRM-estimated depth of flooding in the vicinity of the Madera site of 1.0 feet results in a displaced flood storage volume of 53.5 acre-feet.

Under Alternative A, 45.26 acres of site improvements would be constructed, including the casino, other buildings, parking lots, and internal roads. Runoff from new impervious surfaces would result in a stormwater runoff volume of 102.4 acre-feet. This surface water increase has the potential to cause downstream flooding, and without mitigation would be a significant impact.

Alternative A includes the construction of a storm drainage system to manage stormwater flow. As described in **Section 2.2.6**, the drainage system would primarily consist of inlets and underground drainage pipes. However, an overland drainage would be created for the project to allow the site to drain under overflow conditions. The overland drainage release would be around the perimeter of the site and is shown in Figure 5 of **Appendix K**.

Grassy swales would convey the stormwater to a series of three stormwater detention basins that would be constructed to eliminate downstream stormwater impacts (**Appendix K**, Figure 4). The three detention basins would encompass a surface area of approximately 39 acres with a combined storage capacity of 105 acre-feet (af). The 100-year storm runoff would fill the detention basins to a depth of approximately 3 feet.

Although the proposed development of Alternative A reduces flood storage and increases runoff and peak flow rates, the proposed detention basins mitigate for the loss of flood storage and temporarily store the stormwater runoff to limit the peak flow. The peak flow from the detention basins would be metered through the designed metering structures to pre-project levels. A preliminary plan showing the location of the detention basins is included in **Appendix K** (Figure 4). Since a loss of flood-storage would not occur and post-project runoff and flow rates would equal pre-project levels with the detention basins, impacts to flooding would be less than significant. Nonetheless, mitigation measures are included in **Section 5.2.2** that would further reduce impacts from flooding.

Groundwater occurs at a depth of approximately 140 feet below the ground surface in the vicinity of the Madera site. Thus, there is no known hydrologic connection between groundwater and surface water in this area and significant impacts to surface water resources would not occur as a result of project groundwater pumping.

GROUNDWATER

Water for domestic use, emergency supply, and fire protection would be provided by on-site groundwater wells or by the City of Madera, as described in **Section 2.2.8**. Given nearby high

capacity wells, historic high capacity on-site agricultural wells, and the known characteristics of the San Joaquin Valley Groundwater Basin (see **Appendix L**), an on-site groundwater well would be able to supply the water demanded by Alternative A (see **Section 2.2.8**). As described in **Section 2.2.8**, the primary water supply for Alternative A would be provided by an on-site well whether or not a looped system with the City of Madera is created. Under the on-site system option an on-site water supply well, an on-site redundancy/maintenance well, and an on-site storage tank would be developed. Under the City of Madera loop option an on-site water supply well, an off-site redundancy/maintenance/fire flow well (existing City Well No. 26), required off-site piping, and, if necessary, an on-site storage tank would be developed. Impacts to groundwater would be the same for either the on-site system option or the City of Madera looped system option because the primary water supply well would be located on the Madera site for both options.

Groundwater recharge through the Madera Irrigation District (MID) may not be sufficient to compensate for drawdown effects caused by on-site pumping. Adjacent groundwater wells may also be impacted by a lowered table.

To provide an adequate water supply for the development of Alternative A, any wells constructed on-site would be at least 600 feet deep and would have an average water supply capacity of either approximately 400,000 gpd / 278 gpm (no water recycling) or approximately 270,000 gpd / 190 gpm (with water recycling) (see **Section 2.2.8** and **Appendix I**).

Drawdown of the water table from the project in combination with an ongoing groundwater basin decline caused mainly by agricultural pumping could shorten the lifespan of neighboring wells. Baseline groundwater basin water table declines are more rapid during dry or critically dry years (although they may be less rapid during especially wet years). At the property boundary, the predicted drawdown caused by Alternative A pumping would be 6.4 feet (if water is recycled) or 9.3 feet (if water is not recycled) (Komex, 2008 – **Appendix L**). However, no off-site wells are located at the property boundary, thus drawdown to neighboring wells would be less than 9.3 feet. Analysis of the drawdown curves shows that all of the known off-site wells located within a two-mile radius (estimated at 259 wells – see **Appendix L**) of the Madera site would experience some drawdown effects from proposed pumping on the site. For Alternative A, the drawdown effects would range from 1.5 feet to 7.2 feet without recycling and 1.0 feet to 4.9 feet with recycling. Reductions in the life of wells would not exceed 3 years among smaller wells within two miles of the site (effects would be negligible to larger wells and wells more than two miles from the site).

The Tribe has agreed in a Memorandum of Understanding (MOU) with the MID to recharge at least as much water that would be pumped under Alternative A in nearby MID recharge areas. This recharge would alleviate regional impacts of the pumping (see **Section 4.11** for further analysis of these cumulative impacts) but would not occur on-site and would therefore not completely eliminate the cone of depression and resulting drawdown that would occur in

neighboring wells. Thus, a minimal, less than significant effect to neighboring wells from on-site groundwater pumping would remain. Nonetheless, mitigation measures to reduce impacts to neighboring wells from groundwater drawdown are provided in **Section 5.2.2** of this document.

WATER QUALITY

Construction Impacts

Project construction would result in ground disturbance, which could lead to erosion. Erosion can increase sediment discharge to surface waters during storm events. Project construction also has the potential to discharge other construction-related materials (concrete washings, oil, and grease) onto the ground and then into nearby surface waters during storm events. Construction would involve the use of diesel-powered equipment and would likely involve the temporary storage of fuel and oil on-site. Discharges of pollutants to surface waters from construction activities associated with development of Alternative A could result in significant impacts to water quality.

Discharges of stormwater from construction activities on the Madera site would be regulated by the U.S. Environmental Protection Agency (USEPA) National Pollutant Discharge Elimination System (NPDES) storm water program and would require coverage under the Phase II General Permit for Storm Water Discharges from Construction Activities (Construction General Permit). Under the Construction General Permit, a Notice of Intent (NOI) must be submitted to the USEPA at least seven days prior to commencement of construction. In accordance with the requirements of the General Permit, the Tribe must prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) to control discharge of the pollutants in stormwater. This plan would be kept on-site and would be available for review by the USEPA upon request. It would also include an inspection and monitoring section consistent with the requirements of the NPDES program. The plan would incorporate appropriate best management practices (BMPs) to prevent erosion and subsequent surface water degradation during construction activities. These measures typically include the use of silt fences, fiber rolls, vegetated swales, and construction entrances and exits stabilized with crushed aggregate.

Compliance with USEPA requirements would ensure impacts to water quality during construction would be less than significant. Nonetheless, see **Section 5.2.2** for a list of recommended mitigation measures, including recommended BMPs for incorporation into a SWPPP.

Operational Impacts

Stormwater Runoff

Stormwater runoff during long term casino operation could affect surface water quality. Runoff from project facilities, especially surface parking lots, could flush trash, debris, oil, sediments, and grease into downstream surface waters, impacting water quality. Fertilizers and other

chemicals used in landscaping areas could also result in impacts to water quality if allowed to enter nearby surface waters. Unimpeded, this runoff would result in a significant impact.

Site planning includes minimization of impermeable surfaces. In addition, the project would be designed to incorporate two main structural BMPs: the stormwater detention basins described previously, and the use of sediment/grease traps. The purpose of the structural BMPs is to control and reduce total suspended solids (TSS), oils and greases, nutrients, metals, and other potentially environmentally polluting minerals or materials from being released to downstream surfaces.

The sediment/grease traps would be designed to comply with Federal stormwater treatment guidelines to reduce TSS in post-construction stormwater runoff as described in the USEPA National Management Measures Guidance to Control Nonpoint Source Pollution from Urban Areas (USEPA 842-B-02-003). This guidance document indicates that a reduction of TSS also controls heavy metals, phosphorous, and other pollutants. A summary of the pollutant reduction efficiencies is listed in **Table 4.3-1**. As shown, inlets affixed with a sediment/grease trap would remove 28 – 80 percent of pollutants from stormwater. In addition, stormwater would be routed to detention basins, which would further diminish pollutant concentrations in the stormwater (**Table 4.3-1**).

TABLE 4.3-1
ESTIMATED STORMWATER QUALITY – ALTERNATIVE A

Pollutant	Anticipated Level in Stormwater (mg/L) ^a	Stormceptor Reduction Efficiency ^b	Detention Basin Reduction Efficiency ^c	Estimated Minimum Reduction Efficiency	Anticipated Discharge Pollutant Level (mg/L) ¹
Total Suspended Solids	80	80%	30-65%	80%	16
Total Petroleum Hydrocarbon	3.5	80%	N/A	80%	0.70
Total Nitrogen	2	43%	15-45%	43%	<2
Zinc	0.14	39%	15-45%	39%	<0.1
Copper	0.01	28%	15-45%	28%	<0.01
Lead	0.018	51%	15-45%	51%	<0.01

NOTES: ¹ Filtered stormwater would be transferred to a detention basin (which would be managed to further reduce the water's pollutant concentration) before being discharged to surface waters.

SOURCE: ^a National Management Measures to Control Nonpoint Source Pollution from Urban Areas, USEPA 842-B-02-003, July 2002.

^b Stormceptor-supplied performance studies, 2003.

^c Preliminary Data Summary of Urban Storm Water Best Management Practices, USEPA 821-R-99-02, August 1999.

Since the combination of site planning, structural treatment BMPs and non-structural source control BMPs would be part of the proposed project, the impact of runoff on water quality would be less than significant. Mitigation measures are discussed in **Section 5.2.2** and would further reduce less than significant operational impacts to water quality.

Wastewater

Several wastewater treatment options exist for wastewater treatment and disposal, as described in **Section 2.2.7** and **Appendix I**. Wastewater treatment may occur at the City of Madera wastewater treatment plant (WWTP). Recent construction in March 2008 has expanded the plant's capacity from 7 million gallons per day (MGD) to 10.1 MGD. During the recent expansion, the trickling filter system was replaced with an activated sludge system. The treated wastewater is conveyed to percolation beds for disposal. Wastewater at the City of Madera WWTP is treated to State and Federal standards before disposal; therefore, no significant impacts to surface water quality would occur from implementation of off-site wastewater treatment.

Alternatively, wastewater may be treated at an on-site WWTP, located to the west of the casino and hotel (**Figure 2-5**). The exact location of the WWTP would depend on the disposal option chosen. Disposal options are described in **Section 2.2.7**. The WWTP would use an immersed membrane bioreactor (MBR) system to provide tertiary-treated water for reuse or disposal. The MBR is a state-of-the-art system that operates as an activated sludge process run at a high suspended solids concentration. Running at a high suspended solids concentration gives the system the ability to react to wide variations in flows as would be expected at gaming facilities on the weekend or holidays. Experience at the other operating plants demonstrates the ability of the MBR system to consistently produce a high quality effluent. Typical effluent from a MBR process is summarized in **Table 4.3-2**. These concentrations are based on water qualities observed at other similar facilities. A detailed description of the wastewater treatment facility is presented in **Appendix I**.

TABLE 4.3-2
TYPICAL CASINO EFFLUENT WASTEWATER QUALITY

Parameter	Units of Influent
Biochemical Oxygen Demand (BOD)	< 1 mg/L
NH ₄ (Ammonium)	< 0.2 mg/L
NO ₃ (Nitrate)	< 8 mg/L
Total Coliform	> 2.2 MPN/100 mL
Nephelometric Turbidity Units (NTU)	> 0.1

NOTES: mg/L = milligrams per liter
MPN = most probable number
mL = milliliters

SOURCE: HydroScience Engineers, Inc., 2006.

The proposed treatment and disposal facility provides for the use of reclaimed water for casino toilet flushing and landscape irrigation. All water used for reclamation would be of a quality consistent with California Department of Health Services (DHS) regulations under Title 22, Division 4, Chapter 3, of the California Administrative Code, provided in **Table 4.3-3**. Title 22

specifies redundancy and reliability features that would be incorporated into the reclamation plant. Under Title 22 Water Recycling Criteria, the highest level of treatment is referred to as “Disinfected Tertiary Recycled Water.” The proposed plant would produce an effluent meeting the criteria for this highest level of recycled water. Disinfected tertiary-treated recycled water can be used for irrigation of parks, playgrounds, schoolyards, residential landscaping, golf courses and food crops. Additional permitted uses include non-restricted recreational impoundments, cooling towers, fire fighting, toilet flushing and decorative fountains. The water produced by this treatment system is highly treated and poses no health risks for the intended uses.

Treated effluent may be discharged through surface water discharge, spray disposal, sub-surface disposal, or a combination of spray and sub-surface disposal. Projected wastewater discharge rates appear in **Appendix I**. Wastewater discharge options for the on-site WWTP are described below.

TABLE 4.3-3
SUMMARY OF TITLE 22 TREATMENT REQUIREMENTS FOR RECYCLED WATER

Potential Uses	Title 22 Criteria
Landscape Irrigation	
With High Public Contact	Bio-oxidation, coagulation, clarification, filtration, disinfection to limit coliform to 2.2 MPN/100 mL.
With Low Public Contact	Bio-oxidation, disinfection to limit coliform to 23 MPN/100 mL.
Recreational Impoundments	
Non-restricted	Bio-oxidation, coagulation, clarification, filtration, disinfection to limit coliform to 2.2 MPN/100 mL.
Restricted	Bio-oxidation, disinfection to limit coliform to 2.2 MPN/100 mL.
Landscape Impoundments	Bio-oxidation, disinfection to limit coliform to 23 MPN/100 mL.
Industrial uses	
Construction/Dust Control/Soil Compaction	Bio-oxidation, disinfection to limit coliform to 23 MPN/100 mL.
Groundwater Recharge/Seawater Intrusion Barrier	This use shall be considered by the DHS and the RWQCB on an individual case basis where the use of recycled water involves a potential risk to public health; guidelines for this use have been proposed.
Cleaning, Dual Water System (Toilet Flushing and Landscape Irrigation), Firefighting, Wetlands Creation/Restoration	No criteria are listed for any of these uses in existing Title 22. Currently, each of these uses is considered as criteria set by the RWQCB and DHS on an individual case basis. Uses anticipated to be addressed in future revisions to Title 22, which have been circulated for public comment.

NOTES: MPN = most probable number
DHS = Department of Health Services
RWQCB = Regional Water Quality Control Board
mL = milliliters

SOURCE: California Code of Regulations, Title 22, Division 4, 1978, amended 1998.

The USEPA's Office of Ground Water and Drinking Water administers the Source Water Protection Program (authorized by the 1996 amendments to the Safe Drinking Water Act) to prevent contamination to drinking water supplies. The Source Water Protection Program outlines a comprehensive plan to achieve maximum public health protection through inventorying known sources of contamination to drinking water, assessing the threat of such sources of contamination to drinking water, notifying the public about such threats, implementing management measures, and developing contingency plans.

The on-site WWTP would be constructed at least five feet above the floodplain elevation, minimizing the risk of floodwater contamination during a flood event. Storage basins would be bermed above the floodplain elevation and would not contain untreated water. Given that water would be treated to Title 22 standards sufficient for use as reclaimed water, even if it were to mix with flood flows, significant effects to water quality would not occur. Thus the on-site WWTP and proposed treated wastewater storage basins would be compatible with the protection of drinking water sources provided by the Source Water Protection Program. Effects from the various disposal options are discussed below.

Surface Water Discharge- Treated effluent may be discharged into a channelized creek that flows through the Madera site. This creek flows into Dry Creek, and eventually into the Fresno River. The Fresno River is not designated as part of the Regional Water Quality Control Board's (RWQCB) 303(d) listing of impaired water bodies; however, it does flow into the San Joaquin River, which is listed as an impaired water body.

A NPDES permit would be required to discharge wastewater produced on-site to the on-site creek. Since the treatment facilities and point of discharge would be fully contained within trust lands, the NPDES permit would be issued and regulated by the USEPA. Normally, the USEPA sets treatment and discharge requirements in the NPDES permit in accordance with State standards.

The acquisition of an NPDES permit, along with the construction and operation of the proposed MBR WWTP, would ensure that impacts to surface water from the surface water wastewater disposal option would be less than significant.

Spray Disposal- Spray disposal is an evapotranspiration technique in which water is applied to sprayfields at agronomic rates throughout the year. During rain events, sprayfields cannot be used. Therefore, a large seasonal storage basin would be necessary. The location for the WWTP and sprayfields is shown in **Figure 2-5**. Under this option, 29 acres of land in the northwest corner of the Madera site would be used for spray disposal or a recycled water line would transfer treated effluent approximately 1 mile south to the City of Madera golf course. A seasonal storage basin would be located near the WWTP and would hold 43 million gallons (MG) of treated effluent.

The water produced by the MBR treatment system is of high quality and poses negligible health risks for the intended uses. In addition, surface water quality would not be impacted since discharge to surface water bodies would not occur. Implementing Title 22 criteria for recycled water at the Tribe's WWTP would also ensure that groundwater quality is not impacted. Therefore, no significant impacts would occur from implementation of the spray disposal option.

Sub-Surface Disposal- Leachfields are used to dispose of treated wastewater effluent by distributing it underground to infiltrative soil surfaces. Sub-surface disposal requires good percolation and several feet of clearance above the highest groundwater levels. High groundwater does not occur at this site; however, percolation may be limited due to a hardpan layer within the soil. Because effluent would be treated to tertiary levels prior to placement in the leachfields, soil cover over the leachfields can be minimal. The location of the WWTP and leachfields is shown in **Figure 2-5**. A maximum of 78 acres of leachfields would be required for discharge of the entire 270,000 gpd. A seasonal storage basin would have the capacity to hold 4 MG of treated effluent.

The proposed MBR WWTP would produce an effluent meeting the Title 22 criteria for the highest quality of recycled water and poses negligible health risks for the intended uses. Surface water quality would not be impacted since discharge to surface water bodies would not occur and implementation of Title 22 criteria for recycled water at the Tribe's WWTP would ensure that groundwater quality is not impacted. Therefore, no significant impacts would occur from implementation of the sub-surface disposal option for wastewater effluent.

In addition, sub-surface disposal may be considered a Class V injection well under the USEPA's Underground Injection Control (UIC) Program. The USEPA requires that: 1) Class V wells obey the non-endangerment performance standard prohibiting injection that allows the movement of fluids containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation or adversely affect public health; and 2) owners of Class V wells provide inventory information to the USEPA regional UIC Program.

Combination of Surface and Sub-Surface Disposal- Under this option, sprayfields would be used in conjunction with leachfields. The combined area would be approximately 31 acres. A seasonal storage basin would be required to hold 31 MG. The location of the WWTP and combination spray and leachfields is shown in **Figure 2-5**.

Based on the above discussion, the on-site WWTP with discharge from a MBR facility would have a less than significant impact on the quality of surface water and groundwater resources.

4.3.2 ALTERNATIVE B – REDUCED INTENSITY

SURFACE WATER

Alternative B's impacts to flooding would be similar to Alternative A, given the similar footprint of the Alternative B development. As with Alternative A, the Alternative B gaming facility would be raised approximately five feet above the floodplain elevation (**Section 2.3.4**), resulting in a less than significant effect to project structures and patron safety during a flooding event.

The Grading and Drainage Plan would also be implemented for Alternative B (**Appendix K**, Figure 4). See **Sections 2.3.5** and **4.3.1** for further information regarding storm drainage improvements. With incorporation of the Grading and Drainage Plan, impacts to flooding would be less than significant with the implementation of Alternative B. Nonetheless, mitigation measures are included in **Section 5.2.2** that would further reduce impacts from flooding.

Groundwater occurs at a depth of approximately 140 feet below the ground surface in the vicinity of the Madera site. Thus, there is no known hydrologic connection between groundwater and surface water in this area and significant impacts to surface water resources would not occur as a result of project groundwater pumping.

GROUNDWATER

As with Alternative A, groundwater resources would be sufficient to serve the demands of Alternative B, which would require less water for operation. As with Alternative A, primary continuous water supply for Alternative B would be supplied by a privately operated on-site well. Under the on-site system option an on-site water supply well, an on-site redundancy/maintenance well, and an on-site storage tank would be developed. Under the City of Madera loop option an on-site water supply well, an off-site redundancy/maintenance/fire flow well (existing City Well No. 26), required off-site piping, and, if necessary, an on-site storage tank would be developed. Impacts to groundwater would be the same for either the on-site system option or the City of Madera looped system option because the primary water supply well would be located on the Madera site for both options.

At the property boundary, the predicted drawdown caused by Alternative B pumping would be 3.8 feet (water is recycled) or 5.8 feet (water is not recycled) (Komex, 2008 – **Appendix L**). Analysis of the drawdown curves shows that all of the known off-site wells located within a two-mile radius of the Madera site would experience some drawdown effects from proposed pumping on the site. For Alternative B, the drawdown effects would range from 0.9 feet to 4.5 feet without recycling and 0.6 feet to 3.0 feet with recycling. Reductions in the life of wells would not exceed 3 years among smaller wells within two miles of the site (effects would be negligible to larger wells and wells more than two miles from the site). Therefore, a significant effect to neighboring wells from on-site groundwater pumping would not occur. Nonetheless, mitigation measures to

reduce impacts to neighboring wells from groundwater drawdown are provided in **Section 5.2.2** of this document.

WATER QUALITY

Construction Impacts

Construction impacts of Alternative B would be similar to Alternative A. There are minor construction differences between the two alternatives, including a reduced site layout and reduced square footage. As with Alternative A, discharges of stormwater from construction activities on the Madera site would be regulated by the USEPA NPDES storm water program and would require coverage under the Phase II General Permit for Storm Water Discharges from Construction Activities. A SWPPP and an erosion control plan would be prepared and implemented as part of the NPDES permit. See **Section 4.3.1** for further discussion of construction impacts to surface water quality. Compliance with USEPA requirements would ensure impacts to water quality during construction would be less than significant. Nonetheless, see **Section 5.2.2** for a list of recommended mitigation measures, including recommended BMPs for incorporation into a SWPPP.

Operational Impacts

Stormwater Runoff

Operational impacts of Alternative B from stormwater runoff would be similar to those of Alternative A (**Section 4.3.1**) and a less than significant effect would result. Mitigation measures are included in **Section 5.2.2** that would further reduce operational impacts to water quality.

Wastewater

Wastewater treatment and disposal options for Alternative B are similar to those for Alternative A, except that average day disposal flows and disposal acreages would be reduced. Each of the wastewater options described in **Section 4.3.1** would satisfy Federal and State standards. No significant operational impacts to water quality from wastewater would occur. Mitigation measures associated with the on-site WWTP option are provided in **Section 5.2.2**.

4.3.3 ALTERNATIVE C – NON-GAMING USE

SURFACE WATER

Alternative C's impacts to flooding would be similar to Alternative A, given the similar footprint of the Alternative C development. As with Alternative A, Alternative C retail and restaurant buildings would be raised approximately five feet above the floodplain elevation (**Section 2.4.4**), resulting in a less than significant effect to project structures and patron safety during a flooding event.

The Grading and Drainage Plan would also be implemented for Alternative C (**Appendix K**, Figure 4). See **Sections 2.4.5** and **4.3.1** for further information regarding storm drainage improvements. With incorporation of the Grading and Drainage Plan, impacts to flooding would be less than significant with implementation of Alternative C. Nonetheless, mitigation measures are included in **Section 5.2.2** that would further reduce flooding impacts.

Groundwater occurs at a depth of approximately 140 feet below the ground surface in the vicinity of the Madera site. Thus, there is no known hydrologic connection between groundwater and surface water in this area and significant impacts to surface water resources would not occur as a result of project groundwater pumping.

GROUNDWATER

As with Alternative A, groundwater resources would be sufficient to serve the demands of Alternative C, which would require less water for operation. As with Alternative A, primary continuous water supply for Alternative C would be supplied by a privately operated on-site well. Under the on-site system option an on-site water supply well, an on-site redundancy/maintenance well, and an on-site storage tank would be developed. Under the City of Madera loop option an on-site water supply well, an off-site redundancy/maintenance/fire flow well (existing City Well No. 26), required off-site piping, and, if necessary, an on-site storage tank would be developed. Impacts to groundwater would be the same for either the on-site system option or the City of Madera looped system option because the primary water supply well would be located on the Madera site for both options.

At the property boundary, the predicted drawdown caused by Alternative C pumping would be 0.3 feet (water is recycled) or 0.5 feet (water is not recycled) (Komex, 2008 – **Appendix L**). Analysis of the drawdown curves showed that all of the known off-site wells located within a two-mile radius of the Madera site would experience drawdown effects from proposed pumping on the site. For Alternative C, the drawdown effects would be less than 0.4 feet. This would not be a significant impact because it would represent a negligible change in the depth pumped and would not measurably reduce the life of neighboring wells. Nonetheless, mitigation measures to reduce impacts to neighboring wells from groundwater drawdown are provided in **Section 5.2.2** of this document.

WATER QUALITY

Construction Impacts

Construction impacts of Alternative C would be similar to Alternative A. There are minor construction differences between the two alternatives, including a reduced site layout and reduced acres of impervious surfaces. As with Alternative A, discharges of stormwater from construction activities on the Madera site would be regulated by the USEPA NPDES storm water program and would require coverage under the Phase II General Permit for Storm Water Discharges from

Construction Activities. A SWPPP and an erosion control plan would be prepared and implemented as part of the NPDES permit. See **Section 4.3.1** for further discussion of construction impacts to surface water quality. Compliance with USEPA requirements would ensure impacts to water quality during construction would be less than significant. Nonetheless, see **Section 5.2.2** for a list of recommended mitigation measures, including recommended BMPs for incorporation into a SWPPP.

Operational Impacts

Stormwater Runoff

Operational impacts of Alternative C from stormwater runoff would be similar to those of Alternative A (**Section 4.3.1**) and a less than significant effect would result. Mitigation measures are included in **Section 5.2.2** that would further reduce operational impacts to water quality.

Wastewater

Wastewater treatment and disposal options for Alternative C are similar to those for Alternative A, except that average day disposal flows and disposal acreages would be reduced. Each of the wastewater options described in **Section 4.3.1** would satisfy Federal and State standards. No significant operational impacts to water quality from wastewater would occur. Mitigation measures associated with the on-site WWTP option are provided in **Section 5.2.2**.

4.3.4 ALTERNATIVE D – NORTH FORK LOCATION

SURFACE WATER

According to FEMA, the North Fork site is designated as being located within the Sierra National Forest Zone D, “an area in which flood hazards are undetermined.” Since the North Fork site is located in a mountainous, forested region with steep topography, flooding associated with a 100-year floodplain is very unlikely to occur. Therefore loss of flood storage and on-site impacts from flooding would not occur with Alternative D. A Drainage Plan has been prepared for Alternative D (**Appendix K**, Figure 13) that includes storm drainage improvements, including an overland drainage release to enable the property east of Mission Drive to continue to drain through the North Fork site (**Appendix K**, Figure 14). The overland drainage release allows the building site to be protected during peak storm runoff events.

Construction of Alternative D would create new impervious surfaces over approximately five acres of the North Fork site. This increase in impervious surfaces would prevent groundwater infiltration and increase surface runoff, potentially causing flooding, and without mitigation, would be a potentially significant impact.

Development of Alternative D would increase surface runoff to a volume of 0.55 acre-feet. To eliminate downstream flooding impacts, the stormwater drainage system for Alternative D is

designed to limit the peak flow from the developed site to pre-development peak flows (**Section 2.5.5**). To accomplish this, stormwater detention has been incorporated into the southern portion of the site. To accommodate the total storage required for implementation of Alternative D (0.55 acre-feet), the stormwater detention basin has been sized to allow for 1 acre-foot of storm water runoff. The 100-year storm runoff would fill the detention basin to a depth of approximately 3 feet.

Since a loss of flood-storage would not occur and post-project runoff and flow rates would equal pre-project levels with the detention basins, impacts to flooding would be less than significant. Nonetheless, mitigation measures are included in **Section 5.2.2** that would further reduce impacts from flooding.

It is unknown whether on-site surface waters are connected to groundwater. It is possible, although unlikely given the low levels of pumping that would occur under Alternative D that a significant affect to surface water flows would occur from project pumping. Thus, a potentially significant impact would result. Mitigation measures are contained in **Section 5.2.2** that would reduce this potential impact to a less than significant level.

GROUNDWATER

Water for domestic use, emergency supply, and fire protection would be provided by on-site groundwater wells or from Madera County, as described in **Section 2.5.7**.

If on-site groundwater is utilized, two new pumping wells on the North Fork site would be constructed to at least 500 feet below ground surface (bgs). One well would be used for continuous supply and the other for redundancy in case of malfunction or maintenance of the primary well. Each well would have a firm water supply capacity of approximately 17 (no water recycling) or 9 (with water recycling) gpm. Hook up to the County water supply system would be an alternative to on-site groundwater production. The proposed pumping rate is comparable to or lower than the tested sustainable pumping rates of existing wells in the area of the North Fork site; therefore, the aquifer would produce water at the proposed rate. Potentially significant effects on nearby wells could range from no impact at all to a well going dry or its pumping capacity being significantly reduced. Mitigation measures for drawdown impacts to groundwater are provided in **Section 5.2.2** of this document. Implementation of mitigation measures would reduce impacts to less than significant level.

WATER QUALITY

Construction Impacts

Project construction would result in ground disturbance, which could lead to erosion. Erosion can increase sediment discharge to surface waters during storm events and has the potential to discharge other construction-related pollutants. Discharges of sediment and pollutants to surface

waters from construction activities and accidents are a potentially significant impact to surface water quality.

Discharges of stormwater from construction activities on the North Fork site would be regulated by the USEPA NPDES storm water program and would require coverage under the Phase II General Permit for Storm Water Discharges from Construction Activities. See **Section 4.3.1** for additional information regarding the NPDES program. Compliance with USEPA requirements would ensure impacts to water quality during construction would be less than significant. Nonetheless, see **Section 5.2.2** for a list of recommended mitigation measures, including recommended BMPs for incorporation into a SWPPP.

Operational Impacts

Stormwater Runoff

Operational impacts of Alternative D from stormwater runoff would be similar to those of Alternative A (**Section 4.3.1**), except at a different location (the North Fork site). Mitigation measures are discussed in **Section 5.2.2** that would further reduce less than significant operational impacts to water quality.

Wastewater

Two wastewater facility options exist for wastewater treatment, storage, and disposal: 1) an off-site wastewater treatment option and 2) an on-site wastewater treatment option (**Section 2.5.6**). Each of these options would satisfy State and Federal standards as described in **Section 4.3.1**.

Development of Alternative D would produce 20,000 gpd of wastewater. See **Appendix I** for further discussion on flow rates and treatment options.

Wastewater treatment may occur at the County-operated WWTP that serves the Community of North Fork. This WWTP is located 1 mile northwest of the North Fork site (**Figure 2-16**). Treatment plant facilities include a raw sewage pump station, extended aeration treatment facilities, chlorine disinfection, an effluent pump station, storage pond, and a distribution pump station. Sprayfields are currently utilized to dispose of disinfected effluent; however, an expansion of the WWTP is currently underway that will also include the use of leachfields. Wastewater at the County WWTP is treated to State and Federal standards before disposal; therefore, less than significant impacts to surface water quality would occur from use of the off-site WWTP for disposal.

Alternatively, wastewater may be treated at an on-site WWTP, located to the south of the casino and hotel (**Figure 2-17**). Like Alternative A, a MBR WWTP would be utilized. Unlike Alternative A, the North Fork site is not located within the 100-year floodplain. Thus, water quality issues during flood events are not a concern.

The proposed treatment and disposal facility provides for the use of reclaimed water for casino toilet flushing and landscape irrigation. As described in **Section 4.3.1**, all water used for reclamation would meet Title 22 standards of the California Code of Regulations. Wastewater discharge options for the on-site WWTP are described below.

Surface Water Discharge. Treated effluent may be discharged to an unnamed tributary of Willow Creek, which flows through the North Fork site. Willow Creek empties into the San Joaquin River, upstream of Millerton Lake. A NPDES permit would be required to discharge wastewater produced on-site to the on-site creek. Since the treatment facilities and point of discharge would be fully contained within trust lands, the NPDES permit will be issued and regulated by the USEPA. Normally, the USEPA sets treatment and discharge requirements in the NPDES permit in accordance with State standards. The acquisition of a NPDES permit, along with the construction and operation of the proposed MBR WWTP, would ensure that impacts to surface water from the surface water wastewater disposal option would be less than significant.

Spray Disposal. The location for the WWTP and sprayfields is shown in **Figure 2-17**. Under this option, 2 acres of land in the southern corner of the North Fork site would be used for spray disposal. A seasonal storage basin would be located near the WWTP and would hold 4 MG of treated effluent. As with Alternative A, the proposed MBR WWTP effluent would meet the Title 22 criteria for recycled water and would be applied to sprayfields at agronomic rates and not during rain events. The water produced by this treatment system is highly treated and poses negligible health risks for the intended uses. In addition, surface water quality would not be impacted since discharge to surface water bodies would not occur. Implementing Title 22 criteria for recycled water at the Tribe's WWTP would also ensure that groundwater quality is not impacted. Therefore, no significant impacts would occur from implementation of the spray disposal option.

Sub-Surface Disposal. Leachfields are used to dispose of treated wastewater effluent by distributing it underground to infiltrative soil surfaces. The location of the WWTP and leachfields is shown in **Figure 2-17**. A maximum of 5 acres of leachfields would be required for effluent disposal. A seasonal storage basin would contain 2 MG of treated effluent.

As with Alternative A, the proposed MBR WWTP would produce an effluent meeting Title 22 criteria for the highest quality of recycled water, and poses negligible health risks for the intended uses. Surface water quality would not be impacted since discharge to surface water bodies would not occur. Implementation of Title 22 criteria for recycled water at the Tribe's WWTP would ensure that groundwater quality is not impacted. Therefore, no significant impacts would occur from implementation of the sub-surface disposal option for wastewater effluent.

Combination of Surface and Sub-Surface Disposal. Under this option, sprayfields would be used in conjunction with leachfields. The combined area would be approximately 2 acres. A seasonal storage basin would be required to hold 3 MG. The location of the WWTP and combination spray and leachfields is shown in **Figure 2-17**. Based on the above discussion, the on-site WWTP with discharge from a MBR facility would have a less than significant impact on the quality of surface water and groundwater resources.

4.3.5 ALTERNATIVE E – NO ACTION

SURFACE WATER

No new development is proposed under Alternative E. Thus, the existing drainage from the Madera site and North Fork site would continue to flow off-site unimpeded. Under this alternative, no effect would occur to drainage. Flooding at the Madera site following the No Action Alternative would consist of inundation of present day, agricultural landforms. Therefore no new impacts would occur.

Construction Impacts

The No Action Alternative would not result in any site grading, construction, or any other impact.

Operational Impacts

Runoff

Runoff following the No Action Alternative would consist of natural flow from permeable earthen and vegetative surfaces. The ongoing level of impact on the water quality of runoff from agricultural uses at the Madera and North Fork sites would continue.

Wastewater

The No Action Alternative would not generate wastewater. Therefore no impacts would occur.

GROUNDWATER

The No Action Alternative would result in no additional impacts to groundwater supply.

WATER QUALITY

Surface water supplies near the Madera site would continue to be susceptible to contamination from agricultural uses under Alternative E. The above surface water quality control measures necessary for the construction and operation of Alternatives A through D would not be necessary for the No Action Alternative because no new development would occur. Because existing land uses would persist on the Madera and North Fork sites, there would be no effect on current surface water quality.

4.4 AIR QUALITY

4.4.1 METHODOLOGY

The following is a description of the technical analysis approaches used to analyze the air quality effects of the project alternatives.

CONSTRUCTION-RELATED EFFECTS

URBEMIS version 9.2.4 was used to estimate emissions from all construction-related sources. URBEMIS is a California-specific computer model that is owned and modified by the local air pollution control districts and air quality management districts in the State of California. URBEMIS estimates construction, area source, and operational emissions of NO_x and PM₁₀ from potential land uses, using the most recent approved version of relevant CARB emissions models and emission factors and/or District-specific emission factors; and estimates emissions reductions.

Previous versions of URBEMIS were designed to estimate only emissions from motor vehicle trips generated by land use development. More recent versions of URBEMIS have been enhanced so the user can estimate construction and area source emissions and select mitigation measures for construction emissions, area sources, and motor vehicle trips. Output files from the URBEMIS version 9.2.4 air quality model are presented in **Appendix S**.

OPERATIONAL EFFECTS

URBEMIS version 9.2.4 was also used to estimate emissions associated with long-term operation of the project alternatives. Input values for the URBEMIS version 9.2.4 model included data from the traffic study of the project alternatives. Trip generation estimates from the traffic study were used in the URBEMIS version 9.2.4 model. Trip length values, specific to each of the project alternatives, were used.

Trip generation rates for the URBEMIS version 9.2.4 model runs have been adjusted to reflect primary trips estimated to be generated by the project alternatives. This was done so that diverted trips and pass-by trips are not included in the URBEMIS version 9.2.4 analysis. Diverted trips and pass-by trips were excluded from the analysis to focus the analysis presented in this Environmental Impact Statement (EIS) on the net effects of the project alternatives.

The average length of vehicle trips associated with the proposed casino is expected to be longer than the default trip length values included in the URBEMIS version 9.2.4 model. Therefore, project-specific trip length values were used in the air quality analysis. The average trip length was estimated using data from the Madera County Transportation Commission (MCTC) traffic model.

It should be noted that the emissions rates used in the URBEMIS version 8.7 model assume a mix of vehicle types. The vehicle mix assumption includes:

- light-duty vehicles used by the majority of travelers to the Madera or North Fork sites;
- urban buses used, for example, by tour groups;
- motor homes used, for example, by individual tourists;
- medium-duty vehicles used, for example, for delivery of supplies by vendors;
- heavy-duty vehicles used, for example, for larger deliveries.

Output files from the URBEMIS version 9.2.4 model are presented in **Appendix S**

Operational Carbon Monoxide Effect

A screening analysis was used to determine the potential of the project alternatives to have a significant effect on Carbon Monoxide (CO) concentrations. The screening analysis involved reviewing the traffic study of the project alternatives, and comparing the results of the traffic study to screening criteria.

The project's impact on CO will be considered significant if the project would:

- degrade operation of a signalized intersection to level of service (LOS) E or F, or
- substantially worsen LOS at a signalized intersection already operating at F.

These screening criteria are from the University of California Davis Institute of Transportation Studies document *Transportation Project-Level Carbon Monoxide Protocol* (Garza, et al., 1997). If the project meets either of these criteria, the proposed project's impact on CO is considered potentially significant if it would increase traffic volumes at an intersection by an amount approaching 5%, or more.

ODORS

While offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the local air districts. Any project with the potential to frequently expose members of the public to objectionable odors will be deemed to have a significant impact. Odor impacts on residential areas and other sensitive receptors, such as hospitals, day-care centers, schools, etc., warrant the closest scrutiny, but consideration should also be given to other land uses where people may congregate, such as recreational facilities, worksites, and commercial areas. Analysis of potential odor impacts should be conducted for the following two situations:

- Generators – projects that would potentially generate odorous emissions proposed to locate near existing sensitive receptors or other land uses where people may congregate, and

- Receivers – residential or other sensitive receptor projects or other projects built for the intent of attracting people locating near existing odor sources.

Because offensive odors rarely cause any physical harm and no requirements for their control are included in state or federal air quality regulations, the local air districts usually have no rules or standards related to odor emissions, other than a typical nuisance rule. Any actions related to odors are based on citizen complaints to local governments and the local air districts. To test for a potential odor concern, a visual evaluation is made to determine whether the proposed project, either as a generator or a receiver, would result in sensitive receptors being affected by odors. If the proposed project would result in sensitive receptors being located in an area affected by offensive odors, a more detailed analysis would be conducted.

TOXIC AIR CONTAMINANTS

Toxic air contaminants (TACs) are less pervasive in the urban atmosphere than the criteria air pollutants, but are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. There are hundreds of different types of toxic air contaminants, with varying degrees of toxicity. Sources of toxic air contaminants include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

According to the 2005 California Almanac of Emissions and Air Quality, the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important being diesel PM. Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances.

The identification of diesel particulate matter (DPM) as a toxic air contaminant in 1998 led CARB to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles (Plan) in September 2000. The Plan's goals are a 75 percent reduction in DPM by 2010 and an 85 percent reduction by 2020 from the 2000 baseline. Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust are known as particulate matter or PM, which includes carbon particles or “soot.” Diesel exhaust also contains a variety of harmful gases and over 40 other cancer causing substances. California’s identification of DPM as a toxic air contaminant was based on its potential to cause cancer, premature deaths, and other health problems. Exposure to DPM is a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California's potential airborne cancer risk from combustion sources (CARB 2000).

In January 2006, CARB officially identified environmental tobacco smoke (ETS) as a TAC. ETS is a complex mixture of thousands of gases and fine particulate matter emitted by the burning of tobacco products and from smoke exhaled by the smoker. The composition will vary depending

on heat of combustion, tobacco content and additives present, and type of filter material used. Researchers distinguish cigarette smoke as being comprised of two main components: mainstream and sidestream smoke. ETS is a combination of exhaled mainstream smoke, sidestream smoke, and compounds that diffuse through the cigarette paper.

Neither ambient air quality standards nor emission control standards have been established for most toxic air contaminants. In lieu of ambient air quality standards, toxic air contaminant impacts are considered significant if there is a reasonable concern that proposed project patrons and/or employees would be subject to exposure concentrations harmful to human health or welfare.

ASBESTOS

Demolition

Project construction sometimes requires the demolition of existing buildings at the project site. Buildings often include materials containing asbestos. Airborne asbestos fibers pose a serious health threat if adequate control techniques are not carried out when the material is disturbed. Most demolitions and many renovations are subject to an asbestos inspection prior to start of activity. The demolition, renovation or removal of asbestos-containing building materials is subject to the limitations of the National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulations as listed in the Code of Federal Regulations requiring notification and inspection and local air district regulations. Any demolition activity subject to but not complying with the requirements of the San Joaquin Valley Air Pollution Control District (SJVAPCD) and NESHAP would be considered to have a significant impact.

Naturally Occurring Asbestos (NOA)

Exposure and disturbance of rock and soil that contains asbestos can result in the release of fibers to the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (proper rock name serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include: unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

Serpentinite and/or ultramafic rock are known to be present in 44 of California's 58 counties. These rocks are particularly abundant in the counties of the Sierra Nevada foothills, the Klamath Mountains, and Coast Ranges. Like many counties in Central California, Madera County has areas that contain Naturally Occurring Asbestos. State regulations, enforced by the appropriate local air district may affect quarries, grading, and surfacing projects.

To address some of the health concerns associated with exposure to asbestos from these activities, the CARB has adopted two Airborne Toxic Control Measures (ATCMs). CARB has an ATCM for construction, grading, quarrying, and surface mining operations requiring the implementation of mitigation measures to minimize emissions of asbestos-laden dust. This ATCM applies to road construction and maintenance, construction and grading operations, and quarries and surface mines when the activity occurs in an area where Naturally Occurring Asbestos is likely to be found. Areas are subject to the regulation if they are identified on maps published by the Department of Conservation as ultramafic rock units or if the APCO or owner/operator has knowledge of the presence of ultramafic rock, serpentine, or Naturally OA on the site. The ATCM also applies if ultramafic rock, serpentine, or asbestos is discovered during any operation or activity.

In addition, CARB has an ATCM for surfacing applications. This ATCM applies to any person who produces, sells, supplies, offers for sale or supply, uses, applies, or transports any 1) aggregate material extracted from property where any portion of the property is located in a geographic ultramafic rock unit or 2) aggregate material extracted from property that is NOT located in a geographic ultramafic rock unit if the material has been evaluated at the request of the Air Pollution Control Officer (APCO) and determined to be ultramafic rock or serpentine; tested at the request of the APCO and determined to have an asbestos content of 0.25 percent or greater; or determined by the owner / operator of a facility to be ultramafic rock, or serpentine, or material that has an asbestos content of 0.25 percent or greater. The ATCM prohibits person from using, applying, selling, supplying, or offering for sale or supply any restricted material for surfacing unless it has been tested and determined to have an asbestos content that is less than 0.25 percent

FEDERAL AIR QUALITY CONFORMITY

The General Conformity Rule of the federal Clean Air Act (CAA) (42 USC 7401), implements Section 176(c) of the Act, and establishes minimum thresholds for volatile organic compounds (VOCs)¹ and NO_x (ozone precursors), CO, and other regulated constituents for non-attainment and maintenance areas. Ozone, respirable particulate matter (PM₁₀) and fine particulate matter (PM_{2.5}) are at issue for conformity given that the air district is in nonattainment for these pollutants. ROG and NO_x are analyzed as ozone precursors. PM₁₀ emissions are analyzed for respirable particulate matter. Although PM_{2.5} is a subset of PM₁₀, it also differs from the rest of PM₁₀ in that a significant amount of the ambient PM_{2.5} can result not only from direct emissions but also from transformation of precursors and condensing gaseous pollutants in the atmosphere (similar to ozone creation). Therefore, pursuant to the conformity regulations, SO₂ and NO_x are analyzed as PM_{2.5} precursors.

¹ VOCs are any organic compound containing at least one carbon atom except for specific exempt compounds found to be non-photochemically reactive. In this document, VOC is synonymous with ROG.

Title 40 Part 93 of the Code of Federal Regulations (CFR) was promulgated in order to determine conformity of Federal actions to state or Federal implementation plans. Whereas Subpart A of Part 93 relates to transportation plans, Subpart B is directed to general Federal actions. A federal agency must make a determination that a Federal action conforms to the applicable implementation plan before the action is taken. A conformity determination is required for each pollutant where a total of direct and indirect emissions in a nonattainment or maintenance area caused by the Federal action are greater than *de minimis* thresholds as listed in CFR Section 93.153(b).

These thresholds provide simple and direct guidance for federal agencies to ensure that they comply with approved state implementation plans (SIP). The general conformity rule includes a procedure for determining whether the rule is applicable to the actions of a federal agency. A conformity determination is required for each pollutant where the total direct and indirect emissions in a federal non-attainment or maintenance area caused by a Federal action would equal to or exceed any of the rates shown in 40 CFR Section 51.853 [b][1] or [2].

The project alternatives were evaluated to determine if they conform with approved SIPs. Emissions estimates used in the evaluation were developed using the URBEMIS version 8.7 model and CARB (2002) particulate matter speciation profiles for PM_{2.5} emissions.

IMPACTS TO FEDERAL CLASS I AREAS

Title 1, Part C was established, in part, to preserve, protect, and enhance the air quality in national parks, national wilderness areas, national monuments, national seashores, and other areas of special national or regional natural, recreational, scenic, or historic value. The FCAA promised to prevent significant deterioration of air quality under the Prevention of Significant Deterioration (PSD) program. The FCAA designates all international parks, national wilderness areas, and memorial parks larger than 5,000 acres, and national parks larger than 6,000 acres as “Class I areas.” There are 156 mandatory Class I areas nationwide.

Any major source of emissions within 100 kilometers (62.1 miles) from a federal Class I area is required to conduct a pre-construction review of air quality impacts on the area(s). The PSD Program protects Class I areas by allowing only a small increment of air quality deterioration in these areas by providing for assessment of potential impacts on air quality related values of Class I areas. A “major source” for the PSD program is defined as a facility that will emit (from direct stationary sources) 250 tons per year of regulated pollutant. For certain specific industries, the requirements apply to facilities that emit (through direct stationary sources) 70 tons per year or more of a regulated pollutant.

INDOOR AIR QUALITY

Since 1992 there has been an Indoor Air Quality (IAQ) Program at CARB that is primarily designed “to conduct and promote the coordination of research, investigations, experiments,

demonstrations, surveys, and studies relating to the causes, effects, extent, prevention, and control of indoor pollution in California.”

Practical applications and solutions for IAQ concerns have been combined with other environmental concerns in an emerging concept of green or sustainable building designs. The State agency that has taken the lead in green buildings is the Integrated Waste Management Board (IWMB). In fact, the IWMB has developed a central informational web source at <http://www.ciwmb.ca.gov/GreenBuilding/> where they discuss green building basics, supply a sustainable building tool kit, provide training programs for state and local government, and supply a sustainable building implementation plan.

On a national level, EPA completed, in 1999, an extensive modeling study to assess the compatibilities and trade-offs between energy, indoor air quality, and thermal comfort objectives for HVAC systems, and help formulate strategies to simultaneously achieve superior performance on each objective. To gain a better understanding of IAQ, EPA’s Office of Radiation and Indoor Air also conducted a major study of IAQ in public and commercial office buildings. Most recently, EPA has expanded their existing Building Air Quality guidance with a practical tool designed to be comprehensive state-of-the-art guidance for managing IAQ in commercial buildings. This tool is called the IAQ Building Education and Assessment Tool (I-BEAM) and is designed to be used by building professionals and others interested in indoor air quality in commercial buildings.

In addition, the U.S. Green Building Council² (USGBC) was established as a coalition of leaders from across the building industry working to promote buildings that are environmentally responsible, profitable, and healthy places to live and work. The USGBC has developed the Leadership in Energy and Environmental Design (LEED) Green Building Rating System as a national consensus-based, market-driven building rating system designed to accelerate the development and implementation of green building practices. Based on well-founded scientific standards, LEED emphasizes state of the art strategies for sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality. LEED recognizes achievements and promotes expertise in green building through a comprehensive system offering project certification, professional accreditation, training and practical resources.

LEED standards are currently available or under development for new commercial construction and major renovation projects; existing building operations; commercial interiors projects; core and shell projects; homes; and neighborhood development. The module for new commercial construction gives credits for categories entitled Sustainable Sites; Water Efficiency; Energy & Atmosphere; Materials & Resources; Innovation & Design Process; and Indoor Environmental Quality.

² <http://www.usgbc.org>

IAQ problems result from interactions between contaminant source, building site, building structure, activities within the building, mechanical equipment, climate, and occupants. Efforts to control indoor air contaminants change the relationships between these factors. There are many ways that people can intervene in these relationships to prevent or control indoor air contaminant problems. Control strategies can be categorized as source control, ventilation, air cleaning, or exposure control and successful mitigation often involves a combination of these strategies. A combination of I-BEAM and LEED factors and strategies were utilized to evaluate the IAQ concerns for this project and, where appropriate, to incorporate green building best practices for each alternative.

CLIMATE CHANGE

Climate change is a global phenomenon attributable to the sum of all human activities and natural processes. The California Governor's Office of Planning and Research (OPR) recently provided guidance on integrating analysis of greenhouse gases (GHG) in environmental documents (OPR, 2008). OPR recommends quantification of GHG emissions, assessment of the significance of any impact on climate change (provided in **Section 4.11**), and identification of mitigation or alternatives that would reduce the GHG emissions. The analysis presented in this EIS is consistent with the guidance provided to-date by OPR. As recommended by the OPR technical advisory, this analysis considers whether project emissions are individually or cumulatively significant. Based on the Proposed Project's GHG emissions (see **Section 4.11**), it was determined that specific climate change impacts could not be attributed to the proposed development. As such, project impacts are most appropriately addressed in terms of the incremental contribution to a global cumulative impact. This approach is consistent with the view articulated in the *Intergovernmental Panel on Climate (IPCC) Change Fourth Assessment Report* (IPCC, 2007). According to the IPCC, "difficulties remain in attributing temperature on smaller than continental scales and over time scales of less than 50 years. Attribution at these scales, with limited exceptions, has not yet been established (IPCC, 2007)." For a discussion and analysis of cumulative impacts related to climate change, refer to **Section 4.11**.

4.4.2 ALTERNATIVE A – PROPOSED PROJECT

CONSTRUCTION-RELATED IMPACTS

Alternative A would result in new construction activity, which would generate air pollutant emissions, determined by the San Joaquin Valley Air Pollution Control District (SJVAPCD) to be primarily PM₁₀. The primary source of PM₁₀ would be entrainment of fugitive dust from land clearing, earth moving, and wind erosion of exposed soil.

As noted in the SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI) (SJVAPCD, 2002b), "although the impacts from construction-related air pollutant emissions are temporary in duration, such emissions can still represent a significant air quality impact. In some cases, construction impacts may represent the largest air quality impact associated with a

proposed project. Construction activities such as grading, excavation and travel on unpaved surfaces can generate substantial amounts of dust, and can lead to elevated concentrations of PM₁₀.” Unmitigated construction-related emissions for Alternatives A-D are shown in **Table 4.4-1** for ease of comparison.

According to the GAMAQI, the SJVAPCD emphasizes the implementation of measures to control construction-related emissions, rather than the preparation of detailed quantification of construction-related emissions. Thus, consistent with the approach presented in the GAMAQI document, the generation of construction-related emissions is considered a short-term significant impact.

This impact would be reduced to a less than significant level with implementation of the mitigation measures listed in **Section 5.2.3** of this document.

TABLE 4.4-1
CONSTRUCTION-RELATED EMISSIONS

Project Alternative	Emissions in Tons Per Year				
	ROG ^b	NO _x ^{ab}	SO ₂ ^a	PM ₁₀	PM _{2.5}
Alternative A					
Amount of Emissions	3.70	5.49	0.00	2.46	0.74
Above Conformity Thresholds?	No	No	No	No	No
Alternative B					
Amount of Emissions	2.28	5.30	0.00	2.44	0.74
Above Conformity Thresholds?	No	No	No	No	No
Alternative C					
Amount of Emissions	2.78	5.47	0.00	2.35	0.74
Above Conformity Thresholds?	No	No	No	No	No
Alternative D					
Amount of Emissions	0.41	1.30	0.00	2.19	0.51
Above Conformity Thresholds?	No	No	No	No	No

NOTES: Emissions shown are for the highest year in the multi-year construction period.

Applicability threshold is 50 tons per year for ROG or NO_x (as ozone precursors), 100 tons per year for PM₁₀ and PM_{2.5} direct emissions, and 100 tons per for SO₂ and NO_x (as PM_{2.5} precursors).

^a PM_{2.5} precursors.

^b Ozone precursors.

SOURCE: URBEMIS version 9.2.4 emissions model, **Appendix S**.

OPERATION-RELATED IMPACTS

The SJVAPCD's GAMAQI document (SJVAPCD, 2002b) presents emissions thresholds that are used to determine the significance of operational air quality impacts. These local thresholds are:

- 10 tons per year of ROG emissions, and
- 10 tons per year of NO_x emissions.

Operation of Alternative A would result in the generation of ROG and NO_x emissions. **Table 4.4-2** presents an estimate of these unmitigated operational emissions for Alternative A.

Operation of Alternative A is estimated to result in:

- 22.99 tons per year of ROG emissions, and
- 46.64 tons per year of NO_x emissions.

Both ROG and NO_x emissions generated by Alternative A would be more than the 10 tons per year significance thresholds, and would therefore be a significant effect.

ROG and NO_x emissions associated with operation of Alternative A could be reduced to a less than significant level, by implementing the mitigation measures listed in **Section 5.2.3** of this document.

TABLE 4.4-2
OPERATIONAL EMISSIONS: SJVAPCD THRESHOLDS

Project Alternative	Emissions in Tons Per Year	
	ROG	NO _x
Alternative A		
Amount of Emissions	22.99	46.64
Above Significance Threshold?	Yes	Yes
Alternative B		
Amount of Emissions	16.49	33.77
Above Significance Threshold?	Yes	Yes
Alternative C		
Amount of Emissions	21.89	39.39
Above Significance Threshold?	Yes	Yes
Alternative D		
Amount of Emissions	2.26	4.62
Above Significance Threshold?	No	No

NOTES: Emissions shown are for mobile sources and area sources.

SOURCE: URBEMIS version 9.2.4 emissions model.

Operational emissions are compared to general conformity de minimums applicably thresholds in **Table 4.4-3**.

Carbon Monoxide Hot Spot Impacts

As described in the traffic study of the project alternatives, traffic operations at signalized study intersections would be LOS D or better under 2008 background conditions with Alternative A and traffic mitigation measures. Based on criteria presented in the University of California Davis Institute of Transportation Studies document *Transportation Project-Level Carbon Monoxide Protocol* (Garza, et al. 1997), intersections operating at LOS D or better typically do not result in CO concentrations that exceed State or Federal standards. This impact is significant due to intersections operating above LOS D prior to mitigation. With the implementation of traffic mitigation listed in **Section 5.2.7**, this impact would be reduced to a less than significant level.

TABLE 4.4-3
OPERATIONAL EMISSIONS: APPLICABILITY OF FEDERAL CONFORMITY REGULATIONS

Project Alternative	Emissions in Tons Per Year				
	ROG ^b	NO _x ^{ab}	SO ₂ ^a	PM ₁₀	PM _{2.5}
Alternative A					
Amount of Emissions	22.99	46.64	0.22	19.75	4.74
Above Conformity Thresholds?	No	No	No	No	No
Alternative B					
Amount of Emissions	16.49	33.77	0.16	14.39	3.45
Above Conformity Thresholds?	No	No	No	No	No
Alternative C					
Amount of Emissions	21.89	39.39	0.18	16.41	3.95
Above Conformity Thresholds?	No	No	No	No	No
Alternative D					
Amount of Emissions	2.26	4.62	0.02	1.97	0.47
Above Conformity Thresholds?	No	No	No	No	No
NOTES: Applicability threshold is 50 tons per year for ROG or NO _x (as ozone precursors), 100 tons per year for PM ₁₀ and PM _{2.5} direct emissions, and 100 tons per for SO ₂ and NO _x (as PM _{2.5} precursors).					
^a PM _{2.5} precursors.					
^b Ozone precursors.					
SOURCE: URBEMIS version 9.2.4 emissions model.					

ODOR IMPACTS

The SJVAPCD has determined some common types of facilities that have been known to produce odors in the SJV. These are presented in Table 4-2 of their *Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI)* (SJVAPCD 2002) along with a reasonable distance from the source where the degree of odors could possibly be significant. This Table was used to determine whether the proposed project, either as a generator or a receiver, would result in sensitive receptors being within the distances indicated.

There are no existing odor generators that might impact Alternative A and Alternative A itself would not contribute odors to the region. The Alternative A WWTP would use Membrane Bioreactor (MBR) technology and would be fully enclosed. Unlike common open pond WWTPs, the MBR process does not produce odors. MBR WWTPs have been used and numerous sites with no odor complaints. An example in California is the Thunder Valley Casino MBR WWTP, which has an MBR plant located adjacent to its parking lot. However, even a MBR WWTP, if not properly operated, could represent a source of odors that could represent a nuisance and potentially significant impact to the nearby residences. Application of odor mitigation measures will reduce the potential effects to a less than significant level. Mitigation measures are listed in **Section 5.2.3** of this EIS.

TOXIC AIR CONTAMINANT IMPACTS

The gaming facility under Alternative A would not itself contribute or generate toxic air contaminants. However, bus and diesel truck travel to and from the gaming facility, especially loading areas, would result in an increased concentration of diesel emissions in those areas, a potentially significant effect. Application of mitigation measures associated with loading docks would reduce potential effects to a less than significant level. Mitigation measures are listed in **Section 5.2.3** of this EIS.

Possible future commercial or industrial development could affect Alternative A by creating air toxics. However, any future facilities in the area would be required to meet federal, state, and local standards associated with the handling of hazardous materials, and therefore no significant impacts to patrons or employees of the proposed casino/hotel resort are anticipated.

Emergency generators would be kept onsite but their use during infrequent, random or programmed local or regional power outages would result in limited and temporary emissions. Thus, a less than significant impact would result.

ASBESTOS IMPACTS

Implementation of Alternative A could result in the demolition of existing structures on the Madera site. Airborne asbestos fibers pose a serious health threat if adequate control techniques are not carried out when the material is disturbed. Prior to any demolition activity, SJVAPCD's Enforcement Division shall be consulted to determine inspection and compliance requirements. Any demolition activity will be subject to the requirements of the Asbestos National Emission Standards for Hazardous Air Pollutants, 40 CFR sections 61.140 through 61.157. Strict compliance with these regulations will result in a less than significant impact.

Based on the fact that Alternative A is located on the valley floor, no naturally occurring asbestos (NOA) would be expected. No off-site fill that could potentially contain NOA would be required because on-site grading would balance. Thus, a less than significant effect from NOA would result.

FEDERAL CLASS I AREAS IMPACTS

Yosemite National Park, Pinnacles National Monument, Ansel Adams Wilderness Area, Kaiser Wilderness Area, and John Muir Wilderness Area are the only federal Class I areas within 100 kilometers of the Madera site. Analysis of operational emissions associated with Alternative A, presented in **Table 4.4-3**, show that Alternative A does not constitute a “major source” under PSD definitions and therefore does not trigger need for preconstruction review and assessment of impacts. Thus, a less than significant effect to Class I areas would result.

INDOOR AIR QUALITY IMPACTS

Firsthand and secondhand tobacco smoke contains carcinogens (including Polycyclic Organic Matter) and smoking would be permitted indoors at the casino. Patrons of the proposed gaming facility could be exposed to toxics and carcinogens from indoor tobacco use.

Ventilation is a standard engineering approach to assuring good indoor air quality and comfort. Ventilation removes and dilutes indoor contaminants, removes moisture from the air, which helps to prevent mold growth, and removes body effluents such as carbon dioxide that lead to a stuffy environment. Natural ventilation, through open windows and doors, is the primary ventilation route for residences, while mechanical ventilation, using HVAC systems, is most common in commercial buildings. Adequate and effective ventilation, and ducting of exhaust from combustion appliances, are necessary for acceptable indoor air quality, even when known air contaminants are minimized. However, ventilation is not a complete solution to indoor pollution: ventilation consumes energy, and some pollutants, such as formaldehyde emitted from building materials, require years to off-gas and are not completely removed by ventilation.

While there are no Federal requirements for controlling indoor air pollution or existing indoor air pollution thresholds, industry standards are available for reducing the concentrations of indoor air pollution. Industry and professional groups have developed numerous guidelines for improving indoor air quality. An example is the building ventilation standard of the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE), (*Ventilation for Acceptable Indoor Air Quality*, ASHRAE Standard 62-2001). Even though industry and professional guidelines may vary in their degree of indoor air quality protection, they are widely used and generally have helped reduce some indoor pollutants over the years.

Indoor air pollutants may also not be immediately perceptible by employees or customers. People could decide to avoid exposure to indoor air pollutants if notified of the presence of these pollutants. Operation of the facility to allow indoor smoking without proper ventilation or proper public notice would constitute a significant effect to public health. Compliance with mitigation measures listed in **Section 5.2.3** of this document will reduce effects of indoor air quality to a less than significant level for Alternative A.

FEDERAL AIR QUALITY CONFORMITY

The General Conformity Rule describes how Federal agencies determine whether their actions conform with the applicable State Implementation Plan (SIP) (40 CFR §51.853). The rule establishes *de minimis* emissions thresholds that are used to determine whether the regulations apply and a detailed conformity determination is required. The General Conformity Rule presents different threshold levels for some pollutant, with the specific level being based on the severity of the pollution problem. Madera County has been designated a “serious” nonattainment area for ozone, a “serious” nonattainment area for PM₁₀, and a nonattainment area for PM_{2.5}. Therefore, according to the General Conformity Rule, the *de minimis* levels for Alternative A would be when ROG emissions are less than 50 tons per year, NO_x emissions are less than 50 tons per year, and PM₁₀ emissions are less than 70 tons per year.

Construction of Alternative A would result in the generation of ROG, NO_x, and PM₁₀ emissions.

Table 4.4-1 presents an estimate of these construction-related emissions for Alternative A.

Construction of Alternative A is estimated to result in:

- 2.91 tons per year of ROG,
- 4.47 tons per year of NO_x,
- 0.00 tons per year of SO₂,
- 0.20 tons per year of PM₁₀, and
- 0.07 tons per year of PM_{2.5}, emissions.

Operation of Alternative A would also result in the generation of ROG, NO_x, and PM₁₀ emissions associated with motor vehicle travel. **Table 4.4-3** presents an estimate of these operational emissions for Alternative A. Operation of Alternative A is estimated to result in:

- 22.99 tons per year of ROG,
- 46.64 tons per year of NO_x,
- 0.22 tons per year of SO₂,
- 19.75 tons per year of PM₁₀, and
- 4.74 tons per year of PM_{2.5}, emissions.

The emissions in **Table 4.4-1** and **Table 4.4-3** are considered separately because the construction phase of Alternative A would not overlap with the operational phase of Alternative A.

As shown in **Table 4.4-1** and **Table 4.4-3**, emissions associated with Alternative A would be less than the General Conformity Rule *de minimis* thresholds. Therefore, consistent with 40 CFR §51.583, Alternative A would conform with the SIP and a conformity determination is not required.

4.4.3 ALTERNATIVE B – REDUCED INTENSITY

This section of the EIS presents a description of air quality effects related to Alternative B. The methodology and significance thresholds used to assess these effects are described under Alternative A above. Implementation of Alternative B would result in short-term construction-related effects, and effects related to operation of the project. The following is a description of these effects.

CONSTRUCTION-RELATED EMISSIONS

Alternative B would result in new construction activity, which would generate air pollutant emissions, determined by the SJVAPCD to be primarily PM₁₀. The primary source of PM₁₀ would be entrainment of fugitive dust from land clearing, earth moving, and wind erosion of exposed soil.

Consistent with the approach presented in the GAMAQI document, the generation of construction-related emissions is considered a short-term significant impact. This impact would be reduced to a less than significant level after implementation of mitigation measures listed in **Section 5.2.3** of this document.

OPERATION-RELATED IMPACTS

Operation of Alternative B would result in the generation of ROG and NO_x emissions. **Table 4.4-2** presents an estimate of these operational emissions for Alternative B. Operation of Alternative B is estimated to result in:

- 16.49 tons per year of ROG emissions, and
- 33.77 tons per year of NO_x emissions.

Both ROG and NO_x emissions generated by Alternative B would be more than the 10 tons per year significance thresholds, and would therefore be a significant effect.

ROG and NO_x emissions associated with operation of Alternative B could be reduced to a less than significant level, by implementing the mitigation measures listed in **Section 5.2.3** of this document.

Carbon Monoxide Hot Spot Impacts

As described in the traffic study of the project alternatives, traffic operations at signalized study intersections would be LOS D or better under 2008 background conditions with Alternative B and traffic mitigation measures. Based on criteria presented in the University of California Davis Institute of Transportation Studies document *Transportation Project-Level Carbon Monoxide Protocol* (Garza, et al. 1997), intersections operating at LOS D or better typically do not result in CO concentrations that exceed State or Federal standards. This impact is significant due to

intersections operating above LOS D prior to mitigation. With the implementation of traffic mitigation listed in **Section 5.2.7**, this impact would be reduced to a less than significant level.

ODOR IMPACTS

A discussion of odor impacts is presented in **Section 4.4.2**. There are no existing odor generators that might impact Alternative B and Alternative B itself would not contribute odors to the region. The Alternative B WWTP would use MBR technology and would be fully enclosed. Unlike common open pond WWTPs, the MBR process does not produce odors. MBR WWTPs have been used and numerous sites with no odor complaints. However, even a MBR WWTP, if not properly operated, could represent a source of odors that could represent a nuisance and potentially significant impact to the nearby residences. Application of odor mitigation measures will reduce the potential effects to a less than significant level. Mitigation measures are listed in **Section 5.2.3** of this EIS.

TOXIC AIR CONTAMINANTS IMPACTS

The gaming facility under Alternative B would not itself contribute or generate toxic air contaminants. However, bus and diesel truck travel to and from the gaming facility, especially loading areas, would result in an increased concentration of diesel emissions in those areas, a potentially significant effect. Application of mitigation measures associated with loading docks would reduce potential effects to a less than significant level. Mitigation measures are listed in **Section 5.2.3** of this EIS.

Possible future commercial or industrial development could affect Alternative B by creating air toxics. However, any future facilities in the area would be required to meet federal, state, and local standards associated with the handling of hazardous materials, and therefore no significant impacts to patrons or employees of the proposed casino/hotel resort are anticipated.

Emergency generators would be kept onsite but their use during infrequent, random or programmed local or regional power outages would result in limited and temporary emissions. Thus, a less than significant impact would result.

ASBESTOS IMPACTS

Implementation of Alternative B could result in the demolition of existing structures on the Madera site. Airborne asbestos fibers pose a serious health threat if adequate control techniques are not carried out when the material is disturbed. Prior to any demolition activity, SJVAPCD's Enforcement Division shall be consulted to determine inspection and compliance requirements. Any demolition activity will be subject to the requirements of the Asbestos National Emission Standards for Hazardous Air Pollutants, 40 CFR sections 61.140 through 61.157. Strict compliance with these regulations will result in a less than significant impact.

Based on the fact that Alternative B is located on the valley floor, no naturally occurring asbestos (NOA) would be expected. No off-site fill that could potentially contain NOA would be required because on-site grading would balance. Thus, a less than significant effect from NOA would result.

FEDERAL CLASS I AREAS IMPACTS

Yosemite National Park, Pinnacles National Monument, Ansel Adams Wilderness Area, Kaiser Wilderness Area, and John Muir Wilderness Area are the only federal Class I areas within 100 kilometers of the Madera site. Analysis of operational emissions associated with Alternative B, presented in **Table 4.4-3**, show that Alternative B does not constitute a “major source” under PSD definitions and therefore does not trigger need for preconstruction review and assessment of impacts. Thus, a less than significant effect to Class I areas would result.

INDOOR AIR QUALITY IMPACTS

As with Alternative A, casino patrons would be exposed to tobacco smoke. Ventilation is a standard engineering approach to assuring good indoor air quality and comfort. Adequate and effective ventilation, and ducting of exhaust from combustion appliances, are necessary for acceptable indoor air quality, even when known air contaminants are minimized. Even though industry and professional guidelines may vary in their degree of indoor air quality protection, they are widely used and generally have helped reduce some indoor pollutants over the years. Indoor air pollutants may also not be immediately perceptible by employees or customers. People could decide to avoid exposure to indoor air pollutants if notified of the presence of these pollutants. Operation of the facility to allow indoor smoking without proper ventilation or proper public notice would constitute a significant effect to public health. Compliance with mitigation measures listed in **Section 5.2.3** of this document will reduce effects of indoor air quality to a less than significant level for Alternative B.

FEDERAL AIR QUALITY CONFORMITY

Construction of Alternative B would result in the generation of ROG, NO_x, and PM₁₀ emissions. **Table 4.4-1** presents an estimate of these construction-related emissions for Alternative B. Construction of Alternative B is estimated to result in:

- 1.85 tons per year of ROG,
- 4.54 tons per year of NO_x,
- 0.00 tons per year of SO₂,
- 0.20 tons per year of PM₁₀, and
- 0.07 tons per year of PM_{2.5}, emissions.

Operation of Alternative B would also result in the generation of ROG, NO_x, and PM₁₀ emissions associated with motor vehicle travel. **Table 4.4-3** presents an estimate of these operational emissions for Alternative B. Operation of Alternative B is estimated to result in:

- 16.49 tons per year of ROG,
- 33.77 tons per year of NO_x,
- 0.16 tons per year of SO₂,
- 14.39 tons per year of PM₁₀, and
- 3.45 tons per year of PM_{2.5}, emissions.

The emissions in **Table 4.4-1** and **Table 4.4-3** are considered separately because the construction phase of Alternative B would not overlap with the operational phase of Alternative B.

As shown in **Table 4.4-1** and **Table 4.4-3**, emissions associated with Alternative B would be less than the General Conformity Rule *de minimis* thresholds. Therefore, consistent with 40 CFR §51.583, Alternative B would conform with the SIP and a conformity determination is not required.

4.4.4 ALTERNATIVE C – NON-GAMING USE

This section of the EIS presents a description of air quality effects related to Alternative C. The methodology and significance thresholds used to assess these effects are described under Alternative A above. Implementation of Alternative C would result in short-term construction-related effects, and effects related to operation of the project. The following is a description of these effects.

CONSTRUCTION-RELATED IMPACTS

Alternative C would result in new construction activity, which would generate air pollutant emissions, determined by the SJVAPCD to be primarily PM₁₀. The primary source of PM₁₀ would be entrainment of fugitive dust from land clearing, earth moving, and wind erosion of exposed soil.

Consistent with the approach presented in the GAMAQI document, the generation of construction-related emissions is considered a short-term significant impact. This impact would be reduced to a less than significant level after implementation of mitigation measures listed in **Section 5.2.3** of this document.

OPERATION-RELATED IMPACTS

Operation of Alternative C would result in the generation of ROG and NO_x emissions. **Table 4.4-2** presents an estimate of these operational emissions for Alternative C. Operation of Alternative C is estimated to result in:

- 21.89 tons per year of ROG emissions, and
- 39.39 tons per year of NO_x emissions.

Both ROG and NO_x emissions generated by Alternative C would be more than the 10-ton-per-year significance thresholds, and would therefore be a significant effect.

ROG and NO_x emissions associated with operation of Alternative C could be reduced to a less than significant level by implementing the mitigation measures listed in **Section 5.2.3**.

Carbon Monoxide Hot Spot Impacts

As described in the traffic study of the project alternatives, traffic operations at signalized study intersections would be LOS D or better under 2008 background conditions with Alternative C and traffic mitigation measures. Based on criteria presented in the University of California Davis Institute of Transportation Studies document *Transportation Project-Level Carbon Monoxide Protocol* (Garza, et al. 1997), intersections operating at LOS D or better typically do not result in CO concentrations that exceed State or Federal standards. This impact is significant due to intersections operating above LOS D prior to mitigation. With the implementation of traffic mitigation listed in **Section 5.2.7**, this impact would be reduced to a less than significant level.

ODOR IMPACTS

A discussion of odor impacts is presented in **Section 4.4.2**. Most of the operations listed in the GAMAQI that are known to produce odors would usually occur in the manufacturing zones. Alternative C does not include any uses that would be expected to produce offensive odors.

The Alternative C WWTP would use MBR technology and would be fully enclosed. Unlike common open pond WWTPs, the MBR process does not produce odors. MBR WWTPs have been used and numerous sites with no odor complaints. However, even a MBR WWTP, if not properly operated, could represent a source of odors that could represent a nuisance and potentially significant impact to the nearby residences. Application of odor mitigation measures will reduce the potential effects to a less than significant level. Mitigation measures are listed in **Section 5.2.3** of this EIS.

TOXIC AIR CONTAMINANTS IMPACTS

The commercial development under Alternative C would not itself contribute or generate toxic air contaminants. However, bus and diesel truck travel to and from the development, especially loading areas, would result in an increased concentration of diesel emissions in those areas, a potentially significant effect. Application of mitigation measures associated with loading docks would reduce potential effects to a less than significant level. Mitigation measures are listed in **Section 5.2.3** of this EIS.

ASBESTOS IMPACTS

Implementation of Alternative C could result in the demolition of existing structures on the Madera site. Airborne asbestos fibers pose a serious health threat if adequate control techniques are not carried out when the material is disturbed. Prior to any demolition activity, SJVAPCD's Enforcement Division shall be consulted to determine inspection and compliance requirements. Any demolition activity will be subject to the requirements of the Asbestos National Emission

Standards for Hazardous Air Pollutants, 40 CFR sections 61.140 through 61.157. Strict compliance with these regulations will result in a less than significant impact.

Based on the fact that Alternative C is located on the valley floor, no naturally occurring asbestos (NOA) would be expected. No off-site fill that could potentially contain NOA would be required because on-site grading would balance. Thus, a less than significant effect from NOA would result.

FEDERAL CLASS I AREAS IMPACTS

Yosemite National Park, Pinnacles National Monument, Ansel Adams Wilderness Area, Kaiser Wilderness Area, and John Muir Wilderness Area are the only federal Class I areas within 100 kilometers of the Madera site. Analysis of operational emissions associated with Alternative C, presented in **Table 4.4-3**, show that Alternative C does not constitute a “major source” under PSD definitions and therefore does not trigger need for preconstruction review and assessment of impacts. Thus, a less than significant effect to Class I areas would result.

INDOOR AIR QUALITY IMPACTS

As smoking would be allowed in marked sections of restaurants, there are potentially significant secondhand tobacco smoke impacts, similar to those discussed for Alternative A. Indoor air pollutants may also not be immediately perceptible by employees or customers. People could decide to avoid exposure to indoor air pollutants if notified of the presence of these pollutants. Operation of the facility to allow indoor smoking without proper ventilation or proper public notice would constitute a significant effect to public health. Compliance with mitigation measures listed in **Section 5.2.3** will reduce effects of indoor air quality to a less than significant level for Alternative C.

FEDERAL AIR QUALITY CONFORMITY

Construction of Alternative C would result in the generation of ROG, NO_x, and PM₁₀ emissions. **Table 4.4-1** presents an estimate of these construction-related emissions for Alternative C. Construction of Alternative C is estimated to result in:

- 2.25 tons per year of ROG,
- 4.69 tons per year of NO_x,
- 0.00 tons per year of SO₂,
- 0.19 tons per year of PM₁₀, and
- 0.03 tons per year of PM_{2.5}, emissions.

Operation of Alternative C would also result in the generation of ROG, NO_x, and PM₁₀ emissions associated with motor vehicle travel. **Table 4.4-3** presents an estimate of these operational emissions for Alternative C. Operation of Alternative C is estimated to result in:

- 21.89 tons per year of ROG,
- 33.77 tons per year of NO_x,
- 0.18 tons per year of SO₂,
- 16.41 tons per year of PM₁₀, and
- 3.95 tons per year of PM_{2.5}, emissions.

As shown in **Table 4.4-1** and **Table 4.4-3**, emissions associated with Alternative C would be less than the General Conformity Rule *de minimis* thresholds. Therefore, consistent with 40 CFR §51.583, Alternative C would conform with the SIP and a conformity determination is not required.

4.4.5 ALTERNATIVE D – NORTH FORK LOCATION

This section of the EIS presents a description of effects related to Alternative D. The methodology and significance thresholds used to assess the air quality effects are described under Alternative A above. Implementation of Alternative D would result in short-term construction-related effects, and effects related to operation of the project. The following is a description of these effects.

CONSTRUCTION-RELATED IMPACTS

Alternative D would result in new construction activity, which would generate air pollutant emissions, determined by the SJVAPCD to be primarily PM₁₀. The primary source of PM₁₀ would be entrainment of fugitive dust from land clearing, earth moving, and wind erosion of exposed soil.

Consistent with the approach presented in the GAMAQI document, the generation of construction-related emissions is considered a short-term significant impact. This impact would be reduced to a less than significant level after implementation of mitigation measures listed in **Section 5.2.3** of this document.

OPERATION-RELATED IMPACTS

Operation of Alternative D would result in the generation of ROG and NO_x emissions. **Table 4.4-2** presents an estimate of these operational emissions for Alternative D. Operation of Alternative D is estimated to result in:

- 2.26 tons per year of ROG emissions, and
- 4.62 tons per year of NO_x emissions.

Both ROG and NO_x emissions would be less than the 10 tons per year significance thresholds, and would be a less than significant effect. No mitigation measures would be necessary.

Carbon Monoxide Hot Spot Impacts

As described in the traffic study of the project alternatives, traffic operations at signalized study intersections would be LOS D or better under 2008 background conditions with Alternative D and traffic mitigation measures. Based on criteria presented in the University of California Davis Institute of Transportation Studies document *Transportation Project-Level Carbon Monoxide Protocol* (Garza, et al. 1997), intersections operating at LOS D or better typically do not result in CO concentrations that exceed State or Federal standards. This impact is significant due to intersections operating above LOS D prior to mitigation. With the implementation of traffic mitigation listed in **Section 5.2.7**, this impact would be reduced to a less than significant level.

ODOR IMPACTS

A discussion of odor impacts is presented in **Section 4.4.2**. There are no existing odor generators that might impact Alternative D and Alternative D itself would not contribute odors to the region. The Alternative D WWTP would use MBR technology and would be fully enclosed. Unlike common open pond WWTPs, the MBR process does not produce odors. MBR WWTPs have been used at numerous sites with no odor complaints. However, even a MBR WWTP, if not properly operated, could represent a source of odors that could represent a nuisance and potentially significant impact to the nearby residences. Application of odor mitigation measures will reduce the potential effects to a less than significant level. Mitigation measures are listed in **Section 5.2.3** of this EIS.

TOXIC AIR CONTAMINANTS IMPACTS

The gaming facility under Alternative D would not itself contribute or generate toxic air contaminants. However, bus and diesel truck travel to and from the gaming facility, especially loading areas, would result in an increased concentration of diesel emissions in those areas, a potentially significant effect. Application of mitigation measures associated with loading docks would reduce potential effects to a less than significant level. Mitigation measures are listed in **Section 5.2.3** of this EIS.

Possible future commercial or industrial development could affect Alternative D by creating air toxics. However, because of the project area's rural character and relevant land use regulations, it is unlikely that toxic air contaminant emitting sources would locate near the project site. Any future facilities in the area would be required to meet federal, state, and local standards associated with the handling of hazardous materials, and therefore no significant impacts to patrons or employees of the proposed casino/hotel resort are anticipated.

Emergency generators would be kept onsite but their use during infrequent, random or programmed local or regional power outages would result in limited and temporary emissions. Thus, a less than significant impact would result.

ASBESTOS IMPACTS

Existing North Fork site structures would not be demolished under Alternative D. Therefore, no airborne asbestos fibers from structure demolition would result.

The North Fork site is located in a candidate area for Naturally Occurring Asbestos (NOA), which has been identified as a toxic air contaminant by the California Air Resources Board (CARB). The possible presence of NOA on the North Fork site represents a potentially significant impact to construction workers and residents in the area should NOA be released during construction. Mitigation measures in **Section 5.2.3** would reduce this impact to a less than significant level.

FEDERAL CLASS I AREAS IMPACTS

Yosemite National Park, Sequoia/Kings Canyon National Park, the Ansel Adams Wilderness Area, the Kaiser Wilderness Area, and the John Muir Wilderness Area are the only federal Class I areas within 100 kilometers of the North Fork site. Analysis of operational emissions associated with Alternative D, presented in **Table 4.4-3**, show that Alternative D does not constitute a “major source” under PSD definitions and therefore does not trigger need for preconstruction review and assessment of impacts. Thus, a less than significant effect to Class I areas would result.

INDOOR AIR QUALITY IMPACTS

The operation of Alternatives D would be in compliance with indoor air quality requirements, including environmental tobacco smoke (ETS). Ventilation is a standard engineering approach to assuring good indoor air quality and comfort. Adequate and effective ventilation, and ducting of exhaust from combustion appliances, are necessary for acceptable indoor air quality, even when known air contaminants are minimized. Even though industry and professional guidelines may vary in their degree of indoor air quality protection, they are widely used and generally have helped reduce some indoor pollutants over the years. Indoor air pollutants may also not be immediately perceptible by employees or customers. People could decide to avoid exposure to indoor air pollutants if notified of the presence of these pollutants. Operation of the facility to allow indoor smoking without proper ventilation or proper public notice would constitute a significant effect to public health. Compliance with mitigation measures listed in **Section 5.2.3** of this document will reduce effects of indoor air quality to a less than significant level for Alternative D.

FEDERAL AIR QUALITY CONFORMITY

Construction of Alternative D would result in the generation of ROG, NO_x, and PM₁₀ emissions. **Table 4.4-1** presents an estimate of these construction-related emissions for Alternative D. Construction of Alternative D is estimated to result in:

- 0.035 tons per year of ROG,
- 1.11 tons per year of NO_x,
- 0.00 tons per year of SO₂,
- 0.16 tons per year of PM₁₀, and
- 0.03 tons per year of PM_{2.5}, emissions.

Operation of Alternative D would also result in the generation of ROG, NO_x, and PM₁₀ emissions associated with motor vehicle travel. **Table 4.4-3** presents an estimate of these operational emissions for Alternative D. Operation of Alternative D is estimated to result in:

- 2.26 tons per year of ROG,
- 4.62 tons per year of NO_x,
- 0.02 tons per year of SO₂,
- 1.97 tons per year of PM₁₀, and
- 0.47 tons per year of PM_{2.5}, emissions.

The emissions in **Table 4.4-1** and **Table 4.4-3** are considered separately because the construction phase of Alternative D would not overlap with the operational phase of Alternative D.

As shown in **Table 4.4-1** and **Table 4.4-3**, emissions associated with Alternative D would be less than the General Conformity Rule *de minimis* thresholds. Therefore, consistent with 40 CFR §51.583, Alternative D would conform with the SIP and a conformity determination is not required.

4.4.6 ALTERNATIVE E – NO ACTION

This section of the EIS presents a description of effects related to the No Action Alternative. Implementation of the No Action Alternative would result in no short-term construction-related effects, and no effects related to operation of new facilities. Existing effects resulting from existing development and activity on the Madera and North Fork sites would continue under the No Action Alternative.

CONSTRUCTION-RELATED IMPACTS

The No Action Alternative would not result in construction activity. Therefore, this alternative would not result in the generation of emissions associated with construction.

OPERATION-RELATED IMPACTS

The No Action Alternative would not result in the generation of additional operational emissions. Emissions associated with existing residential and agricultural activity would continue. These emissions are minimal and would therefore not constitute a significant effect.

Carbon Monoxide Hot Spot Impacts

Based on criteria presented in the University of California Davis Institute of Transportation Studies document *Transportation Project-Level Carbon Monoxide Protocol* (Garza, et al. 1997), intersections operating at LOS D or better typically do not result in CO concentrations that exceed State or Federal standards. The No Action Alternative would result in baseline CO concentrations. As described in the **Section 3.8**, three signalized study intersections in the vicinity of the Madera site and one signalized study intersection in the vicinity of the Madera site would operate at LOS E or worse under the No Action Alternative. This impact is significant due to intersections operating above LOS D prior to mitigation. With the implementation of traffic mitigation listed in **Section 5.2.7**, this impact would be reduced to a less than significant level.

ODOR IMPACTS

Given that no new development would occur, the No Action Alternative would not result in the generation of odors.

TOXIC AIR CONTAMINANTS IMPACTS

Given that no new development would occur, the No Action Alternative would not result in the generation of toxic air contaminants. Existing diesel emissions from agricultural operations on the Madera site would continue under the No Action Alternative. However, these emissions would be temporary and relatively infrequent resulting in a less than significant effect.

ASBESTOS IMPACTS

No new development or ground disturbance would occur under Alternative E. Existing ground disturbance associated with agricultural activities would continue on the Madera site. However, given that the Madera site is not located in an area where NOA is expected to occur, a less than significant effect from asbestos emissions would occur under the No Action Alternative.

FEDERAL CLASS I AREAS IMPACTS

Given that no new development would occur and existing emissions associated with residential and agricultural activities on the Madera and North Fork sites does not rise to the level of a “major source,” the No Action Alternative would not result in significant impacts to federal Class I areas.

INDOOR AIR QUALITY IMPACTS

Given that no new development would occur, the No Action Alternative would not result in the generation of indoor air quality impacts.

FEDERAL AIR QUALITY CONFORMITY

The No Action Alternative would not result in the generation of additional criteria pollutant emissions subject to the federal conformity regulations.

4.5 BIOLOGICAL RESOURCES

The purpose of this section is to analyze the potential environmental consequences of the project alternatives on biological resources, including wildlife and habitats, Federally listed species, migratory birds, and jurisdictional waters of the U.S. The analysis of potential effects was based on the biological setting as determined from field surveys conducted by H. T. Harvey & Associates and Analytical Environmental Services in 2004, 2005, 2006, and 2008, by consultation with the USFWS, and reviewing known literature and metadata, including the California Natural Diversity Database (CNDDDB). Potential direct effects to biological resources associated with the development of each project alternative are discussed below.

4.5.1 ALTERNATIVE A – PROPOSED PROJECT

POTENTIAL EFFECTS TO WILDLIFE AND HABITATS

Terrestrial Resources

Development of Alternative A would affect habitats that are utilized by wildlife species. **Table 4.5-1** provides a summary of the acreage of each habitat type that would be affected under the three different surface wastewater disposal options for Alternative A, as described in **Section 2.2.7**, and shown in **Figure 2-8**. As shown in **Table 4.5-1**, Option 1 and Option 3 would affect 41% of the 305-acre Madera site, primarily dryland wheat fields. Option 2 would affect 56% of the property, also dryland wheat fields. This habitat provides limited resources for wildlife due to frequent plowing and weed control measures associated with farming practices. Furthermore, farming practices disrupt burrows and groundcover used by fossorial mammals. Species found in cultivated habitats are typically widespread and accustomed to disturbances. Implementation of Alternative A, however, would result in a significant impact to Swainson's hawk. Adverse effects to Swainson's hawk will be minimized by implementation of the mitigation measures identified in **Section 5.2.4**.

TABLE 4.5-1
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE A

Configuration Number	Habitat Type	Acreage Affected	Percentage Affected
Option 1	Dryland Wheat Fields	126.5	41%
Option 2	Dryland Wheat Fields	170.6	56%
Option 3	Dryland Wheat Fields	126.5	41%

SOURCE: H. T. Harvey & Associates, 2004; AES, 2005.

Aquatic Resources

Potential impacts to Schmidt Creek and downstream aquatic habitat from the discharge of tertiary treated wastewater include changes in flow and vegetation characteristics of the waterways. The riparian vegetation within the ditch is not continuous and is primarily composed of herbaceous species, both upland and hydrophytic. Flowing water was absent during the survey periods and

the addition of a permanent water source in Schmidt Creek ditch would stimulate the growth of hydrophytic vegetation and ultimately create conditions for the growth of a diverse riparian habitat. Thus, impacts to plant species within the Schmidt Creek ditch from surface disposal would be less than significant. The addition of high quality recycled water to Dry Creek (downstream of Schmidt Creek) would flush particulates, remove debris, increase low flows, and provide better habitat for aquatic species by supplying more water for the development of shading riparian vegetation (Hopkins et al., 2002). One way the discharge could potentially impact the aquatic habitat is if the discharged effluent increases the water temperature of Dry Creek by more than five degrees Fahrenheit. This impact can be avoided by the implementation of mitigation measures in **Section 5.2.4**.

STATE SPECIAL-STATUS SPECIES

As discussed in **Section 3.5.4**, three State special-status species have the potential to occur on the Madera site. The site provides foraging habitat for the Swainson's hawk ~~and northern harrier~~ and potential nesting habitat for the Burrowing Owl, ~~California horned lark~~ and the hoary bat. The potential for the project to impact these species is described below. These species are not necessarily afforded protection under the Federal Endangered Species Act.

Swainson's hawk is likely to forage on the site. The CDFG uses two basic criteria to determine whether a site represents suitable foraging habitat for Swainson's hawk, which they recommend be mitigated for if converted to urban development (CDFG 1994). These criteria are as follows: 1) the site is within a 10-mile radius of an active Swainson's hawk nest (used during one or more of the last five years), and 2) the site provides a suitable foraging cover type.

1. Active nest sites within a 10-mile radius of the Madera site: During a follow-up survey, performed by H.T. Harvey and Associates (May 30, 2008), that involved visual inspection of all suitable nest trees within an expanding radius about the Madera site, an active Swainson's hawk nest was found 2.6 miles north of the Madera site. No other Swainson's hawk nest is known from within a 10-mile radius of the site (CNDDDB 2007).
2. Suitable foraging cover type: The dryland wheat fields that dominate the Madera site meet the basic definition of small mammal and insect foraging habitat for Swainson's hawk (CDFG 1994).

The loss of suitable foraging habitat for Swainson's hawk is a significant indirect effect. Adverse effects to Swainson's hawk will be minimized by implementation of the mitigation measures identified in **Section 5.2.4**.

~~The northern harrier is not likely to occur on the site because there is very little suitable foraging habitat in the vicinity. Additionally, there are no recorded occurrences of this species within five miles of the Madera site. Alternative A is not expected to impact the northern harrier.~~

~~Horned larks are not likely to use the site while wheat is planted, but could be present when the site is fallow. Therefore, if a grain crop is cultivated on the Madera site prior to conversion, no impacts to this species are expected to result from Alternative A.~~

The hoary bat has the potential to roost in trees on the Madera site. Only a few trees exist on the Madera site. Removal of these trees would constitute a less than significant impact. Nonetheless, mitigation in **Section 5.2.4** will minimize impacts to the hoary bat.

Burrowing owls have the potential to nest on the Madera site. During the biological survey no individuals were observed on-site. Nonetheless, mitigation in **Section 5.2.4** will minimize potential impacts to burrowing owls.

FEDERALLY LISTED SPECIES

As discussed in **Section 3.5.4**, no Federal special-status species were observed on site. Biological field surveys showed the Madera site is ruderal and subject to constant human disturbance. Therefore, it does not provide habitat for the Federally-listed special-status invertebrates, fish, amphibians, reptiles, or plant species.

MIGRATORY BIRD AND OTHER FEDERAL SPECIAL-STATUS BIRD SPECIES

The development of Alternative A would affect vegetation communities that could potentially support active migratory bird nests. Migratory birds and their nests are protected from “take” according to the federal Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711), makes it unlawful to “*pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess. . . or any part, nest, or egg of any such bird*” (50 CFR 10) (USFWS, 2007a). Alternative A could adversely affect active migratory bird nests if vegetation removal activities associated with project construction occur during the nesting season. This is potentially a significant impact. Potential adverse direct effects to migratory birds and other special-status bird species will be avoided or minimized by implementation of the mitigation measures identified in **Section 5.2.4**.

Increased lighting has been shown to increase collisions of birds and structures, as well as causing a disorientation effect on species. Thus, nighttime lighting from the operation of the Alternative A could have a potentially significant impact on both migrating and local bird populations. Mitigation measures to reduce potentially significant nighttime lighting impacts are identified in **Section 5.2.4**.

WATERS OF THE U.S.

A delineation of waters of the U.S. occurring within the site identified Schmidt Creek realignment ditch and other seasonal wetlands totaling 8.51 acres (H. T. Harvey & Associates, 2005). These features are subject to U.S. Army Corps of Engineers (USACE) jurisdiction under the Clean Water Act and any discharge of dredged or fill material within the drainages would require a Department of the Army permit.

There are no anticipated direct effects due to the construction of facilities to jurisdictional waters of the U.S. because the proposed casino and associated facilities are all located elsewhere on the Madera site. A clear-span bridge is proposed over the Airport ditch to connect the access road to Road 23, thereby avoiding any impact to the creek. All other jurisdictional waters of the U.S. have been avoided in the design phase and protected from indirect effects by a 50-foot buffer.

4.5.2 ALTERNATIVE B – REDUCED INTENSITY

POTENTIAL EFFECTS TO WILDLIFE AND HABITATS

Terrestrial Resources

Development of Alternative B would affect the dry wheat field habitat that is primarily used by wildlife species accustomed to human disturbance (see the vegetation community descriptions in **Section 3.5.2**). **Table 4.5-2** provides a summary of the acreage of each habitat type that would be affected under the three different surface wastewater disposal options for Alternative B, as described in **Section 2.3.6**. **Figure 2-12** shows the three different options for the wastewater facilities. As shown in **Table 4.5-2**, Option 1 and Option 3 would affect approximately 32% and 31% of the 305 acres respectively, primarily dryland wheat fields. Option 2 would affect approximately 40% of the property, also dryland wheat fields. This habitat provides limited resources for wildlife due to frequent plowing and weed control measures associated with farming practices. Furthermore, farming practices disrupt burrows and groundcover used by fossorial mammals. Species found in cultivated habitats are typically widespread. Implementation of Alternative B, however, would result in a significant impact to Swainson's hawk. Adverse effects to Swainson's hawk will be minimized by implementation of the mitigation measures identified in **Section 5.2.4**.

TABLE 4.5-2
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE B

Configuration Number	Habitat Type	Acreage Affected	Percentage Affected
Option 1	Dryland Wheat Fields	98.7	32%
Option 2	Dryland Wheat Fields	122.5	40%
Option 3	Dryland Wheat Fields	95.2	31%

SOURCE: H. T. Harvey & Associates, 2004; AES, 2005.

Aquatic Resources

Similar to Alternative A, potential impacts to Schmidt Creek and downstream habitat from the discharge of tertiary treated wastewater include changes in flow and vegetation characteristics of the waterways. As with Alternative A, the addition of a permanent water source in Schmidt Creek ditch would stimulate the growth of hydrophytic vegetation and ultimately create conditions for the growth of a diverse riparian habitat, a less than significant impact. One way the discharge could potentially impact the aquatic habitat is if the discharged effluent increases the water temperature of Dry Creek by more than five degrees Fahrenheit. This impact can be avoided by the implementation of mitigation measures in **Section 5.2.4**.

STATE SPECIAL-STATUS SPECIES

Alternative B would result in fewer impacts to State special-status species because it would develop a smaller area. Species with the potential to occur on the Madera site are discussed under Alternative A. These species are not necessarily afforded protection under the Federal Endangered Species Act. Nevertheless, mitigation is provided in **Section 5.2.4** for potential impacts to state special-status species.

FEDERALLY LISTED SPECIES

Due to the relatively close configuration of each option associated with Alternative B and Alternative A, potential project impacts are similar to the potential impacts generated by Alternative A. The primary difference between the two alternatives is that Alternative B will use less acreage. No project-related impacts are expected to occur to other Federal special-status species. Biological surveys showed the Madera site does not provide habitat for the special-status invertebrates, fish, amphibians, reptiles, or plant species identified to occur in the Kismet, California 7.5' USGS quadrangle.

MIGRATORY BIRD AND OTHER SPECIAL-STATUS SPECIES

Alternative B could adversely affect active migratory bird nests if vegetation removal activities associated with project construction occur during the nesting season. This is potentially a significant impact. Potential adverse direct effects to migratory birds and other special-status species will be avoided or minimized by implementation of the mitigation measures identified in **Section 5.2.4**.

Increased lighting has been shown to increase collisions of birds and structures, as well as causing a disorientation effect on species. Thus, nighttime lighting from the operation of the Alternative B could have a potentially significant impact on both migrating and local bird populations. Mitigation measures to reduce potentially significant nighttime lighting impacts are identified in **Section 5.2.4**.

WATERS OF THE U.S.

There are no anticipated direct effects, due to the construction and placement of the facilities, to potentially jurisdictional waters of the U.S. As with Alternative A, the project has been designed to avoid potentially jurisdictional wetlands on the site (i.e., 50-foot buffer) and would include a clear-span bridge to connect the access road with Road 23.

4.5.3 ALTERNATIVE C – NON-GAMING USE

POTENTIAL EFFECTS TO WILDLIFE AND HABITATS

Terrestrial Resources

Despite the reduction in the intensity of land development, the grading footprint of Alternative C would be generally similar to the previous alternatives. As previously stated, most species utilizing the dry wheat field habitat are wildlife that has grown accustomed to and can coexist with human disturbance. **Table 4.5-3** provides a summary of the acreage of each habitat type that would be affected under the three different surface wastewater disposal options for Alternative C, as described in **Section 2.4.6.**, and shown in **Figure 2-17**. As shown in **Table 4.5-3**, Option 1 and Option 3 would affect approximately 26% of the 305 acres, primarily dryland wheat fields. Option 2 would affect 27% of the property, also dryland wheat fields. This habitat provides

TABLE 4.5-3
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE C

Configuration Number	Habitat Type	Acreage Affected	Percentage Affected
Option 1	Dryland Wheat Fields	80.8	26.5%
Option 2	Dryland Wheat Fields	82.7	27%
Option 3	Dryland Wheat Fields	80.4	26%

SOURCE: H. T. Harvey & Associates, 2004; AES, 2005.

limited resources for wildlife due to frequent plowing and weed controls associated with farming practices. Furthermore, farming practices disrupt burrows and groundcover used by fossorial mammals. Species found in cultivated habitats are typically widespread and accustomed to disturbances. Implementation of Alternative C, however, would result in a significant impact to Swainson's hawk. Adverse effects to Swainson's hawk will be minimized by implementation of the mitigation measures identified in **Section 5.2.4**.

Aquatic Resources

Potential impacts to Schmidt Creek and downstream aquatic habitat from the discharge of tertiary treated wastewater include changes in flow and vegetation characteristics of the waterways. These impacts would be similar to Alternative A, except that treated wastewater flows would be much lower with Alternative C. As with Alternative A, the addition of a permanent water source

in Schmidt Creek ditch would stimulate the growth of hydrophytic vegetation and ultimately create conditions for the growth of a diverse riparian habitat, a less than significant impact. One way the discharge could potentially impact the aquatic habitat is if the discharged effluent increases the water temperature of Dry Creek by more than five degrees Fahrenheit. This impact can be avoided by the implementation of mitigation measures in **Section 5.2.4**.

STATE SPECIAL-STATUS SPECIES

Alternative C would result in fewer impacts to State special-status species because it would develop a smaller area. Species with the potential to occur on the Madera site are discussed under Alternative A. These species are not necessarily afforded protection under the Federal Endangered Species Act. Nevertheless, mitigation is provided in **Section 5.2.4** for potential impacts to state special-status species.

FEDERALLY LISTED SPECIES

Alternative C is reduced significantly in overall size, as compared with Alternatives A and B, and potential project impacts are similar to those generated by the other two alternatives. Biological surveys showed the Madera site does not provide habitat for any Federal special-status species identified to occur in the Kismet, California 7.5' USGS quadrangle or the surrounding eight quadrangles. Alternative C will therefore not impact any Federally-listed species.

MIGRATORY BIRD AND OTHER SPECIAL-STATUS SPECIES

Alternative C could adversely affect active migratory bird nests if vegetation removal activities associated with project construction occur during the nesting season. This is potentially a significant impact. Potential adverse direct effects to migratory birds and other special-status species will be avoided or minimized by implementation of the mitigation measures identified in **Section 5.2.4**.

Increased lighting has been shown to increase collisions of birds and structures, as well as causing a disorientation effect on species. Thus, nighttime lighting from the operation of the Alternative C could have a potentially significant impact on both migrating and local bird populations. Mitigation measures to reduce potentially significant nighttime lighting impacts are identified in **Section 5.2.4**.

WATERS OF THE U.S.

As with Alternative A and Alternative B, there are no anticipated direct effects, from the development of facilities, to potentially jurisdictional waters of the U.S. The footprint of Alternative C is similar to the previous alternatives, though the land use is changed, and would

retain the previously mentioned buffers (around identified wetlands) and clear-span bridge to connect to Road 23.

4.5.4 ALTERNATIVE D - NORTH FORK LOCATION

POTENTIAL EFFECTS TO WILDLIFE AND HABITATS

Terrestrial Resources

Development of Alternative D would affect Interior Live Oak Woodland that is utilized by a wide variety of fauna. The complete layout of the complex and associated facilities is within the Interior Live Oak Woodland, and as such would affect the vegetation community as well as three streams located in the proposed development area. **Table 4.5-4** provides a summary of the acreage of the habitat type that would be affected under the three different surface wastewater disposal options for Alternative D, as described in **Section 2.5.6.**, and shown in **Figure 2-20**. As shown in **Table 4.5-4**, all three options would affect approximately ten percent of the total 78.8 acres on the North Fork site. Furthermore, the development of the site would cause wildlife species, indigenous to the area, to utilize other similar geographic regions. Although there is an abundance of similar habitat within the area and an impact of approximately 8 acres is relatively insignificant, the value lies in the mostly undisturbed nature of the site (intrinsic value). Wildlife, unaccustomed to human disturbance, would decrease not only in the immediate area but also along the periphery of the development, being displaced by species adapted to human activity. This impact would be significant and mitigation measures are outlined in **Section 5.2.4**.

TABLE 4.5-4
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE D

Configuration Number	Habitat Type	Acreage Affected	Percentage Affected
Option 1	Interior Live Oak Woodland	7.9	10%
	Stream Habitat	0.2	16%
Option 2	Interior Live Oak Woodland	9.4	12%
	Stream Habitat	0.2	16%
Option 3	Interior Live Oak Woodland	7.1	9%
	Stream Habitat	0.2	16%

SOURCE: H. T. Harvey & Associates, 2004; AES, 2005.

Aquatic Resources

Potential impacts to the on-site unnamed tributary of Willow Creek and downstream aquatic habitat from the discharge of tertiary treated wastewater include changes in flow and vegetation characteristics of the waterways. The unnamed tributary is an ephemeral stream and the addition a permanent water source would stimulate the growth of hydrophytic vegetation and ultimately create conditions for the growth of a diverse riparian habitat. The downstream waters, Willow

Creek, would benefit from increased flows of high quality recycled water by providing better habitat for resident rainbow trout.

If the discharged effluent increases the water temperature of Willow Creek by more than five degrees Fahrenheit, it could significantly impact aquatic species downstream of the confluence of Willow Creek and the unnamed tributary. This impact can be avoided by the implementation of mitigation measures in **Section 5.2.4**.

STATE SPECIAL-STATUS SPECIES

Section 3.5.4 states that three State special-status species have the potential to occur on the North Fork site: the tree anemone, the northern goshawk and the pallid bat. If these species occur on the North Fork site, Alternative D would potentially impact them by removing nesting and foraging habitat. The North Fork site is within lands held in Trust by the U. S. government, so State-listed species are not afforded the same protections as Federally-listed species. The potential for Alternative D to impact these species is discussed below.

The tree anemone was not observed on the North Fork site during surveys performed on May 11 and 12, 2005. These surveys were conducted during this species' bloom period, which is from May to July. Alternative D is not expected to impact this species.

The northern goshawk typically breeds at either higher altitudes or higher latitudes than the North Fork site. This species was not observed on the site and no impacts to northern goshawk breeding habitat are expected to result from Alternative D.

The pallid bat has the potential to roost in buildings and tree cavities on the North Fork site. Between 7.1 and 9.4 acres of interior live oak habitat (**Table 4.5-4**), as well as existing structures, will be removed. Removal of several acres of woodland and existing structures would constitute a potentially significant impact. Mitigation in **Section 5.2.4** will ensure that any impacts would be less than significant.

FEDERALLY LISTED SPECIES

Table 3.5-4, (**Section 3.5.4**) lists six species that could potentially be affected by the development of Alternative D. Of these species, two have the potential to occur on the project site: Mariposa pussypaws (*Calyptridium pulchellum*) and valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*).

Mariposa Pussypaw (*Calyptridium pulchellum*)

Federal Status - Threatened The North Fork site has habitat for the Federal special-status plant species Mariposa pussypaws. As described in **Table 3.5-4**, habitat for this species is chaparral and cismontane woodland on granitic substrate. The loss of Interior Live Oak Woodland

(acres shown in **Table 4.5-4**) could significantly affect these species. Mitigation measures to avoid potential impacts to special-status plant species are identified in **Section 5.2.4**.

Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)

Federal Status - Threatened

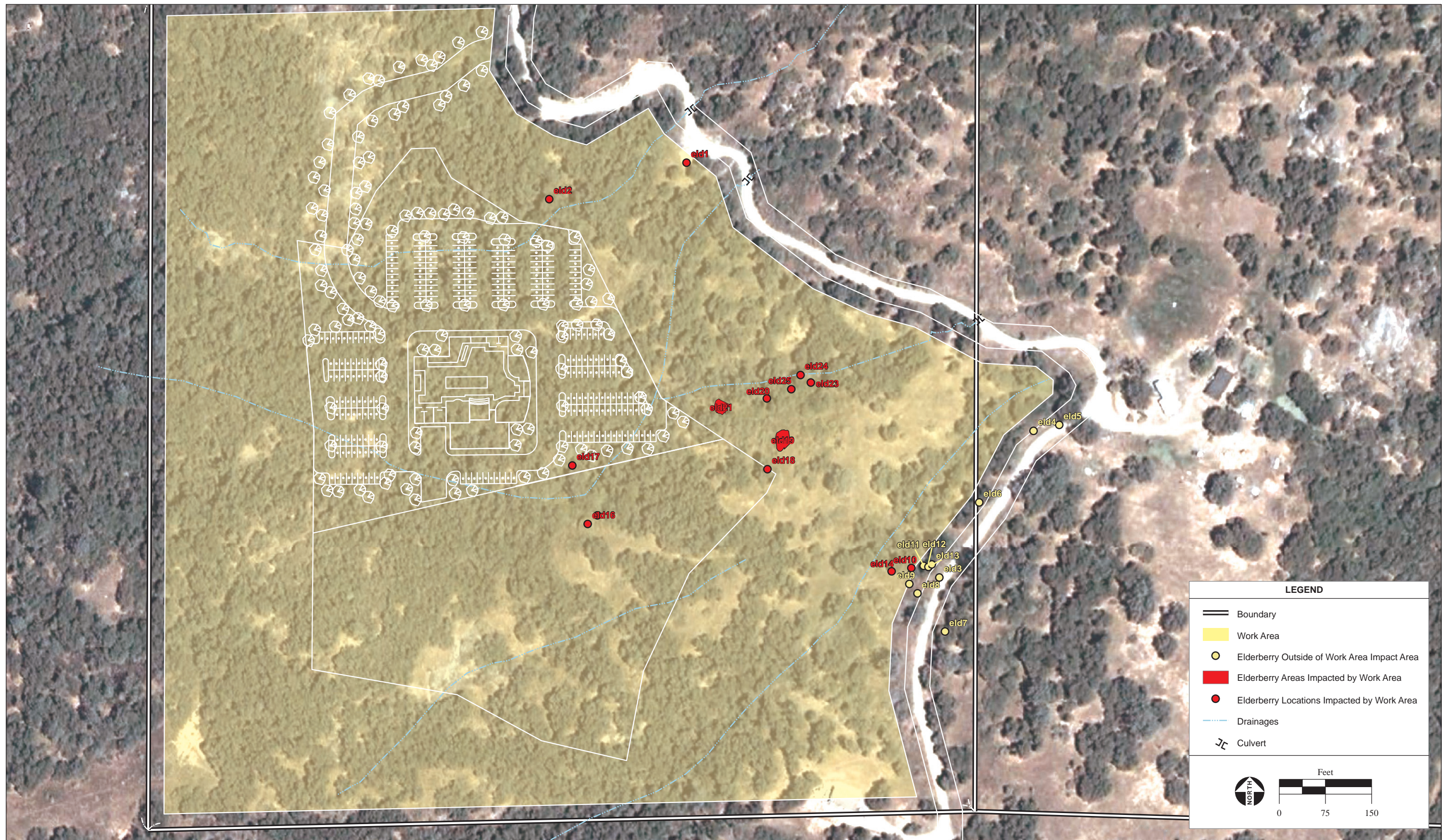
Elderberry shrubs (*Sambucus* spp.), the host plant for the VELB, occur in the Open Foothill Pine Woodland and Interior Live Oak Woodland habitats on the North Fork site. Due to the presence of the shrubs, development of the site could significantly impact VELB populations. Of the 52 plants found on the North Fork site, 50 have the potential to be impacted by Alternative D. These shrubs are described in **Table 4.5-5** and shown in **Figure 4.5-1**.

TABLE 4.5-5
ANTICIPATED EFFECTS TO ELDERBERRY BUSHES – ALTERNATIVE D

Location	No. of Plants	Stem diameters (inches)			Exit Holes Present?	In Riparian Habitat?
		1" to 3"	3" to 5"	> 5"		
eld1	1	6	0	0	no	yes
eld2	2	0	0	0	no	yes
eld3	8	6	0	0	yes	yes
eld4	3	8	0	0	yes	yes
eld5	6	4	0	0	yes	yes
eld6	1	0	0	0	no	yes
eld8	1	6	0	0	no	no
eld9	1	1	0	0	no	no
eld10	1	2	0	0	no	yes
eld11	1	2	0	0	no	no
eld12	1	3	0	0	no	no
eld13	2	7	0	0	yes	no
eld14	1	1	0	0	no	yes
eld15	1	4	0	0	yes	yes
eld16	1	0	0	0	no	yes
eld17	1	5	0	0	no	yes
eld18	1	1	0	0	no	no
eld19	6	24	2	0	no	no
eld20	1	1	0	0	no	yes
eld21	2	15	0	0	yes	yes
eld22	4	0	0	0	no	yes
eld23	2	2	0	0	no	yes
eld24	1	1	0	0	no	yes
eld25	1	1	0	0	no	yes

SOURCE: AES, 2006.

The majority of these elderberries will be impacted by the grading necessary to stabilize the site prior to construction. Additionally, if Alternative D is adjusted to include widening of Mission Drive, the two shrubs in location eld7 on the eastern side of the road may also be impacted. Mitigation measures to reduce potential impacts to valley elderberry longhorn beetle are shown in **Section 5.2.4**.



SOURCE: DigitalGlobe/GoogleEarth Aerial Photograph; Friedmutter Group, 2005; AES, 2006

North Fork Casino EIS / 204502 ■

Figure 4.5-1
Impacts to Elderberry Longhorn Beetle Habitats

MIGRATORY BIRD AND OTHER SPECIAL-STATUS SPECIES

The development of Alternative D would affect vegetation communities that could potentially support active migratory bird nests. Migratory birds and their nests are protected from “take” according to the Federal Migratory Bird Treaty Act. Alternative D could adversely affect active migratory bird nests if vegetation removal activities associated with project construction occur during the nesting season. This is potentially a significant impact. Potential adverse direct effects to migratory birds and other special-status species will be avoided or minimized by implementation of the mitigation measures identified in **Section 5.2.4**.

Increased lighting has been shown to increase collisions of birds and structures, as well as causing a disorientation effect on species. Thus, nighttime lighting from the operation of the Alternative D could have a potentially significant impact on both migrating and local bird populations. Mitigation measures to reduce potentially significant nighttime lighting impacts are identified in **Section 5.2.4**.

Waters of the U.S.

H.T. Harvey and Associates conducted a delineation of the North Fork site on May 11 and 12, 2005. The delineation identified approximately 1.19 acres of potentially jurisdictional waters of the U.S and would require verification from the USACE. Potential project-related impacts to waters of the U.S. include the loss of three streams located in the northwestern portion of the property, totaling approximately 0.2 acres (**Table 4.5-6**). Other potential affects include dewatering, increased turbidity, increased temperature, and an increase in pollutant loads of downstream habitats.

TABLE 4.5-6
ANTICIPATED DIRECT EFFECTS TO WATERS OF THE U.S. – ALTERNATIVE D

Project Component	Acreage Affected
Casino Complex and Facilities	0.2
Total	0.2

SOURCE: H. T. Harvey & Associates, 2005; AES, 2005.

This is potentially a significant impact. A permit from the USACE pursuant to Section 404 of the Clean Water Act would need to be acquired prior to construction. Potential adverse direct effects to waters of the U.S. would be avoided or minimized by implementation of the mitigation measures identified in **Section 5.2.4**.

4.5.5 ALTERNATIVE E – NO ACTION

Under Alternative E, the No Action Alternative, the current agricultural and rural residential forms of land use for both the Madera site and North Fork site would remain unchanged. No impacts to biological resources would occur and no mitigation is required.

4.6 CULTURAL AND PALEONTOLOGICAL RESOURCES

4.6.1 ALTERNATIVE A – PROPOSED PROJECT

CULTURAL RESOURCES

Alternative A would not have a significant effect on known cultural resources. One site, remnants of a historic farm complex (AES-01-5-1) on the property has been identified, recorded, and evaluated as not eligible for the National Register of Historic Places (NRHP). The evaluation of the historical and architectural significance of the Daulton Farm found that it does not meet the criteria for inclusion on the NRHP. The State of California Office of Historic Preservation (SHPO) additionally provided concurrence with the finding in the Cultural Resources Study (Appendix J) that development would not be detrimental to historic properties. Therefore, Alternative A would not affect known historic resources.

There is a possibility that previously unknown archaeological resources will be encountered during construction. This would be a potentially significant effect. Mitigation measures are presented in **Section 5.2.5** for the treatment of unanticipated archaeological discoveries. Adoption of these mitigation measures would reduce impacts to less than significant.

PALEONTOLOGICAL RESOURCES

The significance of paleontological resources is determined in part in terms of compliance with the Antiquities Act of 1906 (PL 59-209; 16 United States Code 431 *et seq.*; 34 Stat. 225), which calls for the protection of historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on Federal land. Additional provisions appear in the Archaeological and Historic Data Preservation Act of 1974, as amended, related to the survey, recovery, and preservation of significant scientific, prehistoric, historic, archaeological, or paleontological data, in such cases where this type of data might be otherwise destroyed or irrecoverably lost as a result of Federal projects. Paleontological resources are important for their scientific and educational value. Fossil remains of vertebrates are considered significant resources. Invertebrate fossils are considered significant if they function as index fossils. Index fossils are those that appear in the fossil record for a relatively short and known period of time, allowing geologists to interpret the age of the geological formations in which they are found.

No known paleontological or unique geological resources exist on the Madera site. Given disturbance over time, primarily due to grading from agricultural operations, the upper layer of soils underlying the Madera site are not known to contain paleontological resources and have a low probability of containing unknown paleontological resources. However, the discoveries at the Fairmead Landfill site discussed in **Section 3.6** and the evidence of underlying Pleistocene Epoch deposits (**Appendix AA**) contribute to the potential for significant paleontological deposits to be present beneath the ground surface. Therefore, there is a possibility that unknown

paleontological resources could be encountered during construction. If encountered, construction upon exposed paleontological materials would likely cause destruction of these resources. This would be a potentially significant effect. Mitigation measures are presented in **Section 5.2.5** for the protection and preservation of unanticipated discoveries of paleontological resources. Adoption of these mitigation measures would reduce impacts to a less than significant level.

4.6.2 ALTERNATIVE B – REDUCED INTENSITY

CULTURAL RESOURCES

Alternative B would not have a significant effect on known cultural resources. One site, remnants of a historic farm complex (AES-01-5-1) on the property has been identified, recorded, and evaluated as not eligible for the National Register of Historic Places (NRHP). SHPO provided concurrence with the finding in the Cultural Resources Study (**Appendix J**) that development would not be detrimental to historic properties. Therefore, Alternative A would not affect known historic properties.

There is a possibility that previously unknown archaeological resources will be encountered during construction. This would be a potentially significant effect. Mitigation measures are presented in **Section 5.2.5** for the treatment of unanticipated archaeological discoveries. Implementation of these mitigation measures would reduce impacts to less than significant.

PALEONTOLOGICAL RESOURCES

No known paleontological or unique geological resources exist on the Madera site. Given disturbance over time, primarily due to grading from agricultural operations, the upper layer of soils underlying the Madera site are not known to contain paleontological resources and have a low probability of containing unknown paleontological resources. However, the discoveries at the Fairmead Landfill site discussed in **Section 3.6** and the evidence of underlying Pleistocene Epoch deposits (**Appendix AA**) contribute to the potential for significant paleontological deposits to be present beneath the ground surface. Therefore, there is a possibility that unknown paleontological resources could be encountered during construction. If encountered, construction upon exposed paleontological materials would likely cause destruction of these resources. This would be a potentially significant effect. Mitigation measures are presented in **Section 5.2.5** for the protection and preservation of unanticipated discoveries of paleontological resources. Implementation of these mitigation measures would reduce impacts to a less than significant level.

4.6.3 ALTERNATIVE C – NON-GAMING USE

CULTURAL RESOURCES

Alternative C would not have a significant effect on known cultural resources. One site,

remnants of a historic farm complex (AES-01-5-1) on the property has been identified, recorded, and evaluated as not eligible for the NRHP. SHPO provided concurrence with the finding in the Cultural Resources Study (Appendix J) that development would not be detrimental to historic properties. Therefore, Alternative A would not affect known historic properties.

There is a possibility that previously unknown archaeological resources will be encountered during construction. This would be a potentially significant effect. Mitigation measures are presented in **Section 5.2.5** for the treatment of unanticipated archaeological discoveries. Implementation of these mitigation measures would reduce impacts to less than significant.

PALEONTOLOGICAL RESOURCES

No known paleontological or unique geological resources exist on the Madera site. Given disturbance over time, primarily due to grading from agricultural operations, the upper layer of soils underlying the Madera site are not known to contain paleontological resources and have a low probability of containing unknown paleontological resources. However, the discoveries at the Fairmead Landfill site discussed in **Section 3.6** and the evidence of underlying Pleistocene Epoch deposits (**Appendix AA**) contribute to the potential for significant paleontological deposits to be present beneath the ground surface. Therefore, there is a possibility that unknown paleontological resources could be encountered during construction. If encountered, construction upon exposed paleontological materials would likely cause destruction of these resources. This would be a potentially significant effect. Mitigation measures are presented in **Section 5.2.5** for the protection and preservation of unanticipated discoveries of paleontological resources. Implementation of these mitigation measures would reduce impacts to a less than significant level.

4.6.4 ALTERNATIVE D – NORTH FORK LOCATION

CULTURAL RESOURCES

Although seven archaeological sites have been previously identified on the North Fork site (**Section 3.6.5**), only one site is located within the immediate vicinity of the proposed development area of the North Fork site. P-20-2358 is a prehistoric resource composed of two granitic bedrock mortar outcrops and a sparse lithic scatter. One outcrop contains 9 cups and one contains 2 cups. The site is located on the north side of a seasonal draw, just west of an open area of steeply sloped granitic outcrops and boulders and may be impacted by slope stabilization activities. P-20-2358 could be effected by construction activities. This would be a significant impact. Mitigation measures are presented in **Section 5.2.5** for the treatment of unanticipated archaeological discoveries. Implementation of these mitigation measures would reduce impacts to less than significant.

Additionally, there is a possibility that previously unknown archaeological resources will be encountered during construction. This would be a potentially significant effect. Mitigation measures are presented in **Section 5.2.5** for the treatment of unanticipated archaeological discoveries. Implementation of these mitigation measures would reduce impacts to less than significant.

PALEONTOLOGICAL RESOURCES

No known paleontological or unique geological resources are known to exist in the project area. Geologic formations that underlie the North Fork site have a low probability of containing paleontological resources. Therefore, no significant effects are expected to known paleontological resources.

There is always the likelihood that previously unknown paleontological resources would be encountered during construction. If encountered, construction upon exposed paleontological materials would likely cause destruction of these resources. This would be a potentially significant effect. Mitigation measures are presented in **Section 5.2.5** for the protection and preservation of unanticipated discoveries of paleontological resources. Implementation of these mitigation measures would reduce impacts to a less than significant level.

4.6.5 ALTERNATIVE E – NO ACTION

Under Alternative E, no change in existing land use is expected either on the North Fork or Madera sites. Given that existing rural residential and agricultural uses are relatively low-impact land uses and are not known to have resulted in the degradation of known cultural resources to date, no significant effects to cultural or paleontological resources would occur as a result of Alternative E.

4.7 SOCIOECONOMIC CONDITIONS AND ENVIRONMENTAL JUSTICE

4.7.1 SOCIOECONOMIC CONDITIONS

This section provides an analysis of the socioeconomic effects of each alternative. Effects analyzed include employment impacts from construction and operation, potential population growth from construction and operation, potential social effects including crime and problem gambling, effects to surrounding property values, additional costs and revenues to local governments, and increased pumping costs for neighboring wells. A socioeconomic study has been completed that analyzes the socioeconomic impacts of each alternative (Innovation Group, 2008). A copy of this study appears in **Appendix R**.

ALTERNATIVE A – PROPOSED PROJECT

Employment

Alternative A's effects on employment would come in both the construction and operational phases. The impacts of construction are only felt for the duration of construction spending so they are necessarily temporary. The operational effects are felt as long as the casino/hotel resort is in operation.

The effects are measured in three ways: direct employment, indirect employment and induced employment. Direct employment includes those employees who are directly employed at the facility either during construction or during operation. Indirect employment includes those employees who provide services and are employed at least in part due to the facility but are not directly employed at the facility. These employees include the baker who provides bread to a casino restaurant or the wholesaler that provides doors for the hotel. Generally, these jobs are categorized as those created from project spending. The third category is induced employment. This category includes all the other jobs that are created due to the ripple effect of spending throughout the economy as a whole. Examples include the hair dresser who cuts the hair of an employee or the investment advisor who maintains a construction worker's individual portfolio. Generally, these jobs are categorized as those that are created through direct and indirect employment spending.

In order to measure these impacts, the Regional Input-Output Modeling System (RIMS II) produced by the Bureau of Economic Analysis, US Department of Commerce was utilized. When provided changes in output in a sector or sectors of economy, this model estimates the direct, indirect and induced changes in the economy's output, employment and earnings. For the purposes of this Environmental Impact Statement (EIS), Madera County is the study area.

As described below, Alternative A would result in the creation of numerous employment opportunities within Madera County, which would be a beneficial effect to the region's unemployment rate and the local economy as a whole.

Construction

Construction employment and spending is temporary, but it can have substantial impacts on the economy. For Alternative A, construction spending is estimated to be almost \$422 million.

Table 4.7-1 details the projected spending.

TABLE 4.7-1
CONSTRUCTION COSTS – ALTERNATIVE A

Construction Phase	Estimated Cost (dollars)
Design	13,266,000
General Construction	285,264,328
Soft Costs	94,495,500
Contingency	28,929,765
<i>Total</i>	<i>421,955,593</i>

NOTE: Soft costs include furniture, fixtures, financing fees, equipment, etc.

SOURCE: Innovation Group, 2008.

Based on the almost \$422 million in spending for construction, RIMS II projects that Alternative A would create 2,441 jobs. Although most of these jobs fall within the construction sector, they are spread out over 20 different segments of the economy because other jobs would be created in the short term to serve the construction employees and construction operation (Innovation Group, 2008). These jobs would be filled by workers that commute to the area and local residents, some of which may currently be unemployed. This would result in a temporary reduction in the unemployed population and in the unemployment rate, a beneficial impact to the local economy.

Operation

Operational employment includes those jobs that are generated from the operation of Alternative A. These impacts would last as long as the casino/hotel resort is in operation. Direct employment includes all positions at the casino and hotel. SC Madera Management, LLC (the Tribe's management/development partner) anticipates that the Alternative A project facilities would employ 1,291 full-time employees and 283 part-time employees or 1,461 full-time equivalent employees (FTEs).

Indirect employment includes those jobs that provide support services to but are not directly paid by the casino/hotel resort. Induced employment calculates the impacts of these direct and indirect jobs on the rest of the economy as spending by direct and indirect employees ripples through the economy. RIMS II projects that Alternative A would create 2,319 jobs in Madera County

(Table 4.7-2). Of those, 858 are indirect and induced jobs. Most of the direct jobs fall within the arts, entertainment and recreation, and accommodation and food services sectors. Indirect and induced jobs are spread out over 20 different segments of the economy (Innovation Group, 2008).

As stated in Section 3.7.1 and Appendix R, unemployment in Madera County is relatively high, with an average unemployed population of approximately 4,900, resulting in an unemployment rate of approximately 7.6 percent in 2007. Most of the 2,319 jobs created by Alternative A are expected to be filled by County residents (between 65 and 73.5 percent – see Appendix R) and most of the Madera County residents filling the jobs are expected to be currently unemployed given the availability of unemployed workers in the local labor market, resulting in a reduction in the unemployed population and a corresponding reduction in the unemployment rate. This would be a beneficial impact to the local economy.

TABLE 4.7-2
OPERATION IMPACT ON EMPLOYMENT – ALTERNATIVE A

Employment Sector	Jobs Created
Agriculture, Forestry, Fishing and Hunting	4.06
Mining	0.23
Utilities	0.88
Construction	8.21
Manufacturing	23.30
Wholesale Trade	12.03
Retail Trade	88.23
Transportation and Warehousing	14.74
Information	11.69
Finance and Insurance	8.21
Real Estate, Rental, and Leasing	19.34
Professional, Scientific, and Technical Services	9.96
Management of Companies and Enterprises	20.75
Administrative and Waste Management Services	18.14
Educational Services	3.89
Health Care and Social Assistance	48.65
Arts, Entertainment, and Recreation	1,316.82
Accommodation and Food Services	665.26
Other Services	35.11
Households	9.13
<i>Total (rounded to nearest single job)</i>	<i>2,319</i>

SOURCE: Innovation Group, 2008.

Population

Given that Alternative A is projected to increase employment in Madera County by 2,441 temporary positions and 2,319 permanent positions, it is necessary to estimate how that increase in employed persons would affect the population as a whole. An increase in population is not itself an environmental impact. However, an increase in population could lead to impacts such as 1) creating demand for governmental services, which is discussed in more detail below, and 2) creating growth in housing or other facilities to serve the increase in population, which is discussed in more detail in Section 4.12.

Construction

The 2,441 temporary construction jobs would not result in an increase in local population. It is typical for construction workers to travel for employment opportunities during the week and then return home on the weekends. Thus, it is expected that those jobs that can be filled locally would be and those that cannot would be filled by individuals who would travel for the work as opposed to relocating. Therefore, the population would not show any change from the influx of temporary construction jobs.

Operation

The 2,319 permanent jobs created by Alternative A would result in increases in the local population because some of these jobs would be filled by individuals who move into Madera County for employment. In order to project what percentage of people will move into the County, it must be determined what percentage of individuals working at the casino/hotel resort would live in Madera County.

Under the Memorandum of Understanding (MOU) between the Tribe and Madera County, the Tribe has agreed to make a good faith effort to ensure that 50 percent of its employees live in Madera County. The Chukchansi Casino, also in Madera County and of comparable size to the proposed hotel/casino resort, made the same goal when it opened in June 2003. The Chukchansi were able to meet this goal and, in fact, exceeded it. Of the approximately 1,600 Chukchansi casino/hotel employees (in 2005), 65 percent live in Madera County (Innovation Group, 2008).

Given the still large number of unemployed in Madera County and the experience at Chukchansi, the Tribe is not expected to have a problem meeting the 50 percent goal, and it is projected that 65 percent or 950 of the direct casino/hotel resort jobs would be Madera County residents. Note that the opening of Alternative A is expected to have an impact on revenues, and hence employment, at the Chukchansi Casino. The current number of employees at Chukchansi is unknown as they may have hired more employees with their recent expansion. Nonetheless, the opening of the Alternative A casino is expected to result in a 15 to 20 percent reduction in employment at Chukchansi. Therefore, some Madera County residents would no longer be employed at Chukchansi, but could easily find employment at the Alternative A facilities.

Some of the 858 indirect and induced jobs would also be filled by Madera County residents. According to U.S. Census data from 2000, 26.5% of Madera County's employees commute from outside the County. That means that 73.5% of the jobs in Madera County are held by residents of the County. Assuming that this commute pattern would hold constant for the new casino employees, 631 of these new positions would be filled by Madera County residents.

Internal studies conducted by both the Madera Unified School District and the Madera County Department of Behavioral Health found no significant impact on these departments by the

opening of the Chukchansi Casino in 2003 (Innovation Group, 2008). Given this experience and the large number of unemployed in the County, the number of people moving into the County for indirect or induced employment opportunities would be low. It is conservatively estimated that 20 percent of the employees residing in Madera County will be new residents, although the actual percentage may be lower (Innovation Group, 2008).

If 20% of the new employees who live in Madera County are new residents of Madera County, then the number of employees that move into the County would be 316 (**Table 4.7-3**). The 316 figure includes 20% of the 950 direct employees expected to live in the County and 20% of the 631 indirect and induced employees expected to live in the County.

If 316 new employees move into Madera County, these would not be the only new residents in the County who moved in because of the casino. These employees would in some cases bring families. To account for this, an employee per household ratio was calculated for Madera County. Given the 2007 average labor force of 64,400 and a 2007 household estimate of 42,900, there is a 1.5 ratio of laborers to households. To be conservative in the estimate of casino impacts on the County, the ratio of new employees per household was assumed to be 1.2. Using 2000 Census data, the number of persons per household in Madera County was calculated to project the number of new residents in Madera County. As shown in **Table 4.7-3**, a total of 836 new residents would move into Madera County as a result of Alternative A, increasing the population from 147,778 to 148,614.

Some of these new residents would move into the Cities of Madera or Chowchilla. Others would move into unincorporated areas of the County. In order to measure impacts, it is necessary to determine where these new residents would reside. On average, 44 percent of new County residents move into the City of Madera, 8 percent move into the City of Chowchilla, and 48 percent move into unincorporated areas of the County. However, given that developments on the Madera site would be located so close to the City of Madera, City and County officials estimated that between 50 – 75 percent of new County residents would move into the City. We therefore project that 60 percent of new residents would move into the City of Madera. We assume that the typical 8 percent rate would remain for moves into the City of Chowchilla. The remaining 32 percent would reside in unincorporated Madera County under Alternative A. Thus, as noted above, approximately 836 new County residents are expected under Alternative A, with 502 expected to settle in the City of Madera, increasing the City population from 54,195 to 54,697. An additional 67 residents would settle in the City of Chowchilla, raising the population from 13,254 to 13,321. Finally, an additional 268 residents would settle in unincorporated Madera County, raising the unincorporated population from 80,329 to 80,597 (Innovation Group, 2008 – **Appendix R**).

TABLE 4.7-3
NEW RESIDENTS IN MADERA COUNTY – ALTERNATIVE A

Direct, indirect, and induced jobs filled by Madera County residents	1,581
New employees moving to Madera County ¹	316
Number of employees per household	1.2
Number of new households ²	263
Number of persons per household	3.18
<i>Total New Residents</i> ³	<i>836</i>

NOTES: ¹20% of jobs filled by Madera County residents
²New employees moving to Madera County divided by number of employees per household
³Number of new households multiplied by number of persons per household

SOURCE: Innovation Group, 2008.

Social Effects

Crime

To estimate the probable impacts of Alternative A on crime, the following five California communities were surveyed that have had Indian casinos within close proximity or in their jurisdiction for at least the past two years:

- Thunder Valley Casino in Lincoln, Placer County,
- Chumash Casino Resort in Santa Ynez, Santa Barbara County,
- Pala Casino Resort and Spa, in Pala, San Diego County,
- Spa Resort Casino in Palm Springs, Riverside County, and
- Barona Valley Ranch Resort and Casino in Lakeside, San Diego County.

Each of these casinos offers slot machines, gaming tables and hotel accommodations with the exception of Thunder Valley Casino (no hotel accommodations). **Table 4.7-4** summarizes the year in which each casino opened, square footage of the casino, number of slot machines, number of gaming tables, number of hotel rooms and the city population. All of the facilities opened in 2003, except for the

TABLE 4.7-4
COMPARATIVE CASINOS

	Location	Year Opened	Casino Square Footage	No. of Slot Machines	No. of Hotel Rooms	Local Population (2000)
Thunder Valley Casino	Lincoln, Placer County, CA	2003	200,000	2,700	0	13,900
Chumash Casino Resort	Santa Ynez, Santa Barbara County, CA	2003 (casino) 2004 (hotel)	94,000	2,000	106	4,584
Pala Casino Resort and Spa	Pala, San Diego County, CA	2001	185,000	2,250	507	133,559
Spa Resort Casino	Palm Springs, Riverside County, CA	2003	45,000	1,000	228	42,807
Barona Valley Ranch Resort and Casino	Lakeside, San Diego County, CA	2003	310,000	2,000	397	19,560

SOURCE: Analytical Environmental Services, 2005; Bay Area Economics, 2005.

Pala Casino Resort and Spa, which opened in 2001. Spa Resort Casino in Palm Springs has the smallest square footage dedicated to its casino (45,000 square feet) whereas Barona Valley Ranch Casino has the largest casino square footage of 310,000. Each casino offers an average of 2,000 slot machines, an average of 70 gaming tables, and if available, an average of approximately 300 hotel rooms.

Local law enforcement offices were contacted to inquire about the impacts of the casinos and whether the facilities induced a higher incidence of crime. In addition, historical crime statistics were reviewed for a correlation between the presence of casinos and higher than average crime rates. Local social service agencies were also contacted to document any increase in social service demand since the opening of the casinos. Finally, a literature review on the topic of the social impacts of casino gambling was conducted. A brief summary of the general conclusions found in literature on the subject can be found under each issue area below, where applicable. Research was also completed on the Chukchansi Casino in Madera County. The results of this research are discussed specifically for each issue area, where applicable.

Each local law enforcement agency contacted reported an increase in law enforcement service demand as a direct result of the opening of a casino within its jurisdiction. All reported the typical crimes and/or calls for service that have increased are, but are not limited to: driving under the influence, personal robbery, credit card fraud, auto thefts, disorderly conduct, and assault. Although instances of these crimes have increased in all of the casino communities, no department could implicate the casino as the direct cause of the increase in crime. Rather, each department expressed that the increased concentration of people within the local area led to the increase in crime. It was determined that total number of crimes is minimal in comparison to the overall number of crimes in the surrounding communities. Chumash Casino in Santa Ynez had 204 calls for service in 2003, 20 of which were larceny-theft arrests, and one of which resulted in a violent crime arrest, out of 8,536 arrests throughout the host County. Pala Casino Resort and Spa in Pala, California had 181 calls for service in 2003, 21 of which were property crime arrests, 12 of which were larceny-theft arrests, and six of which resulted in violent crime arrests. A total of 110,642 arrests occurred in the Pala host County. All departments reported the largest impact directly attributed to the casino in their community is the increase in traffic and traffic-related accidents.

In addition to the interviews with local law enforcement officials, uniform crime reporting statistics were also compiled for the different host communities and published by the State Attorney General's Office. Crime data for the local jurisdiction as well as the overall county in which each is located were collected. Per capita crime rates were calculated by combining this information with population figures for each area. These data show that crime rates in Lincoln,

the community nearest the Thunder Valley Casino, are very similar to the rates in Placer County overall. Crime rates in unincorporated Santa Barbara County, where the Chumash Casino Resort is located, are slightly below the County average. Crime rates in Palm Springs, where the Spa Resort and Casino is located, are higher than in Riverside County overall. Crime rates in unincorporated San Diego County, where the Barona Valley Ranch Resort and Spa and Pala Casino Resort and Spa are located, are significantly below the crime rates in the County overall. With three local jurisdictions experiencing lower crime rates, one experiencing comparable crime rates, and one jurisdiction experiencing greater crime rates, these data do not show a definitive link between crime rates and the presence of casinos.

In addition to a survey of California communities that contain Indian casinos, a literature review was conducted to determine the relationship of gaming to crime rates. While several studies found an increase in crime within an area after the opening of a new casino, the amount was not much different than from the opening of any other type of tourist attraction. The National Opinion Research Center (NORC), in one of the more comprehensive studies on the link between casinos and crime, found that insufficient data exists to quantify or determine the relationship between casino gambling within a community and crime rates (NORC, 1999).

After surveying similar California casino communities and reviewing relevant literature, no definitive link between casinos and regional crime rates was found. Therefore, although an increase in calls for service is expected, an increase in regional crime rates would not result from Alternative A. Thus, Alternative A's impact to crime would be less than significant.

Problem Gambling

Problem gambling disorders can result in a host of social ills and destructive behaviors to those afflicted by the disorder, including increased likelihood of bankruptcy, suicide, and divorce (National Gambling Impact Study Commission, 1999). In 2004 the Madera County Behavioral Health Services (MCBHS) participated in a study of problem gambling in California, which was conducted by the State Office of Problem Gambling. The study, entitled *Situational Assessment of Problem Gambling Services in California* (Volberg *et al.*, 2005), determined that the number of problem gamblers in California has risen from 0.8 percent to 1.3 percent since 1993, when casino gambling was relatively rare in California. Given that this is an average percentage, it is assumed that Counties without casinos would have a lower prevalence and those with casinos would have a higher prevalence. The increase from 0.8 to 1.3 percent is assumed to be attributed to the introduction of Tribal casinos within communities, most of which have include no more than one Tribal casino. Thus, it is assumed that the introduction of a large casino would increase the percentage of problem gamblers in the community by 0.5 percent. Although the Chukchansi Casino has recently been opened in Madera County, it is not close to major population centers (City of Madera). Thus, it is assumed that the current percentage of problem gamblers in Madera County is 1.0 percent of the adult population (1,063 people). It is assumed that Alternative A

would result in an increase in the number of problem gamblers of 0.5 percent. Thus, after the implementation of Alternative A, the percentage of problem gamblers is assumed to be 1.5 percent of the adult population in Madera County, an increase of 531 to 1,594.

According to Office of Problem Gambling study, problem gambling may be attenuated, or possibly reversed, through the expansion of problem gambling services. Evidence of this is cited in the study from studies done in Montana, Oregon, North Dakota, and Washington, each with newly opened tribal casinos and other forms of legal gambling available. According to the Office of Problem Gambling Study (Volberg *et al.*, 2005):

With respect to problem gambling, significant increases in prevalence were found in Montana and North Dakota. Significant decreases were found in Oregon and Washington. The major difference between states with increased and decreased gambling problems was the availability of services for problem gamblers.

The Tribe has agreed in the MOU with Madera County to contribute \$50,000 per annum to the County for the purpose of redistribution to the MCBHS to be used to supplement the budget for alcohol education and the treatment and prevention of problem gambling and gambling disorders. According to Debby Estes, Assistant Director of the MCBHS, between 10 and 20 percent of problem gamblers in Madera County will seek professional help from either the County or private practitioners. That means from 53 to 106 project-induced problem gamblers would seek professional help in Madera County.

To err on the side of overestimating the burden to the County, we have assumed that 20 percent of these problem gamblers would seek professional treatment (106) and that 80 percent of the people seeking professional treatment do so with MCBHS (due to the lack of resources elsewhere in the County), 85 people would seek treatment with MCBHS. In 2007, MCBHS treated 5,180 patients with 43.5 licensed and pre-licensed counselors. Given this patient-to-counselor ratio and the additional 85 people seeking treatment for problem gambling in Madera County, it is estimated that the County would need to hire a 0.7 FTE licensed counselor to treat the problem gambler population, which is estimated to cost approximately \$63,606 (see **Table 4.7-8** below). The Tribe has agreed in the County MOU to contribute \$50,000 per year to compensate these service programs, which is \$13,606 less than the amount needed to fund the above treatment programs and would result in a potentially significant impact. Mitigation measures in **Section 5.2.6** would mitigate this effect to a less than significant level.

Effects to Surrounding Property Values

Negative effects to property values from the introduction of a casino into a community are often assumed to occur by the public, especially in areas which currently contain high-value residential properties, due to perceived negative quality of life factors, such as increased noise and activity.

High-value residential properties are not present in the vicinity of the Madera site and nuisance effects would be minimized because the developed area is proposed in the middle of the Madera site, with a substantial buffer between the development and surrounding properties. Instead agricultural, industrial, and average-value rural residential uses predominate the area. However, in contrast with the public perception, property values tend to increase on land surrounding casino properties. This is assumed to occur due to the attraction of such land to speculators. However, the preference to live near such amenities may affect land values as well. This increase in land values is supported by data gathered by Michigan State University for the state of Michigan, a state that has had many established tribal casinos for over a decade. A comparison of State Equalized (land) Valuation (SEV) in five counties with casinos and the state of Michigan is presented in **Table 4.7-5**. The data exhibits that total property values in casino host counties have increased at a rate slightly to substantially above the state average (with the exception of Chippewa County, which is slightly below the state average). While this data does not suggest that casinos alone were the reason for the increase in SEV, it does challenge concerns that a casino lowers area land values. Therefore, land values in the region and in the vicinity of the Madera site would not be significantly affected by Alternative A.

TABLE 4.7-5
TRENDS IN STATE EQUALIZED VALUATION –
CASINO COUNTIES (1997–2003)

Location	1997 Total SEV	2003 Total SEV	% SEV Change 97 – 03
Michigan	216,745,336,185	369,525,297,327	71%
Chippewa County	644,402,869	1,049,586,969	63%
Grand Traverse County	2,174,276,291	4,246,196,554	95%
Isabella County	820,522,688	1,543,631,730	88%
Leelanau County	1,279,124,358	2,686,876,146	110%
Mackinac County	576,515,539	999,148,135	73%

SOURCE: MSU, 2002.

Economic Effects to Local Government

This section provides information on how Alternative A would increase the demand for governmental services in the County and the associated cost to expand these services, so a reduction of the quality of service is not borne by the community. There are two main ways that the project would impact government services. The first is through the demand for services that the casino/hotel resort itself would create. The second is through the demand created by the new residents who would move to Madera County. Governmental services could also be impacted by new visitors drawn to the County by Alternative A.

Casino/Hotel Resort Demand and Costs

The following section describes the demand for services and resulting economic cost created by the casino/hotel resort itself. These services include fire, law enforcement, emergency

management and judicial services as well as road improvements and the need for more social services and mental health professionals.

Because the Madera site is located within unincorporated Madera County, most development-induced demands would be borne by the County.

Fire Protection

Fire protection services would be impacted by Alternative A. Large developments such as a casino and hotel that attract large numbers of visitors generate calls for emergency services from fire departments, since fire departments act as first respondents to all emergencies, not just fires. The County currently contracts with the California Department of Forestry and Fire Protection (CDF) for fire protection services. The contract is for the unincorporated areas of the County; the cities of Madera and Chowchilla provide for their own fire protection. CDF currently maintains 16 stations; 45 vehicles including fire engines, water tankers, squad units, and a ladder truck; 21 career firefighters; 185 paid-call volunteers; and 6.5 FTE support staff for Madera County. The Coursegold CDF fire house (#13), which currently responds to calls from the Chukchansi Casino, responded to 345 calls in 2004, 336 in 2005, and 303 in 2006. A substantial portion of these calls were to the casino.

According to Deputy Chief Stan Craig, the standard goal for a fire department is to be able to respond to any location in its jurisdiction in 4 minutes. Obviously, this may not be possible under all circumstances, especially for the residential units found in the remote areas of the County. Nonetheless, it is the fire department's goal to achieve this level of service for any new development in the County. Currently, however, there is no CDF fire station that can provide this level of response to the Madera site. Any development on the Madera site would therefore require the building of a fire station and the purchase of a new fire truck in order to maintain the level of service goal.

Due to the multi-story hotel building plan, the fire truck to be purchased would need to be an aerial apparatus in order to adequately protect the facility in the event of a fire. The County only owns one aerial apparatus which services the Chukchansi Casino located 36 miles away. The City of Madera has a smaller aerial apparatus but it is about to be retired due to its restricted capabilities and old age. Neither would provide adequate coverage for a new hotel tower and therefore the County would need to purchase a second aerial apparatus to provide protection for the facility. In addition to an aerial apparatus, the Deputy Chief recommends a Type I Fire Engine to meet service standards outlined in the department's new master plan, which is in the process of being developed.

Capital costs for a new fire station are estimated to be between \$1.2 and \$2 million. The new aerial apparatus would cost approximately \$1,000,000 while the Type I fire engine is estimated to

cost \$500,000. Thus, total capital costs for fire protection demanded by Alternative A would be between \$2.7 and \$3.5 million. The MOU between the County and the Tribe (see **Section 2.2.10**) provides \$1,915,000 for the constructing and equipping a fire station. At the time that the agreement was signed, the County agreed that this amount was sufficient to equip and construct a fire station to serve the proposed development.

The new fire station and equipment would need an appropriate staff level to operate effectively. Staffing recommended by the fire department has increased substantially since the MOU was negotiated and since the preparation of the Draft EIS. According to the fire department, these increased staffing levels are necessary to comply with the anticipated standards of the master plan, which is currently being developed. Expected fire personnel and related costs for Alternative A, consistent with the current recommendations of the fire department, are displayed in **Table 4.7-6**.

Law Enforcement

An increased demand on local law enforcement services would result after implementation of Alternative A, given the increased public presence on the Madera site and increased traffic on area roadways. The Sheriff's Department currently employs 94 people, of which 65 are sworn officers. The Department provides protective services for all of the unincorporated areas of the County.

TABLE 4.7-6
FIRE PERSONNEL COSTS – ALTERNATIVE A

	Cost Per Unit (dollars)	Total (dollars)
Fire Engineers Salary and Benefits (6)	104,811	628,866
Fire Captains Salary and Benefits (6)	121,296	727,776
Fire Fighters Salary and Benefits (9)	104,811	943,299
Volunteer Memberships (12)	71	852
Sets of Equipment (33)	1,400	46,200
<i>Total</i>		2,346,993

SOURCE: Innovation Group, 2008.

According to Sheriff John Anderson, the Department responds to 12 to 15 calls per month at the Chukchansi Casino. The department averages 8 cases per month when the officer actually has to take action once he/she arrives. The types of crime commonly perpetrated include public drunkenness, petty theft, bad checks, identity theft, credit card fraud, and car break-ins. In 2004, the Chukchansi Casino investigated one serious crime where an employee alleged that another employee raped her.

While it is assumed that the same sorts of criminal activity would occur at the proposed casino/hotel resort as at the Chukchansi Casino, it is presumed that the demand for law

enforcement services would likely be greater at the proposed Madera casino location. The increase is assumed due to the proximity of the Madera site to an area with much higher population density (City of Madera). The Chukchansi Casino is in an area of relatively low population for the County. The Chukchansi provide funding for five deputy sheriff positions as a result of the demand for services.

To address the criminal activity associated with the operation of the casino/hotel resort, Sheriff John Anderson estimates that the Department would need to hire five deputies and one half sergeant. It takes five people to fill one deputy sheriff position 24 hours/day for 365 days/year. The Department keeps a ratio of 1 sergeant for every 10 deputies, which requires one half sergeant be hired. **Table 4.7-7** details the cost of adding these individuals to the force.

Emergency Medical Services

While typically there are regular calls for emergency medical services at a casino or hotel, emergency medical services or ambulance services are privately provided. The cost for those services is borne by the individual (typically their insurance company) who calls for service. According to Monte Pistoressi, owner of Pistoressi Ambulance, which provides ambulatory services to Madera County, the County has a contract with Pistoressi Ambulance for indigent care which pays the Medi-Cal rates for services. The cost of these calls is included in the Sheriff's budget and not separately outlined here. These costs have been accounted for on a per capita bases below in the *New Resident Demand and Costs* section.

TABLE 4.7-7
LAW ENFORCEMENT PERSONNEL COSTS – ALTERNATIVE A

	Cost Per Unit (dollars)	Total (dollars)
Deputy Sheriff Salary and Benefits (5)	61,031	305,155
Sheriffs Sergeant Salary and Benefits (0.5)	78,316	39,158
Equipment		116,130
Retirement		74,132
Health Insurance	8,798	48,389
Workers' Compensation Insurance	8,480	46,640
Uniform Allowance	900	4,950
<i>Total</i>		634,554

SOURCE: Innovation Group, 2008.

Judicial Services

As arrests increase so will the demands on the judicial system. The judicial system includes the District Attorney (DA) who prosecutes the crimes, the Public Defender who defends those accused who are indigent, the court that holds the trials and the grand jury that indicts the accused.

To estimate the likely effects of Alternative A on judicial services, the recent local experience at the Chukchansi Casino was researched as a case study. Discussions with the current Madera County DA revealed that the DA's office did not see an increase in caseload with the opening of the Chukchansi Casino. Generally, the crimes committed by casino clientele were not any different from their normal cases; they included crimes such as public drunkenness, drunk driving and petty theft. Charges against employees, however, included both embezzlement and rape, which are more complex crimes to prosecute. The embezzlement cases, in particular, required that attorneys study the casino's very complex security system in order to be able to understand it and present it to a jury.

While there were some increases in demands on the DA's time, the demands from the Chukchansi Casino were such that they did not require the hiring of a new attorney. Similarly, we do not believe that the District Attorney will need to hire a new attorney to handle the caseload from the proposed casino/hotel resort.

Department of Corrections

Increased criminal activity resulting from Alternative A would place an added burden on the Madera County Department of Corrections (MCDC). The County has one jail that was originally built to accommodate 316 inmates, but the facility routinely has a population well above that level. At the beginning of 2005, the facility housed 364 inmates. In fiscal year 2005-2006, the average daily inmate population was 377. In 2006-2007, this number was 396. The projection for 2007-2008 is 408. In fiscal year 2006-2007 a project which added bed space and staffing to the current facility was completed, which is expected to accommodate the projected inmate population of 408 and modest increases beyond that number. The MCDC has received funding of \$30 million by the State of California to build a new facility. The facility is expected to be completed by mid-2010.

The Madera County Sheriff indicates that calls to the Chukchansi Casino result in an average of two arrests per month. The Sheriff believes that the arrest rate would be higher at the new casino because of its proximity to a more dense population; therefore it is estimated that the new casino would result in three arrests per month. The cost to house one inmate for one night is \$59. This figure includes food, clothing, staff salaries, building, utilities, etc. The average stay is 23 nights. Assuming 36 arrests per year, the total cost per year to house these inmates would be \$48,852.

With 36 additional prisoners staying an average of 23 nights, the prison would have 828 additional cell nights filled. This is the equivalent of having an additional 2.3 prisoners in prison for a year, which could easily be accommodated by the new facility.

Behavioral Health Services

The MCBHS saw 3,025 mental health clients in 2004 and approximately 1,000 alcohol and drug clients. Statistics that measure the typical prevalence of mental health problems in populations indicate that in Madera County the MCBHS should be treating 5,800 clients per year. This figure is based on statistics for those individuals who live in the income bracket between \$0 and 200% above the poverty line. The Director of the MCBHS indicated that one group they are currently under-serving is senior citizens. The MCBHS facility has 143 staff members, including 43.5 licensed and pre-licensed counselors and is estimated to be understaffed by 8 to 10 FTEs. The last round of budget cuts partially led to the current understaffed situation.

The MCBHS did not see any significant rise in demand for services when the Chukchansi Casino opened (Innovation Group, 2008). The Director of MCBHS is concerned that because they are generally under-serving the older adult population, they may not be treating problem gamblers in the area.

The MOU between the County and the Chukchansi Tribe provides for money for the MCBHS, which is being used to fund a prevention coordinator, to update intake assessments to identify problem gambling, and to train the staff in recognizing and treating gambling addictions.

As noted previously under *Problem Gambling*, Alternative A is expected to generate an additional 85 people that seek treatment for problem gambling with MCBHS. It is estimated that an additional 0.7 FTE licensed counselor would be necessary to treat the problem gambler population, as described above. **Table 4.7-8** details the cost of a 0.7 FTE licensed counselor.

TABLE 4.7-8
BEHAVIORAL HEALTH SERVICES PERSONNEL COSTS – ALTERNATIVE A

	Cost Per Unit (dollars)	Total (dollars)
Licensed Clinician Salary and Benefits (0.7)	66,158	47,228
Retirement	10,141	7,239
Health Insurance	6,496	4,637
Workers' Compensation Insurance	205	146
Equipment	6,101	4,355
<i>Total</i>		63,606

SOURCE: Innovation Group, 2008.

Resource Management Agency

The Resource Management Agency is a unified agency that brings together several different County departments: Roads, Planning, Environmental Health, Sanitation, Engineering, Building Inspection and Fire Marshall. The only department expected to need any investment due to the demands of the casino would be the roads department. Traffic impacts and the need for traffic mitigation are discussed in **Section 4.8**. During discussions with the County regarding the MOU,

traffic improvements costs were estimated at \$4.6 to \$15.6 million. According to the MOU, the Tribe agrees to pay its fair share of traffic mitigation, as recommended by the traffic study completed for this EIS.

New Resident Demand and Costs

This section describes the demand for increased governmental services that would be created by new residents in the unincorporated County (268) and City of Madera (502) resulting from Alternative A. These services include a broader range of services than those discussed previously and include everything from animal control to welfare support. For those services that are uniquely offered by the County, we have assumed the entire County population will bear their cost of the 836 new County residents. Given that only 8 percent of new resident population would reside in the City of Chowchilla, significant fiscal impacts would not occur.

Madera County. Costs to the County from the introduction of new residents, based on the present County budget and services provided, include costs to administrative services, fire protection services, law enforcement services, judicial services, prison services, behavioral health services, social services, educational services, and resource management services. **Table 4.7-9** details the amount of spending per capita the County incurs for these services and the cost of providing services to the new residents.

Administrative services include the cost of running the County's government as well as those costs not covered in any other section below. They include the costs of the following departments: the County Board of Supervisors, library, animal control, human resources, information technology, insurance, tax collection, elections, contingency fund and other costs. With each additional resident of the County, these costs increase.

TABLE 4.7-9
PER CAPITA COST OF COUNTY SERVICES – ALTERNATIVE A

Service	2007 Budget (dollars)	2007 Population	Per Capita Spending (dollars)	Number of New Residents/ Students under Alternative A	Cost (dollars)
Administrative Services	21,738,410	147,778	147.10	836	122,977
Fire Protection Services	5,117,298	147,778	34.63	268	9,280
Law Enforcement Services	12,169,175	147,778	82.35	268	22,069
Judicial Services	6,832,976	147,778	46.24	268	12,392
Department of Corrections ^a	16,242,926	147,778	109.91	268	29,457
Behavioral Health Services	14,101	147,778	0.10	836	80
Social Services	4,535,363	147,778	30.69	836	25,657
Resource Management Agency	6,862,317	147,778	46.44	836	38,821
Educational Services ^b	26,294,746	18,958	1,387.000	175	242,725
<i>Total</i>					<i>503,459</i>

NOTES: ^aIncludes both the adult and juvenile correctional facilities operated by the County.

^bData is from the Madera Unified School District (MUSD), which is the largest school district in the County and will be most heavily impacted by development on the Madera site.

SOURCE: California Department of Education, 2005; Innovation Group, 2008.

As discussed above, emergency medical services are generally paid by the individual being served, but when the County bears the cost it is covered by the sheriff's budget. Therefore, the per capita cost to law enforcement services would include the cost of emergency medical service provision.

Madera County provides numerous social services to its underprivileged citizens. Many of these departments focus on training and employee development. Other services include the Veterans Services Office and the In-Home Support Services (IHSS) program, which provides aged, blind, disabled, and low-income individuals with services that allow them to remain in their homes as opposed to being institutionalized.

Some of the school districts in Madera County cross County and City lines. However, most impacts would be borne on the largest school district in the County, the Madera Unified School District (MUSD). 20.9 percent of the Madera County population is estimated to be school-age children. Thus, if 836 people are added to the population under Alternative A, it is estimated that 20.9 percent, or 175 people, would be school-age children. As mentioned in **Section 3.9.6**, Madera Unified School District, which includes the Madera site and is expected to accommodate a majority of project-generated students, could potentially accommodate an additional 1,385 students. Thus, the additional 175 student population could be absorbed by the MUSD. However, costs would increase, as detailed in **Table 4.7-9**.

City of Madera. Under Alternative A, it is projected that 502 new residents would move into the City of Madera. This amounts to 0.93 percent of the current City population. Given the relatively small resident increase, the lack of new residential development that would be induced (see **Section 4.12**), and that most service demands would be from new residents rather than the development, there would not be any need for capital improvements under Alternative A. Operational costs, however, are expected to rise with each new resident. Operational costs to the City of Madera from the introduction of new residents, based on the present City budget and services provided, include costs to City administration, the finance department, the City attorney, public works, law enforcement services, fire protection services, community development, parks and recreation, and grant oversight. **Table 4.7-10** combines the total amount of spending per capita the City incurs for these services and the cost of providing services to the new residents.

TABLE 4.7-10
PER CAPITA COST OF CITY OF MADERA SERVICES – ALTERNATIVE A

Service	2007-2008 Budget (dollars)	2007 Population	Per Capita Spending (dollars)	Number of New Residents under Alternative A	Cost for New Residents (dollars)
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Operational Expenses	25,378,468	54,195	468.28	502	235,077
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SOURCE: City of Madera, 2004; Innovation Group, 2008.

Revenues

There are two main sources of revenue the County and the City of Madera can expect under Alternative A: payments under the County and City MOUs and indirect tax revenue. Alternative A would negatively affect County revenue received from property taxes on the Madera site after it is taken into trust by the Federal Government.

Memorandum of Understanding. The MOU with the County was signed August 16, 2004. Among other things, the agreement requires payments to be made to the County and the Cities of Madera and Chowchilla after the implementation of Alternative A. The non-recurring payments (with the exception of the County legal fees) are subject to a Consumers Price Index (CPI) adjustment as of July 1, 2005 and each July 1 thereafter. Recurring payments are also adjusted annually, but only after the opening of the project. **Table 4.7-11** details the provisions of the County MOU. The MOU with the City was signed on October 18, 2006 and provides for various payments to the City after the implementation of Alternative A (see **Section 2.2.10**). **Table 4.7-12** details the provisions of the City MOU.

TABLE 4.7-11
MADERA COUNTY MEMORANDUM OF UNDERSTANDING REVENUE

Non-Recurring Contributions	MOU Terms	With CPI Adjustment
Public Safety Resources Contribution	\$1,915,000	\$2,134,000
Transportation Resources Contribution	\$4 to \$15 million	\$4.5 – 16.7 million
Road Contribution Consistent with County Ordinance	\$600,000	\$669,000
Recreation Contribution	\$200,000	\$223,000
School Contribution	\$150,000	\$167,000
Legal Fees Reimbursement	\$50,000	\$50,000
<i>Subtotal</i>	<i>\$6,915,000 - \$17,915,000</i>	<i>\$7,700,000 - \$19,958,000</i>

Recurring Contributions

North Fork Rancheria Charitable Foundation Contribution	\$200,000
North Fork Rancheria Economic Development Foundation	\$250,000
North Fork Rancheria Educational Foundation	\$400,000
North Fork Unincorporated Area Foundation	\$250,000
County Services Contributions	
Workforce or Housing programs	\$250,000
Police	\$415,000
Fire	\$1,200,000
Behavioral Health	\$50,000
Open Space/Parks	\$70,000
Public Safety Support	\$100,000
Public Facilities Budget	\$500,000
Subtotal	\$3,685,000

SOURCE: MOU, 2004; Innovation Group, 2008.

TABLE 4.7-12
CITY OF MADERA MEMORANDUM OF UNDERSTANDING REVENUE

Non-Recurring Contributions	
Law Enforcement Contribution	\$200,000
Road and Transportation Improvements	\$885,000
Transportation Resources Contribution	Up to \$4 million
Planning Contribution	\$200,000
Golf Course Contribution	\$2,500,000
Recreation Contribution	\$2,000,000
Police/Fire Training Feasibility Study Contribution	\$500,000
Subtotal	\$6,285,000 - \$10,285,000
Recurring Contributions	
Police Services Contribution	\$675,000 ^a
Downtown Madera Reinvestment Fund Contribution	\$100,000
Public Transit Contribution	\$50,000
General Fund Contribution ^b	\$250,000
Subtotal	\$1,075,000

^aNote that the contribution is \$640,000 for the first year and \$675,000 each year thereafter.

^bUnder the MOU the Tribe is allowed to deduct the amount of this contribution, which the City receives from the County pursuant to the County MOU. We assume that the full \$250,000 will be deducted after payments from the County MOU, but have reported the value here to most accurately estimate total MOU revenue to the City.

SOURCE: MOU, 2006; AES, 2008.

Taxes. Under Alternative A, the Madera site would go through a process by which it is placed into trust, which is a requirement before gaming is allowed under the Indian Gaming Regulatory Act (IGRA). By placing the land in trust, it would no longer be subject to property taxes. **Table**

4.7-13 displays the loss in taxes that would occur if the Madera site is placed into trust. As shown, total property tax losses would be approximately \$12,600.

The increase in County sales and use tax after the implementation of Alternative A was calculated using RIMS II. By inputting changes to the output in a sector or sectors of the economy, RIMS II estimates the direct, indirect and induced changes to output in all sectors of the economy. **Table 4.7-14** details the output in terms of off-site dollars spent in the retail sector and the sales and use tax associated with that spending for both the one-time construction spending and the recurring operations spending. Currently, a 0.5% sales tax provides revenue to the locality. The rest of the 7.75% in sales tax charged goes to the State.

TABLE 4.7-13
PROPERTY TAX LOSSES – ALTERNATIVE A

Parcel Number	Acreage	Assessed Value			Property Tax ^a
		Land	Structure	Total	
033-030-010	36.01	\$117,099	\$0	\$117,099	\$1,246
033-030-011	40.66	\$134,086	\$14,568	\$148,654	\$1,582
033-030-012	38.26	\$126,276	\$21,943	\$148,219	\$1,577
033-030-013	42.23	\$140,408	\$17,047	\$157,455	\$1,675
033-030-014	38.92	\$128,427	\$114,850	\$243,277	\$2,588
033-030-015	56.44	\$183,529	\$10,897	\$194,426	\$2,069
033-030-017	52.97	\$171,842	\$2,897	\$174,739	\$1,859
<i>Total</i>	<i>305.49</i>	<i>\$1,001,667</i>	<i>\$182,202</i>	<i>\$1,183,869</i>	<i>\$12,596</i>

NOTES: ^aThe property tax rate is estimated at 1.1%. The exact tax rate of any given year cannot be definitely projected.

SOURCE: Innovation Group, 2008.

TABLE 4.7-14
SALES AND USE TAX REVENUE – ALTERNATIVE A

Retail Sector Output for Construction Spending (one-time)	\$26,177,953
Retail Sector Output for Operational Spending (annual)	\$8,864,319
Sales Tax Rate for Madera County	0.5%
Sales Tax on Construction Spending (one-time)	\$130,890
Sales Tax on Operational Spending (annual)	\$44,322

SOURCE: Innovation Group, 2008.

Most overnight casino patrons are expected to stay at the proposed hotel. The proposed hotel development itself would not contribute to the tax rolls because it would be located on trust land and not subject to local jurisdiction. It is possible that some patrons will stay at local hotels, leading to additional hotel tax revenue for Madera County. However, these stays are expected to be minimal and to avoid overestimation, no additional revenue has been assumed from this source.

Costs vs. Revenue

This section provides a comparison of the costs and revenues estimated as a result of Alternative A. **Table 4.7-15** compares one-time costs and revenue for Madera County. As shown, under Alternative A, total costs would exceed total revenues by \$835,110 for one-time fire protection capital costs.

TABLE 4.7-15
COMPARISON OF ONE-TIME MADERA COUNTY
COSTS AND REVENUES – ALTERNATIVE A

Category	Cost	Revenue
Sales and Use Taxes	\$0	\$130,890
Fire Protection	\$3,100,000 ⁵	\$2,134,000 ¹
Roads ²	NA	NA
Recreation ³	\$223,000	\$223,000 ¹
Schools ³	\$167,000	\$167,000 ¹
MOU Legal Fees ⁴	\$50,000	\$50,000 ¹
Total	\$3,540,000	\$2,704,890

NOTES: ¹MOU payment.

²The Tribe agrees in the County MOU to pay its fair share of traffic mitigation as noted in the traffic study for this EIS, which is estimated in the MOU to range between \$4.6 and 15.6 million.

³Although one-time impacts are not expected in these areas, the County MOU provided revenues, which could be used for these areas or at the County's discretion. We have conservatively assumed the County would use the entire amount for recreation and schools related purposes.

⁴The MOU calls for a contribution of this amount and it is assumed the County has used the entire amount in negotiating the MOU.

⁵The estimate for a new fire station is between \$1.2 and \$2 million. An average cost of \$1.6 million is used here.

SOURCE: Innovation Group, 2008.

Table 4.7-16 compares annual costs (both development-induced and resident-induced) and revenue for Madera County. As shown, under Alternative A, total costs would exceed total revenues by \$1,038,310. Note that annual contributions of \$1,100,000 would be provided to four

foundations created by the County MOU, including an Educational Foundation. These foundations would be controlled by a board, not entirely within the control of the County. Thus, they were conservatively not included in the calculations below. Nonetheless, the funds in these foundations would likely be used, at least in part, for various County services, facilities, and programs.

TABLE 4.7-16
COMPARISON OF MADERA COUNTY ANNUAL COSTS AND REVENUES
- ALTERNATIVE A

Category	Cost	Revenue
Property Taxes	\$0	(\$12,596)
Administrative Services	\$122,977	\$570,000
Fire Protection	\$2,356,273	\$1,142,428 ¹
Law Enforcement	\$656,623	\$515,000 ¹
Judicial Services	\$12,392	\$0
Department of Corrections	\$78,309	\$0
Behavioral Health Services	\$63,686	\$50,000 ¹
Social Services	\$25,657	\$250,000 ¹
Resources Management Agency	\$38,821	\$0
Sales and Use Taxes	\$0	\$44,322
Educational Services	\$242,725	²
Total	\$3,597,464	\$2,559,154

NOTES: ¹MOU payment. Annual debt service for fire protection capital costs has been subtracted from MOU revenue. Law enforcement revenue includes \$415,000 payment to the Sheriff's Office from the MOU and \$100,000 for Public Safety Support from the MOU.

²Could use the recurring \$400,000 for the Educational Foundation created by the County MOU. However, since this Foundation would be governed by a board that includes members of the Tribe, it was conservatively not considered as offsetting costs of Alternative A.

SOURCE: Innovation Group, 2008.

Table 4.7-17 compares annual costs (both development-induced and resident-induced) and revenue for the City of Madera. As shown, under Alternative A, total revenues would exceed total costs by \$76,284. Note that MOU contributions in the amount of \$825,000 would also occur, but were conservatively not included in **Table 4.7-17** because they were allocated for specific purposes (law enforcement, downtown revitalization, air quality resources).

TABLE 4.7-17
COMPARISON OF CITY OF MADERA ANNUAL COSTS AND REVENUES
- ALTERNATIVE A

Category	Cost	Revenue
General MOU Contribution	\$0	\$250,000 ¹
Sales and Use Taxes	\$0	\$61,361

Operational Expenses	\$235,077	²
Total	\$235,077	\$311,361

NOTES: ¹MOU Payment. City MOU payments that may not be applied to expected costs are conservatively not listed in this table.

²Covered in excess of MOU payments and taxes.

SOURCE: Innovation Group, 2008.

Overall, MOU contributions and tax revenues generated by Alternative A by far outweigh any negative fiscal impacts to the City of Madera. Thus, a beneficial fiscal impact to the City would result. County costs exceed revenues by \$835,110 (one-time) and \$1,038,310 (annual) under Alternative A. These additional costs would require either that the County raise taxes or provide a lower quality of services, resulting in a potentially significant effect. Mitigation measures have been identified in **Section 5.2.6** that would mitigate this impact to a less than significant level.

Economic Effects to the Madera Irrigation District (MID)

As noted above, if the Madera site is taken into trust, local taxes and assessments would no longer apply. The seven parcels comprising the Madera site are currently within the MID service area and are therefore subject to various assessments which MID uses to fund its operations. MID assessments of the Madera site currently total approximately \$6,800. A loss of assessment fees would affect MID's ongoing regional efforts to address groundwater overdraft and operate its water supply facilities. However, the Madera site would no longer be within the MID service area and MID would not accrue costs related to the site. Therefore, this would be a less than significant effect. Nonetheless, the Tribe has negotiated a MOU with MID that includes annual payments to MID of \$11,500 in lieu of any fees, assessments, or taxes.

Increased Pumping Costs for Neighboring Wells

As discussed in **Section 4.3.1**, on-site groundwater pumping would lead to drawdown of the groundwater table, resulting in effects to neighboring wells. These effects could include increased pumping and maintenance costs caused from pumping water from lower depths. As described in detail in **Appendix L**, lower capacity (mostly residential) wells would not be noticeably affected by these increased costs (costs of a few dollars per year would be expected). Costs would be measurable for water wells pumping at higher rates, but the percentage increase of pumping and electrical costs would still be very small. Thus, significant effects to pumping costs for neighboring wells would not occur. Nonetheless, mitigation measures are contained in **Section 5.2.6** that would reduce less than significant effects to pumping costs.

Economic Effects to the State of California

It is assumed that no new residents would move from out of state (**Appendix R**). Thus, Alternative A would have no impact on the population of the State of California and no

population-related costs would be incurred by the State. Potential casino-induced costs include those placed on the California Highway Patrol (CHP) as well as the State's Office of Problem Gambling.

The CHP has not responded to any incidents at the Chukchansi Casino since its opening. Traffic has increased on the highway leading to Chukchansi (at least in part due to the opening of the casino), which has led to an increase in traffic related incidents. The CHP was unable to estimate if additional staffing would be needed as a result of Alternative A. With the implementation of the recommended traffic mitigation measures (**Section 5.2.7**), accident rates are likely to decrease since the intersections and segments would be improved to current safety standards with increased capacity. Therefore, significant increases in accidents would not occur under Alternative A. There may be a slight increase in demand for CHP services due to other traffic-related incidents (including motor vehicle code violations for instance), however this increase would be minimal (and may also be positively effected by the implementation of traffic mitigation measures) and would therefore be accommodated by existing CHP staff in the area.

The introduction of a casino under Alternative A might increase the utilization of services provided by the Office of Problem Gambling. We would assume a slight, incremental, increase in the use of the toll free problem gambling hotline. Yet, there is no research available that identifies or quantifies the correlation. In the absence of such research, the increased demand is expected to be correlated with the increase in statewide gaming patrons and the corresponding expected increase in problem gamblers, which would be a very small percentage increase when compared with the problem gamblers statewide. Therefore, the impact to this office would be minimal.

Any minimal increased costs related to demand for state services would be more than offset by revenue sharing that would occur under the Tribal-State Compact (**Appendix X**) and by increased sales and use tax revenue that would result under Alternative A. Specifically, the State would receive between 13.5 and 22 percent of the net win from the casino, depending on the level of profits reported. This could result in significant new revenues to the state. Annual sales and use tax revenues received by the State under Alternative A would be \$642,663 (**Appendix R**). Therefore, a less than significant economic effect would result to the State of California.

ALTERNATIVE B – REDUCED INTENSITY

Employment

As described below, Alternative B would result in the creation of numerous employment opportunities within Madera County, which would be a beneficial effect to the region's unemployment rate and the local economy as a whole. Alternative B's effects on construction and operation employment would be similar to those of Alternative A, but reduced given the reduced size and scope of development proposed.

The effects are measured in three ways: direct employment, indirect employment and induced employment. Direct employment includes those employees who are directly employed at the facility either during construction or during operation. Indirect employment includes those employees who provide services and are employed at least in part due to the facility but are not directly employed at the facility. The third category is induced employment. This category includes all the other jobs that are created due to the ripple effect of spending throughout the economy as a whole. As described under Alternative A, the RIMS II model was used to predict the direct, indirect, and induced employment created by this alternative.

Construction

Construction employment and spending is temporary, but it can have substantial impacts on the economy. For Alternative B, construction spending is estimated to be almost \$256 million. Based on the almost \$256 million in spending for construction, RIMS II projects that Alternative B would create 1,802 direct, indirect, and induced jobs. Although most of these jobs fall within the construction sector, they are spread out over 20 different segments of the economy (Innovation Group, 2008). These jobs would be filled by workers that commute to the area and local residents, some of which may currently be unemployed. This would result in a temporary reduction in the unemployed population and in the unemployment rate, a beneficial impact to the local economy.

Operation

Operational employment includes those jobs that are generated from the operation of Alternative B. These impacts would last as long as the casino is in operation. Direct employment includes all positions at the casino. SC Madera Management, LLC anticipates that the Alternative B project facilities would employ 879 full-time employees and 139 part-time employees or 962 FTEs.

Indirect employment includes those jobs that provide support services to but are not directly paid by the casino. Induced employment calculates the impacts of these direct and indirect jobs on the rest of the economy as spending by direct and indirect employees ripples through the economy. RIMS II projects that Alternative B would create 1,485 jobs in Madera County (**Table 4.7-18**). Of those, 523 are indirect and induced jobs. Most of the direct jobs fall within the arts, entertainment and recreation, and accommodation and food services sectors. Indirect and induced jobs are spread out over 20 different segments of the economy (Innovation Group, 2008).

As stated in **Section 3.7.1**, unemployment in Madera County is relatively high, with an average unemployed population of approximately 4,900, resulting in an unemployment rate of approximately 7.6 percent in 2007. Most of the 1,485 jobs created by Alternative B are expected to be filled by County residents (between 65 and 73.5 percent – see **Appendix R**) and most of the

Madera County residents filling the jobs are expected to be currently unemployed given the availability of unemployed workers in the local labor market, resulting in a reduction in the unemployed population and a corresponding reduction in the unemployment rate. This would be a beneficial impact to the local economy.

TABLE 4.7-18
OPERATION IMPACT ON EMPLOYMENT – ALTERNATIVE B

Employment Sector	Jobs Created
Agriculture, Forestry, Fishing and Hunting	2.72
Mining	0.15
Utilities	0.55
Construction	5.16
Manufacturing	15.12
Wholesale Trade	7.86
Retail Trade	58.26
Transportation and Warehousing	9.34
Information	7.08
Finance and Insurance	5.24
Real Estate, Rental, and Leasing	12.30
Professional, Scientific, and Technical Services	6.36
Management of Companies and Enterprises	12.57
Administrative and Waste Management Services	11.30
Educational Services	2.47
Health Care and Social Assistance	30.88
Arts, Entertainment, and Recreation	879.61
Accommodation and Food Services	388.82
Other Services	23.04
Households	5.80
<i>Total (rounded to nearest single job)</i>	<i>1,485</i>

SOURCE: Innovation Group, 2008.

Population

Given that Alternative B is projected to increase employment in Madera County, it is necessary to estimate how that increase in employed persons would affect the population as a whole. An increase in population is not itself an environmental impact. However, an increase in population could lead to impacts such as 1) creating demand for governmental services, which is discussed in more detail below, and 2) creating growth in housing or other facilities to serve the increase in population, which is discussed in more detail in **Section 4.12**.

Construction

The temporary construction jobs would not result in an increase in local population. It is typical for construction workers to travel for employment opportunities during the week and then return home on the weekends. Thus, it is expected that those jobs that can be filled locally would be and those that cannot would be filled by individuals who would travel for the work as opposed to relocating. Therefore, the population would not show any change from the influx of temporary construction jobs.

Operation

The 1,485 permanent jobs created by Alternative B would result in increases in the local population because some of these jobs would be filled by individuals who move into Madera County for permanent employment. In order to project what percentage of people will move into the County, it must be determined what percentage of individuals working at the casino would live in Madera County. As with Alternative A, Alternative B development would occur on the Madera site. Thus, the same assumption applies, that 65 percent or 625 of the direct casino jobs would be Madera County residents. The Alternative B impact on employment at Chukchansi would be similar to Alternative A.

Some of the indirect and induced jobs would also be filled by Madera County residents. Applying the same commuting ratio (73.5%) as for Alternative A, the casino would yield a Madera County resident pool of 384. As with Alternative A, it is projected that the number of new employees who would actually move into Madera County would be low. Again we conservatively project that up to 20 percent of employees would move to the County from other areas. If 20 percent of the new employees who live in Madera County are new residents of Madera County, then the number of employees that move into the County would be 202 (**Table 4.7-19**). The 202 figure includes 20% of the 625 direct employees expected to live in the County and 20% of the 384 indirect and induced employees expected to live in the County.

If 202 new employees move into Madera County, these would not be the only new residents in the County who moved in because of the casino. These employees would in some cases bring families. Using the same employee per household ratio used for Alternative A, a total of 534 new County residents would be expected under Alternative B, increasing the population from 147,778 to 148,312 (**Table 4.7-19**).

As described under Alternative A, for developments on the Madera site, it is projected that 60 percent of development-induced residents would move into the City of Madera, 32 percent in unincorporated Madera County, and 8 percent in the City of Chowchilla. Thus, as noted above, approximately 534 new County residents are expected under Alternative B, with 320 expected to settle in the City of Madera, increasing the City population from 54,195 to 54,515. An additional 43 residents would settle in the City of Chowchilla, raising the population from 13,254 to 13,297. Finally, an additional 171 residents would settle in unincorporated Madera County, raising the unincorporated population from 80,329 to 80,500 (Innovation Group, 2008 – **Appendix R**).

TABLE 4.7-19
NEW RESIDENTS IN MADERA COUNTY – ALTERNATIVE B

Direct, indirect, and induced jobs filled by Madera County residents	1,009
New employees moving to Madera County ¹	202

Number of employees per household	1.2
Number of new households ²	168
Number of persons per household	3.18
<i>Total New Residents³</i>	<i>534</i>

NOTES: ¹20% of jobs filled by Madera County residents
²New employees moving to Madera County divided by number of employees per household
³Number of new households multiplied by number of persons per household

SOURCE: Innovation Group, 2008.

Social Effects

Crime

As noted under Alternative A, no definitive link between casinos and regional crime rates was found. Therefore, although an increase in calls for service is expected, an increase in regional crime rates is not expected to result from Alternative B. Thus, Alternative B's impact to crime would be less than significant.

Problem Gambling

Although the Alternative B casino would be reduced in size when compared to Alternative A, the effects to problem gambling are conservatively not assumed to differ. However, under Alternative B, the County MOU would not apply and annual funds would not be provided for problem gambling services. Thus, a potentially significant effect would result. Mitigation measures in **Section 5.2.6** would mitigate this effect to a less than significant level.

Effects to Surrounding Property Values

As discussed under Alternative A, it is not expected that the operation of a casino on the Madera site would have a negative effect on surrounding or regional property values. Thus a less than significant effect to property values would result.

Economic Effects to Local Government

This section provides information on how Alternative B would increase the demand for governmental services in the County and the associated cost to expand these services, so a reduction of the quality of service is not borne by the community. There are two main ways that the project would impact government services. The first is through the demand for services that the casino itself would create. The second is through the demand created by the new residents who would move to Madera County. Governmental services could also be impacted by new visitors drawn to the County by Alternative B.

Casino Demand and Costs

The following section describes the demand for services and resulting economic cost created by the casino itself. These services include fire, law enforcement, medical services and judicial services as well as road improvements and the need for more social services and mental health professionals. Although the demands are similar to those of Alternative A, they are generally smaller, given the reduced intensity size and scope of the Alternative B casino.

Because the Madera site is located within unincorporated Madera County, most development-induced demands would be borne by the County.

Fire Protection

Fire protection services would be slightly less impacted by Alternative B than by Alternative A. According to Deputy Chief Stan Craig, Alternative B would still require a new fire station and that cost is estimated to be \$1.6 million. The new fire engine would not need to be an aerial apparatus as there is no hotel tower component in this alternative. A regular fire engine is half the cost of an aerial apparatus at \$500,000.

Because the fire engine would not be an aerial apparatus, the staffing needs of the station would decrease relative to Alternative A. Expected fire personnel costs for Alternative B are displayed in **Table 4.7-20**.

TABLE 4.7-20
FIRE PERSONNEL COSTS – ALTERNATIVE B

	Cost Per Unit (dollars)	Total (dollars)
Fire Engineers Salary and Benefits (3)	104,811	314,433
Fire Captains Salary and Benefits (3)	121,296	363,888
Fire Fighters Salary and Benefits	104,811	314,433
Volunteer Memberships (12)	71	852
Sets of Equipment (21)	1,400	29,400
<i>Total</i>		<i>1,023,006</i>

SOURCE: Innovation Group, 2008.

Law Enforcement

An increased demand on local law enforcement services would result after implementation of Alternative B, given the increased public presence on the Madera site and increased traffic on area roadways. It is estimated that the demands for law enforcement services would be the same as with Alternative A, since the size of the casino is similar to that of Alternative A (five deputies and a half-time sergeant position). **Table 4.7-21** details the cost of filling both the five deputy positions and a half-time sergeant position.

TABLE 4.7-21
LAW ENFORCEMENT PERSONNEL COSTS – ALTERNATIVE B

	Cost Per Unit (dollars)	Total (dollars)
Deputy Sheriff Salary and Benefits (5)	61,031	305,155
Sheriffs Sergeant Salary and Benefits (0.5)	78,316	39,158
Equipment		116,130
Retirement		74,132
Health Insurance	8,798	48,389
Workers' Compensation Insurance	8,480	46,640
Uniform Allowance	900	4,950
<i>Total</i>		634,554

SOURCE: Innovation Group, 2008.

Emergency Medical Services

As noted under Alternative A, the cost for emergency medical services is borne by the individual (typically their insurance company) who calls for service and the cost of calls from law enforcement is outlined in the Sheriff's budget rather than separately here. These costs have been accounted for on a per capita basis below in the *New Resident Demand and Costs* section.

Judicial Services

The level of criminal activity would be lower at the smaller Alternative B facility than at the larger one in Alternative A, so that even less work is projected to be generated for the judicial system. As such, there would be no measurable impact to judicial services under Alternative B.

Department of Corrections

Increased criminal activity resulting from Alternative B would place an added burden on the Madera County Department of Corrections (MCDC). A description of County correctional facilities can be found under Alternative A.

As with Alternative A, it is conservatively assumed that the casino would create three arrests per month. The cost to house one inmate for one night is \$59. The average stay is 23 nights. Assuming 36 arrests per year, the total cost per year to house these inmates would be \$48,852.

With 36 additional prisoners staying an average of 23 nights, the prison would have 828 additional cell nights filled. This is the equivalent of having an additional 2.3 prisoners in prison for a year, which could easily be accommodated by the new facility.

Behavioral Health Services

As the number of problem gamblers in the County is assumed to be the same as Alternative A, the number of new licensed counselors remains the same as in Alternative A. **Table 4.7-22** details the cost of a 0.7 FTE licensed counselor.

TABLE 4.7-22
BEHAVIORAL HEALTH SERVICES PERSONNEL COSTS – ALTERNATIVE B

	Cost Per Unit (dollars)	Total (dollars)
Licensed Clinician Salary and Benefits (0.7)	66,158	47,228
Retirement	10,141	7,239
Health Insurance	6,496	4,637
Workers' Compensation Insurance	205	146
Equipment	6,101	4,355
<i>Total</i>		63,606

SOURCE: Innovation Group, 2008.

Resource Management Agency

The Resource Management Agency is a unified agency that brings together several different County departments: Roads, Planning, Environmental Health, Sanitation, Engineering, Building Inspection and Fire Marshall. The only department expected to need any investment due to the demands of the casino would be the roads department. Traffic impacts and the need for traffic mitigation are discussed in **Section 4.8**.

New Resident Demand and Costs

This section describes the demand for increased governmental services that would be created by new residents in the unincorporated County (171) and City of Madera (320) resulting from Alternative B. These services include a broader range of services than those discussed previously and include everything from animal control to welfare support. For those services that are uniquely offered by the County, we have assumed the entire County population will bear the cost of the 534 new County residents. Given that only 8 percent of new resident population would reside in the City of Chowchilla, significant fiscal impacts would not occur.

Madera County. Costs to the County from the introduction of new residents, based on the present County budget and services provided, include costs to administrative services, fire protection services, law enforcement services, judicial services, prison services, behavioral health services, social services, educational services, and resource management services. **Table 4.7-23** details the amount of spending per capita the County incurs for these services and the cost of providing services to the new residents, which is less than for Alternative A since fewer residents would be generated by Alternative B.

TABLE 4.7-23
PER CAPITA COST OF COUNTY SERVICES – ALTERNATIVE B

Service	2007 Budget (dollars)	2007 Population	Per Capita Spending (dollars)	Number of New Residents/ Students under Alternative B	Cost (dollars)
Administrative Services	21,738,410	147,778	147.10	534	78,552

4.0 Environmental Consequences

Fire Protection Services	5,117,298	147,778	34.63	171	5,917
Law Enforcement Services	12,169,175	147,778	82.35	171	14,072
Judicial Services	6,832,976	147,778	46.24	171	7,901
Department of Corrections ^a	16,242,926	147,778	109.91	171	18,782
Behavioral Health Services	14,101	147,778	0.10	534	51
Social Services	4,535,363	147,778	30.69	534	16,389
Resource Management Agency	6,862,317	147,778	46.44	534	24,797
Educational Services ^b	26,294,746	18,958	1,387.000	112	169,478
<i>Total</i>					<i>258,383</i>

NOTES: ^aIncludes both the adult and juvenile correctional facilities operated by the County.

^bData is from the MUSD, which is the largest school district in the County and will be most heavily impacted by development on the Madera site.

SOURCE: California Department of Education, 2005; Innovation Group, 2008.

Administrative services include the cost of running the County's government as well as those costs not covered in any other section below. It includes the costs of the following departments: the County Board of Supervisors, library, animal control, human resources, information technology, insurance, tax collection, elections, contingency fund and other costs. With each additional resident of the County, these costs increase.

Some of the school districts in Madera County cross County and City lines. However, most impacts would be borne on the largest school district in the County, the MUSD. 20.9 percent of the Madera County population is estimated to be school-age children. Thus, if 534 people are added to the population under Alternative B, it is estimated that 20.9 percent, or 112 people would be school-age children. As noted in **Section 3.9.6**, Madera Unified School District, which includes the Madera site and is expected to accommodate a majority of project-generated students, could potentially accommodate an additional 1,385 students. Thus, the additional 112 student population could be absorbed by the MUSD. However, costs would increase, as detailed in **Table 4.7-23**.

City of Madera. Under Alternative B, it is projected that 320 new residents would move into the City of Madera. This amounts to 0.59 percent of the current City population. Given the relatively small resident increase, the lack of new residential development that would be induced (see **Section 4.12**), and that most service demands would be from new residents rather than the development, there would not be any need for capital improvements under Alternative B. Operational costs, however, are expected to rise with each new resident. Operational costs to the City of Madera from the introduction of new residents, based on the present City budget and services provided, include costs to City administration, the finance department, the City attorney, public works, law enforcement services, fire protection services, community development, parks and recreation, and grant oversight. **Table 4.7-24** combines the total amount of spending per capita the City incurs for these services and the cost of providing services to the new residents.

TABLE 4.7-24
PER CAPITA COST OF CITY OF MADERA SERVICES – ALTERNATIVE B

Service	2007-2008 Budget (dollars)	2007 Population	Per Capita Spending (dollars)	Number of New Residents under Alternative B	Cost for New Residents (dollars)
Operational Expenses	25,378,468	54,195	468.28	320	149,850
<i>Total</i>					<i>73,077</i>

SOURCE: City of Madera, 2004; Innovation Group, 2008.

Revenues

The MOU negotiated between the County and Tribe applies only to Alternative A. Thus, MOU revenues are not expected under Alternative B unless the County and the Tribe renegotiate the existing MOU. Thus, only one source of revenue is expected under Alternative B: indirect tax revenue. Alternative B would negatively affect County revenue received from property taxes on the Madera site after it is taken into trust by the Federal Government.

Taxes. Under Alternative B, the Madera site would go through a process by which it is placed into trust, which is a requirement before gaming is allowed under IGRA. By placing the land in trust, it would no longer be subject to property taxes. As shown above in **Table 4.7-13**, total property tax losses would be approximately \$12,600.

The increase in County sales and use tax after the implementation of Alternative B was calculated using RIMS II. **Table 4.7-25** details the output in terms of off-site dollars spent in the retail

TABLE 4.7-25
SALES AND USE TAX REVENUE – ALTERNATIVE B

Retail Sector Output for Construction Spending (one-time)	\$22,288,033
Retail Sector Output for Operational Spending (annual)	\$5,847,226
Sales Tax Rate for Madera County	0.5%
Sales Tax on Construction Spending (one-time)	\$111,440
Sales Tax on Operational Spending (annual)	\$29,236

SOURCE: Innovation Group, 2008.

sector and the sales and use tax associated with that spending for both the one-time construction spending and the recurring operations spending. Currently, a 0.5% sales tax provides revenue to the locality. The rest of the 7.75% in sales tax charged goes to the State.

Given that Alternative B does not include a hotel component, overnight visitors would need to stay at nearby hotels. Although overnight visitors are less likely for Alternative B when compared with Alternative A because the Alternative B casino would have fewer amenities and be less attractive for visitors desiring to stay overnight, some number of overnight visitors are

expected. It is difficult to predict the number of overnight visitors expected, however. Thus, for a conservative analysis of fiscal impacts, no increase in hotel tax revenue is calculated.

Costs vs. Revenue

This section provides a comparison of the costs and revenues estimated as a result of Alternative B. **Table 4.7-26** compares one-time costs and revenue for Madera County. As shown, under Alternative B, total costs would exceed total revenues by \$1,988,560 for one-time fire protection capital costs.

TABLE 4.7-26
COMPARISON OF ONE-TIME MADERA COUNTY
COSTS AND REVENUES – ALTERNATIVE B

Category	Cost	Revenue
Sales and Use Taxes	\$0	\$111,440
Fire Protection	\$2,100,000	\$0
Roads ¹	NA	NA
Total	\$2,100,000	\$111,440

NOTES: ¹A cost estimate has not been made. However, in order to mitigate traffic impacts to a less than significant level, the Tribe would need to pay its fair share of traffic mitigation as noted in the traffic study for this EIS.

SOURCE: Innovation Group, 2008.

Table 4.7-27 compares annual costs (both development-induced and resident-induced) and revenue for Madera County. As shown, under Alternative B, total costs would exceed total revenues by \$2,089,317.

Table 4.7-28 compares annual costs (both development-induced and resident-induced) and revenue for the City of Madera. As shown, under Alternative B, total costs would exceed total revenues by \$110,656.

TABLE 4.7-27
COMPARISON OF MADERA COUNTY ANNUAL COSTS AND REVENUES
- ALTERNATIVE B

Category	Cost	Revenue
Property Taxes	\$0	(\$12,596)
Sales and Use Taxes	\$0	\$29,236
Administrative Services	\$78,552	\$0
Fire Protection	\$1,028,923	\$0
Law Enforcement	\$648,626	\$0
Judicial Services	\$7,901	\$0
Department of Corrections	\$67,634	\$0
Behavioral Health Services	\$63,657	\$0
Social Services	\$16,389	\$0

Resources Management Agency	\$24,797	\$0
Educational Services	\$169,478	\$0
<i>Total</i>	<i>\$2,105,957</i>	<i>\$16,640</i>

SOURCE: Innovation Group, 2008.

Overall, County costs exceed revenues by \$1,988,560 (one-time) and \$2,089,317 (annual) under Alternative B. City of Madera costs exceed revenues by \$110,656 (annual). These additional costs would require either that the City and County raise taxes or provide a lower quality of services to the casino (where applicable) and its residents, resulting in a potentially significant effect. Mitigation measures have been identified in **Section 5.2.6** that would mitigate this impact to a less than significant level.

TABLE 4.7-28
COMPARISON OF CITY OF MADERA ANNUAL COSTS AND REVENUES
- ALTERNATIVE B

Category	Cost	Revenue
Sales and Use Taxes	\$0	\$39,194
Operational Expenses	\$149,850	\$0
<i>Total</i>	<i>\$149,850</i>	<i>\$39,194</i>

SOURCE: Innovation Group, 2008.

Economic Effects to the MID

Fiscal effects to the MID would be the same as Alternative A, given that the same Madera site would be taken into trust under Alternative B (except that the terms of the MID MOU would not apply). As noted under Alternative A, a less than significant effect would result. Nonetheless, mitigation measures are included in **Section 5.2.6** that recommend that the Tribe compensate MID for the loss of assessments after the site is taken into trust.

Increased Pumping Costs for Neighboring Wells

As discussed in **Section 4.3.2**, on-site groundwater pumping would lead to drawdown of the groundwater table, resulting in effects to neighboring wells. These effects could include increased pumping and maintenance costs caused from pumping water from lower depths. As described in detail in **Appendix L**, lower capacity (mostly residential) wells would not be noticeably affected by these increased costs (costs of a few dollars per year would be expected). Costs would be measurable for water wells pumping at higher rates, but the percentage increase of pumping and electrical costs would still be very small. Thus, significant effects to pumping costs for neighboring wells would not occur. Nonetheless, mitigation measures are contained in **Section 5.2.6** that would reduce less than significant effects to pumping costs.

Economic Effects to the State of California

As with Alternative A, it is assumed that no new residents would move from out of state (**Appendix R**). Thus, Alternative B would have no impact on the population of the State of California and no population-related costs would be incurred by the State. Potential casino-induced costs include those placed on the California Highway Patrol (CHP) as well as the State's Office of Problem Gambling. These would be similar to those costs resulting from Alternative A, but reduced due to the reduced scope of the casino under Alternative B and the corresponding reductions in project-induced traffic and patrons.

As with Alternative A, any minimal increased costs related to demand for state services would be more than offset by revenue sharing that would occur under the Tribal-State Compact (**Appendix X**) and by increased sales and use tax revenue that would result under Alternative B. Although the Compact included in **Appendix X** would not specifically apply to Alternative B, a Compact would be required with the state, which is likely to have a revenue sharing provision. In addition, annual sales and use tax revenues received by the State under Alternative B would be \$423,924 (**Appendix R**). Therefore, a less than significant economic effect would result to the State of California.

ALTERNATIVE C – NON-GAMING USE

Employment

As detailed below, Alternative C would result in the creation of numerous employment opportunities within Madera County, which would be a beneficial effect to the region's unemployment rate and the economy as a whole.

Alternative C's beneficial effects on construction and operation employment would be lower than those of Alternative A, given that Alternative C does not include a casino or hotel component, but retail stores and restaurants, which are less expensive to construct (for large-scale facilities) and require lesser numbers of employees to staff the facilities.

The effects are measured in three ways: direct employment, indirect employment and induced employment. Direct employment includes those employees who are directly employed at the facility either during construction or operation. Indirect employment includes those employees who provide services and are employed at least in part due to the facility but are not directly employed at the facility. The third category is induced employment. This category includes all the other jobs that are created due to the ripple effect of spending throughout the economy as a whole. As described under Alternative A, the RIMS II model was used to predict the direct, indirect, and induced employment created by this alternative.

Construction

Construction employment and spending is temporary, but it can have substantial impacts on the economy. For Alternative C, construction spending is estimated to be approximately \$31 million, which is substantially less than for Alternatives A and B. Based on \$31 million in spending for construction, RIMS II projects that Alternative C would create 271 direct, indirect, and induced jobs. Although most of these jobs fall within the construction sector, they are spread out over 20 different segments of the economy (Innovation Group, 2008). These jobs would be filled by workers that commute to the area and local residents, some of which may currently be unemployed. This would result in a temporary reduction in the unemployed population and in the unemployment rate, a beneficial impact to the local economy.

Operation

Operational employment includes those jobs that are generated from the operation of Alternative C. These impacts would last as long as the Alternative C developments are in operation. Direct employment includes all positions at the Alternative C businesses. Indirect employment includes those jobs that provide support services to but are not directly paid by the retail development. Induced employment calculates the impacts of these direct and indirect jobs on the rest of the economy as spending by direct and indirect employees ripples through the economy. RIMS II projects that Alternative C would create 995 direct, indirect, and induced jobs in Madera County (Table 4.7-29).

As stated in Section 3.7.1, unemployment in Madera County is relatively high, with an average unemployed population of approximately 4,900, resulting in an unemployment rate of approximately 7.6 percent in 2007. Most of the 995 jobs created by Alternative C are expected to be filled by County residents (approximately 73.5 percent – see Appendix R) and most of the Madera County residents filling the jobs are expected to be currently unemployed given the availability of unemployed workers in the local labor market, resulting in a reduction in the unemployed population and a corresponding reduction in the unemployment rate. This would be a beneficial impact to the local economy.

TABLE 4.7-29
OPERATION IMPACT ON EMPLOYMENT – ALTERNATIVE C

Employment Sector	Jobs Created
Agriculture, Forestry, Fishing and Hunting	1.18
Mining	0.08
Utilities	0.39
Construction	2.94
Manufacturing	14.01
Wholesale Trade	4.69
Retail Trade	729.57
Transportation and Warehousing	11.05

Information	7.95
Finance and Insurance	4.16
Real Estate, Rental, and Leasing	12.08
Professional, Scientific, and Technical Services	4.37
Management of Companies and Enterprises	41.82
Administrative and Waste Management Services	11.50
Educational Services	1.79
Health Care and Social Assistance	22.31
Arts, Entertainment, and Recreation	2.72
Accommodation and Food Services	106.62
Other Services	11.54
Households	4.19
<i>Total (rounded to nearest single job)</i>	995

SOURCE: Innovation Group, 2008.

Population

Given that Alternative C is projected to increase employment in Madera County, it is necessary to estimate how that increase in employed persons would affect the population as a whole. An increase in population is not itself an environmental impact. However, an increase in population could lead to impacts such as 1) creating demand for governmental services, which is discussed in more detail below, and 2) creating growth in housing or other facilities to serve the increase in population, which is discussed in more detail in **Section 4.12**.

Construction

The temporary construction jobs would not result in an increase in local population. It is typical for construction workers to travel for employment opportunities during the week and then return home on the weekends. Thus, it is expected that those jobs that can be filled locally would be and those that cannot would be filled by individuals who would travel for the work as opposed to relocating. Therefore, the population would not show any change from the influx of temporary construction jobs.

Operation

The 995 permanent jobs created by Alternative C would result in increases in the local population because some of these jobs would be filled by individuals who move into Madera County for permanent employment. In order to project what percentage of people will move into the County, it must be determined what percentage of individuals working at the Alternative C businesses would live in Madera County.

Unlike Alternative A, Alternative C does not contain a casino component. Thus, a comparison cannot easily be made with the experience of the Chuckchansi casino (and impacts to employment at Chuckchansi are not expected). Therefore, typical commuter ratios were utilized for all of the permanent jobs created by Alternative C to estimate the number of direct, indirect, and induced employees that would live in Madera County. Thus, applying a 73.5 percent

commuting ratio to the total employment estimate of 995 would result in a Madera County resident pool of 732. As with Alternative A, it is projected that the number of new employees who would actually move into Madera County would be low. Given that retail and restaurant employment opportunities are much more pervasive than casino employment, it is projected that even fewer residents would move into the County under Alternative C. To be conservative it is projected that 10 percent of employees would move to the County from other areas. If 10 percent of the new employees who live in Madera County are new residents of Madera County, then the number of employees that move into the County would be 73 (**Table 4.7-30**).

If 73 new employees move into Madera County, these would not be the only new residents in the County who moved in because of Alternative C. These employees would in some cases bring families. Using the same employee per household ratio used for Alternative A, a total of 194 new County residents would be expected under Alternative C, increasing the population from 147,778 to 147,972 (**Table 4.7-30**).

As described under Alternative A, for developments on the Madera site, it is projected that 60 percent of development-induced residents would move into the City of Madera, 32 percent in unincorporated Madera County, and 8 percent in the City of Chowchilla. Thus, as noted above, approximately 194 new County residents are expected under Alternative B, with 116 expected to settle in the City of Madera, increasing the City population from 54,195 to 54,311. An additional 16 residents would settle in the City of Chowchilla, raising the population from 13,254 to 13,270. Finally, an additional 62 residents would settle in unincorporated Madera County, raising the unincorporated population from 80,329 to 80,391 (Innovation Group, 2008 – **Appendix R**).

TABLE 4.7-30
NEW RESIDENTS IN MADERA COUNTY – ALTERNATIVE C

Direct, indirect, and induced jobs filled by Madera County residents	732
New employees moving to Madera County ¹	73
Number of employees per household	1.2
Number of new households ²	61
Number of persons per household	3.18
Total New Residents³	194

NOTES: ¹20% of jobs filled by Madera County residents

²New employees moving to Madera County divided by number of employees per household

³Number of new households multiplied by number of persons per household

SOURCE: Innovation Group, 2008.

Social Effects

Crime

The potential concerns regarding effects to crime that are associated with operation of a casino would not be present with the retail development proposed for Alternative C. Commercial uses associated with a shopping center and restaurants are not expected to characteristically result in increased crime rates in the region. Thus, Alternative C's impact to crime would be less than significant.

Problem Gambling

Given that a casino is not proposed for Alternative C, no additional problem gamblers would be generated.

Effects to Surrounding Property Values

Some of the same concerns with lowering property values may be present with respect to Alternative C, given that it proposes a large retail development. However, some of the same assumptions to increasing property values due to speculation would also apply. Therefore, land values in the region and in the vicinity of the Madera site would not be significantly affected by Alternative C.

Economic Effects to Local Government

This section provides information on how Alternative C would increase the demand for governmental services in the County and the associated cost to expand these services, so a reduction of the quality of service is not borne by the community. There are two main ways that the project would impact government services. The first is through the demand for services that the Alternative C developments would create. The second is through the demand created by the new residents who would move to Madera County to work in the Alternative C developments. Governmental services could also be impacted by new visitors drawn to the County by Alternative C.

Shopping Center Demand and Costs

The following section describes the demand for services and resulting economic cost created by the shopping center development itself. These services include fire, law enforcement, medical services and judicial services as well as road improvements and the need for more social services and mental health professionals.

Because the Madera site is located within unincorporated Madera County, most development-induced demands would be borne by the County.

Fire Protection

Fire protection services would be slightly less impacted by Alternative C than by Alternative A. According to Deputy Chief Stan Craig, Alternative C would still require a new fire station and that cost is estimated to be \$1.6 million. The new fire engine would not need to be an aerial apparatus as there is no hotel tower component in this alternative. A regular fire engine is half the cost of an aerial apparatus at \$500,000.

Because the fire engine would not be an aerial apparatus, the staffing needs of the station would decrease relative to Alternative A. Expected fire personnel costs for Alternative C are displayed in **Table 4.7-31**.

TABLE 4.7-31
FIRE PERSONNEL COSTS – ALTERNATIVE C

	Cost Per Unit (dollars)	Total (dollars)
Fire Engineers Salary and Benefits (3)	104,811	314,433
Fire Captains Salary and Benefits (3)	121,296	363,888
Fire Fighters Salary and Benefits	104,811	314,433
Volunteer Memberships (12)	71	852
Sets of Equipment (21)	1,400	29,400
<i>Total</i>		<i>1,023,006</i>

SOURCE: Innovation Group, 2008.

Law Enforcement

An increased demand on local law enforcement services would result after implementation of Alternative C, given the increased public presence on the Madera site and increased traffic on area roadways. Unlike Alternative A, Alternative C developments are not expected to provide private security services on the site. Experience with other shopping centers reveals that sheriff departments often station a deputy at a retail location on a full-time basis because of the amount of crime that is perpetrated on the premises. Common criminal activities include breaking into cars, car theft, shoplifting and disorderly conduct. In addition to preventing criminal activity, sheriffs assist with emergency situations and traffic incidents at the shopping center. Given this information, it is estimated that the Sheriff's department will need to hire 5 deputies and a half-time sergeant to accommodate the shopping center's demand for services. One position requires 5 sheriff deputies to fill and for every 10 deputies there is a sheriff's sergeant to oversee them. **Table 4.7-32** details the cost of filling both the five deputy positions and a half-time sergeant position.

TABLE 4.7-32
LAW ENFORCEMENT PERSONNEL COSTS – ALTERNATIVE C

	Cost Per Unit (dollars)	Total (dollars)
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Deputy Sheriff Salary and Benefits (5)	61,031	305,155
Sheriffs Sergeant Salary and Benefits (0.5)	78,316	39,158
Equipment		116,130
Retirement		74,132
Health Insurance	8,798	48,389
Workers' Compensation Insurance	8,480	46,640
Uniform Allowance	900	4,950
<i>Total</i>		<i>634,554</i>

SOURCE: Innovation Group, 2008.

Emergency Medical Services

As noted under Alternative A, the cost for emergency medical services is borne by the individual (typically their insurance company) who calls for service and the cost of calls from law enforcement is outlined in the Sheriff's budget rather than separately here. These costs have been accounted for on a per capita basis below in the *New Resident Demand and Costs* section.

Judicial Services

The level of criminal activity would be lower at the retail facility than at the casino in Alternative A and the types of crimes committed would not be expected to be particularly complex, so that even less work is projected to be generated for the judicial system. As such, there would be no measurable impact to judicial services under Alternative C.

Department of Corrections

Increased criminal activity would place an added burden on the MCDC. A description of County correctional facilities can be found under Alternative A.

As with Alternative A, it is conservatively assumed that the Alternative C developments would create three arrests per month. The cost to house one inmate for one night is \$59. The average stay is 23 nights. Assuming 36 arrests per year, the total cost per year to house these inmates would be \$48,852.

With 36 additional prisoners staying an average of 23 nights, the prison would have 828 additional cell nights filled. This is the equivalent of having an additional 2.3 prisoners in prison for a year, which could easily be accommodated by the new facility.

Behavioral Health Services

No additional problem gamblers or specific development-related effects to behavioral health services would occur.

Resource Management Agency

The Resource Management Agency is a unified agency that brings together several different County departments: Roads, Planning, Environmental Health, Sanitation, Engineering, Building Inspection and Fire Marshall. The only department expected to need any investment due to the demands of the retail development would be the roads department. Traffic impacts and the need for traffic mitigation are discussed in **Section 4.8**.

New Resident Demand and Costs

This section describes the demand for increased governmental services that would be created by new residents in the unincorporated County (62) and City of Madera (116) resulting from Alternative C. These services include a broader range of services than those discussed previously and include everything from animal control to welfare support. For those services that are uniquely offered by the County, we have assumed the entire County population will bear the cost of the 194 new County residents. Given that only 8 percent of new resident population would reside in the City of Chowchilla, significant fiscal impacts would not occur.

Madera County. Costs to the County from the introduction of new residents, based on the present County budget and services provided, include costs to administrative services, fire protection services, law enforcement services, judicial services, prison services, behavioral health services, social services, educational services, and resource management services. **Table 4.7-33** details the amount of spending per capita the County would incur for these services and the cost of providing services to the new residents, which is less than for Alternative A since fewer residents would be generated by Alternative C.

TABLE 4.7-33
PER CAPITA COST OF COUNTY SERVICES – ALTERNATIVE C

Service	2007 Budget (dollars)	2007 Population	Per Capita Spending (dollars)	Number of New Residents/ Students under Alternative C	Cost (dollars)
Administrative Services	21,738,410	147,778	147.10	194	28,508
Fire Protection Services	5,117,298	147,778	34.63	62	2,148
Law Enforcement Services	12,169,175	147,778	82.35	62	5,107
Judicial Services	6,832,976	147,778	46.24	62	2,868
Department of Corrections ^a	16,242,926	147,778	109.91	62	6,816
Behavioral Health Services	14,101	147,778	0.10	194	18
Social Services	4,535,363	147,778	30.69	194	5,948
Resource Management Agency	6,862,317	147,778	46.44	194	8,999
Educational Services ^b	26,294,746	18,958	1,387.000	41	62,041
Total					122,454

NOTES: ^aIncludes both the adult and juvenile correctional facilities operated by the County.

^bData is from the MUSD, which is the largest school district in the County and will be most heavily impacted by development on the Madera site.

SOURCE: California Department of Education, 2005; Innovation Group, 2008.

Administrative services include the cost of running the County's government as well as those costs not covered in any other section below. It includes the costs of the following departments: the County Board of Supervisors, library, animal control, human resources, information technology, insurance, tax collection, elections, contingency fund and other costs. With each additional resident of the County, these costs increase.

Madera County provides numerous social services to its underprivileged citizens as detailed above under Alternative A.

Some of the school districts in Madera County cross County/City lines. However, most impacts would be borne on the largest school district in the County, the MUSD. 20.9 percent of the Madera County population is estimated to be school-age children. Thus, if 194 people are added to the population under Alternative C, it is estimated that 20.9 percent, or 41 people would be school-age children. As noted in **Section 3.9.6**, Madera Unified School District, which includes the Madera site and is expected to accommodate a majority of Alternative C generated students, could potentially accommodate an additional 1,385 students. Thus, the additional 41 student population could be absorbed by the MUSD. However, costs would increase, as detailed in **Table 4.7-33**.

City of Madera. Under Alternative C, it is projected that 116 new residents would move into the City of Madera. This amounts to 0.21 percent of the current City population. Given the relatively small resident increase, the lack of new residential development that would be induced (see **Section 4.12**), and that most service demands would be from new residents rather than the development, there would not be any need for capital improvements under Alternative C. Operational costs, however, are expected to rise with each new resident. Operational costs to the City of Madera from the introduction of new residents, based on the present City budget and services provided, include costs to City administration, the finance department, the City attorney, public works, law enforcement services, fire protection services, community development, parks and recreation, and grant oversight. **Table 4.7-34** combines the total amount of spending per capita the City incurs for these services and the cost of providing services to the new residents.

TABLE 4.7-34
PER CAPITA COST OF CITY OF MADERA SERVICES – ALTERNATIVE C

Service	2007-2008 Budget (dollars)	2007 Population	Per Capita Spending (dollars)	Number of New Residents under Alternative C	Cost for New Residents (dollars)
Operational Expenses	25,378,468	54,195	468.28	116	54,320
<i>Total</i>					<i>26,549</i>

SOURCE: City of Madera, 2004; Innovation Group, 2008.

Revenues

The MOU negotiated between the County and Tribe applies only to Alternative A. Thus, MOU revenues are not expected under Alternative C unless the County and the Tribe were to renegotiate the existing MOU. Thus, only one source of revenue is expected under Alternative C: indirect tax revenue. Alternative C would negatively affect County revenue received from property taxes on the Madera site after it is taken into trust by the Federal Government.

Taxes. Under Alternative C, the Madera site would go through a process by which it is placed into trust. By placing the land in trust, it would no longer be subject to property taxes. As shown above in **Table 4.7-13**, total property tax losses would be \$12,600. The increase in County sales and use tax after the implementation of Alternative C was calculated using RIMS II. **Table 4.7-35** details the output in terms of off-site dollars spent in the retail sector and the sales and use tax associated with that spending for both the one-time construction spending and the recurring operations spending. Currently, a 0.5% sales tax provides revenue to the locality. The rest of the 7.75% in sales tax charged goes to the state.

TABLE 4.7-35
SALES AND USE TAX REVENUE – ALTERNATIVE C

Retail Sector Output for Construction Spending (one-time)	\$3,349,858
Retail Sector Output for Operational Spending (annual)	\$74,115,302
Sales Tax Rate for Madera County	0.5%
Sales Tax on Construction Spending (one-time)	\$16,749
Sales Tax on Operational Spending (annual)	\$370,577

SOURCE: Innovation Group, 2008.

As shown, new residents to the County and City of Madera are expected to generate \$10,745 and \$10,717 in revenue under Alternative C.

Given that Alternative C does not include a hotel component, overnight visitors would need to stay at nearby hotels, although overnight visitors are much less likely for Alternative C when compared with Alternative A, because typically shopping center customers are drawn from the surrounding region only. Thus, a very limited increase in hotel tax revenue is expected.

Costs vs. Revenue

This section provides a comparison of the costs and revenues estimated as a result of Alternative C. **Table 4.7-36** compares one-time costs and revenue for Madera County. As shown, under Alternative C, total costs would exceed total revenues by \$2,083,251 for one-time fire protection capital costs.

Table 4.7-37 compares annual costs (both development-induced and resident-induced) and revenue for Madera County. As shown, under Alternative C, total costs would exceed total revenues by \$1,470,885.

TABLE 4.7-36
COMPARISON OF ONE-TIME MADERA COUNTY
COSTS AND REVENUES – ALTERNATIVE C

Category	Cost	Revenue
Sales and Use Taxes	\$0	\$16,749
Fire Protection	\$2,100,000	\$0
Roads ¹	NA	NA
Total	\$2,100,000	\$16,749

NOTES: ¹In order to mitigate traffic impacts to a less than significant level, the Tribe would need to pay its fair share of traffic mitigation as noted in the traffic study for this EIS.

SOURCE: Innovation Group, 2008.

TABLE 4.7-37
COMPARISON OF MADERA COUNTY ANNUAL COSTS AND REVENUES
- ALTERNATIVE C

Category	Cost	Revenue
Property Taxes	\$0	(\$12,596)
Sales and Use Taxes	\$0	\$370,577
Administrative Services	\$28,508	\$0
Fire Protection	\$1,025,154	\$0
Law Enforcement	\$639,661	\$0
Judicial Services	\$2,868	\$0
Department of Corrections	\$55,668	\$0
Behavioral Health Services	\$18	\$0
Social Services	\$5,948	\$0
Resources Management Agency	\$8,999	\$0
Educational Services	\$62,041	\$0
Total	\$1,828,866	\$357,981

SOURCE: Innovation Group, 2008.

Table 4.7-38 compares annual costs (both development-induced and resident-induced) and revenue for the City of Madera. As shown, under Alternative C, total costs would exceed total revenues by \$40,095.

TABLE 4.7-38
COMPARISON OF CITY OF MADERA ANNUAL COSTS AND REVENUES
- ALTERNATIVE C

Category	Cost	Revenue
Sales and Use Taxes	\$0	\$14,225
Operational Expenses	\$54,320	\$0
Total	\$54,320	\$14,225

SOURCE: Innovation Group, 2008.

Overall, County costs exceed revenues by \$2,083,251 (one-time) and \$1,470,885 (annual) under Alternative C. City of Madera costs exceed revenues by \$40,095 (annual). These additional costs would require either that the City and County raise taxes or provide a lower quality of services to the Madera site (where applicable) and its residents, resulting in a potentially significant effect. Mitigation measures have been identified in **Section 5.2.6** that would mitigate this impact to a less than significant level.

Economic Effects to the MID

Fiscal effects to the MID would be the same as Alternative A, given that the same Madera site would be taken into trust under Alternative C (except that the terms of the MID MOU would not apply). As noted under Alternative A, a less than significant effect would result. Nonetheless, mitigation measures are included in **Section 5.2.6** that recommend that the Tribe compensate MID for the loss of assessments after the site is taken into trust.

Increased Pumping Costs for Neighboring Wells

As discussed in **Section 4.3.3**, on-site groundwater pumping would lead to drawdown of the groundwater table, resulting in effects to neighboring wells. These effects could include increased pumping and maintenance costs caused from pumping water from lower depths. As described in detail in **Appendix L**, lower capacity (mostly residential) wells would not be noticeably affected by these increased costs (costs of a few dollars per year would be expected). Costs would be measurable for water wells pumping at higher rates, but the percentage increase of pumping and electrical costs would still be very small. Thus, significant effects to pumping costs for neighboring wells would not occur. Nonetheless, mitigation measures are contained in **Section 5.2.6** that would reduce less than significant effects to pumping costs.

Economic Effects to the State of California

As with Alternative A, it is assumed that no new residents would move from out of state (**Appendix R**). Thus, Alternative C would have no impact on the population of the State of California and no population-related costs would be incurred by the State. Potential development-induced costs include those placed on the California Highway Patrol (CHP), which would be similar to those resulting from Alternative A given the similar project-induced traffic levels.

Any minimal increased costs related to demand for state services would be more than offset by increased sales and use tax revenue that would result under Alternative C. Under Alternative C annual sales and use tax revenues received by the State would be \$5,373,359 (**Appendix R**). Therefore, a less than significant economic effect would result to the State of California.

ALTERNATIVE D – NORTH FORK LOCATION***Employment***

As detailed below, Alternative D would result in the creation of numerous employment opportunities within Madera County, which would be a beneficial effect to the region's unemployment rate and the economy as a whole. Alternative D's effects on construction and operation employment would be substantially reduced when compared to those of Alternative A, given that Alternative D would not include a hotel component, would include a much smaller casino, and would be located in a competitively disadvantageous area.

The effects are measured in three ways: direct employment, indirect employment and induced employment. Direct employment includes those employees who are directly employed at the facility either during construction or during operation. Indirect employment includes those employees who provide services and are employed at least in part due to the facility but are not directly employed at the facility. The third category is induced employment. This category includes all the other jobs that are created due to the ripple effect of spending throughout the economy as a whole. As described under Alternative A, the RIMS II model was used to predict the direct, indirect, and induced employment created by this alternative.

Construction

Construction employment and spending is temporary, but it can have substantial impacts on the economy. For Alternative D, construction spending is estimated to be approximately \$49 million. Based on the \$49 million in spending for construction, RIMS II projects that Alternative D would create 351 jobs, including 226 direct and 125 indirect or induced jobs. Although most of these jobs fall within the construction sector, they are spread out over 20 different segments of the economy (Innovation Group, 2008). These jobs would be filled by workers that commute to the area and local residents, some of which may currently be unemployed. This would result in a temporary reduction in the unemployed population and in the unemployment rate, a beneficial impact to the local economy.

Operation

Operational employment includes those jobs that are generated from the operation of Alternative D. These impacts would last as long as the casino is in operation. Direct employment includes all positions at the casino. It is anticipated that the Alternative D project facilities would employ 139 full-time employees and 23 part-time employees or 153 FTEs.

Indirect employment includes those jobs that provide support services to but are not directly paid by the casino. Induced employment calculates the impacts of these direct and indirect jobs on the rest of the economy as spending by direct and indirect employees ripples through the economy.

RIMS II projects that Alternative D would create 167 jobs in Madera County (**Table 4.7-39**). Of those, 14 are indirect and induced jobs. Most of the direct jobs fall within the arts, entertainment and recreation, and accommodation and food services sectors. Indirect and induced jobs are spread out over 20 different segments of the economy (Innovation Group, 2008).

As stated in **Section 3.7.1**, unemployment in Madera County is relatively high, with an average unemployed population of approximately 4,900, resulting in an unemployment rate of approximately 7.6 percent in 2007. Most of the 167 jobs created by Alternative D are expected to be filled by County residents (approximately 73.5 percent – see **Appendix R**) and most of the Madera County residents filling the jobs are expected to be currently unemployed given the availability of unemployed workers in the local labor market, resulting in a reduction in the unemployed population and a corresponding reduction in the unemployment rate. This would be a beneficial impact to the local economy.

Population

Given that Alternative D is projected to increase employment in Madera County, it is necessary to estimate how that increase in employed persons would affect the population as a whole. An increase in population is not itself an environmental impact. However, an increase in population could lead to impacts such as 1) creating demand for governmental services, which is discussed in more detail below, and 2) creating growth in housing or other facilities to serve the increase in population, which is discussed in more detail in **Section 4.12**.

Construction

The temporary construction jobs would not result in an increase in local population. It is typical for construction workers to travel for employment opportunities during the week and then return home on the weekends. Thus, it is expected that those jobs that can be filled locally would be and those that cannot would be filled by individuals who would travel for the work as opposed to relocating. Therefore, the population would not show any change from the temporary influx of construction jobs.

TABLE 4.7-39
OPERATION IMPACT ON EMPLOYMENT – ALTERNATIVE D

Employment Sector	Jobs Created
Agriculture, Forestry, Fishing and Hunting	0.29
Mining	0.02
Utilities	0.07
Construction	0.79
Manufacturing	1.78
Wholesale Trade	0.90
Retail Trade	5.18
Transportation and Warehousing	1.11
Information	0.83

Finance and Insurance	0.62
Real Estate, Rental, and Leasing	1.43
Professional, Scientific, and Technical Services	0.84
Management of Companies and Enterprises	1.43
Administrative and Waste Management Services	1.37
Educational Services	0.29
Health Care and Social Assistance	3.59
Arts, Entertainment, and Recreation	108.74
Accommodation and Food Services	32.58
Other Services	4.56
Households	0.67
<i>Total (rounded to nearest single job)</i>	<i>167</i>

SOURCE: Innovation Group, 2008.

Operation

The 167 direct, indirect, and induced permanent jobs created by Alternative A would result in increases in the local population because some of these jobs would be filled by individuals who move into Madera County for employment. In order to project what percentage of people will move into the County, it must be determined what percentage of individuals working at the casino would live in Madera County. As noted above under Alternative A, approximately 65 percent of Chukchansi's employees are Madera County residents. General commuting patterns indicate that 73.5 percent of Madera County jobs are filled by Madera County residents. Given the small size of the Alternative D casino and the high level of unemployment in the County, it is assumed that a greater percentage of direct, indirect, and induced employees (73.5 percent) would come from Madera County for Alternative D, when compared to Alternative A. The Alternative D impact on employment at Chukchansi would be similar but reduced when compared to Alternative A due to the smaller size and economically disadvantageous location of the Alternative D casino.

Of the 73.5 percent or 123 of employees that would live in Madera County, it is projected that very few would move in from other areas given the large number of unemployed persons in the County compared to the number of jobs available. Of course, some employees would undoubtedly move in from other areas. For this reason, it is conservatively projected that 10 percent of the employees that live in Madera County would move in from other areas. Using this 10 percent figure, it is expected that 12 direct, indirect, and induced employees would move into the County under Alternative D (**Table 4.7-40**).

If 12 new employees move into Madera County, these would not be the only new residents in the County who moved in because of the casino. These employees would in some cases bring families. Using the same employee per household ration used for Alternative A, a total of 32 new County residents would be expected under Alternative D, increasing the population from 147,778 to 147,810 (**Table 4.7-40**).

TABLE 4.7-40
NEW RESIDENTS IN MADERA COUNTY – ALTERNATIVE D

Direct, indirect, and induced jobs filled by Madera County residents	123
New employees moving to Madera County ¹	12
Number of employees per household	1.2
Number of new households ²	10
Number of persons per household	3.18
Total New Residents³	32

NOTES: ¹10% of jobs filled by Madera County residents

²New employees moving to Madera County divided by number of employees per household

³Number of new households multiplied by number of persons per household

SOURCE: Innovation Group, 2008.

For Alternative D, the development would occur substantially further away from the City of Madera than the other alternatives. For this reason, typical Madera County growth patterns are assumed, with 44 percent of development-induced residents moving into the City of Madera, 8 percent in the City of Chowchilla, and 48 percent in unincorporated Madera County. Thus, as noted above, approximately 32 new County residents are expected under Alternative D with 14 expected to settle in the City of Madera, increasing the City population from 54,195 to 54,209. An additional 3 residents would settle in the City of Chowchilla, raising the population from 13,254 to 13,257. Finally, an additional 15 residents would settle in unincorporated Madera County, raising the unincorporated population from 80,329 to 80,344 (Innovation Group, 2008 – **Appendix R**).

Social Effects

Crime

As noted under Alternative A, no definitive link between casinos and regional crime rates was found. Therefore, although an increase in calls for service is expected, an increase in regional crime rates is not expected to result from Alternative D. Thus, Alternative D's impact to crime would be less than significant.

Problem Gambling

Although the Alternative D casino would be reduced in size when compared to Alternative A, the effects to problem gambling are conservatively not assumed to differ. However, under Alternative D, the County MOU would not apply and annual funds would not be provided for problem gambling services. Thus, a potentially significant effect would result. Mitigation measures in **Section 5.2.6** would mitigate this effect to a less than significant level.

Effects to Surrounding Property Values

As with Alternative A, high-value residential properties are not present in the immediate vicinity of the North Fork site and nuisance effects would be minimized because of the heavy tree cover and varied terrain within and surrounding the North Fork site. Thus, as analyzed above under Alternative A, land values in the region and in the vicinity of the North Fork site would not be significantly affected by Alternative D.

Economic Effects to Local Government

This section provides information on how Alternative D would increase demand for governmental services in the County and the associated cost to expand these services, so a reduction of the quality of service is not borne by the community. There are two main ways that the project would impact government services. The first is through the demand for services that the casino itself would create. The second is through the demand created by the new residents who would move to Madera County. Governmental services could also be impacted by new visitors drawn to the County by Alternative D.

Casino Demand and Costs

The following section describes the demand for services and resulting economic cost created by the casino itself. These services include fire, law enforcement, medical services and judicial services as well as road improvements and the need for more social services and mental health professionals. The demands are much smaller than for Alternative A, given the reduced size and scope of the Alternative D casino. Because the North Fork Site is located within unincorporated Madera County and not near any incorporated cities, all development-induced demands would be borne by the County.

Fire Protection

The demand for fire protection services would include typical structure fire risks (which are similar to those of Alternative A) and risks associated with forest fires. The latest nearby forest fire was in July 2005. Although the annual probability and the cost of such wildfires are difficult to estimate because of the human and weather factors related to fires, the expected cost is certainly greater than zero. Given the remote location of Alternative D, the expected cost would be greater than for the other alternatives, which are located in a semi-developed/agricultural area of Madera County with better access to fire prevention and fighting capabilities. The existence of a casino in the Alternative D location would make firefighting there more complicated and costly while increased human activity in the area would raise the probability of fire.

Chief Mikel Martin recommends two Type III fire engines to be fully staffed (3 FTEs each) at the existing Rancheria Cal fire station, which is near North Fork. Unlike with Alternative A, the new

fire engine would not need to be an aerial apparatus as there is no high-rise component in this alternative. The fire engines would cost \$800,000.

Expected fire personnel costs for Alternative D are displayed in **Table 4.7-41**.

TABLE 4.7-41
FIRE PERSONNEL COSTS – ALTERNATIVE D

	Cost Per Unit (dollars)	Total (dollars)
Fire Engineers Salary and Benefits (6)	104,811	628,866
Fire Captains Salary and Benefits (6)	121,296	727,776
Fire Fighters Salary and Benefits (6)	104,811	628,866
Volunteer Memberships (6)	71	426
Sets of Equipment (24)	1,400	33,600
<i>Total</i>		<i>2,019,534</i>

SOURCE: Innovation Group, 2008.

Law Enforcement

An increased demand on local law enforcement services would result after implementation of Alternative D, given the increased public presence on the North Fork site and increased traffic on area roadways. Assuming that the rate of calls is proportional to the size of the facility, the Alternative D casino would make fewer calls for sheriff assistance than the Chukchansi Casino or the Alternative A casino/hotel resort. Fewer calls require fewer officers to respond to those calls. It is therefore assumed that the Sheriff's office will need to increase its deputies by a half-time position (**Appendix R**). A position requires five sheriff deputies to fill. **Table 4.7-42** details the cost of adding these individuals to the force.

TABLE 4.7-42
LAW ENFORCEMENT PERSONNEL COSTS – ALTERNATIVE D

	Cost Per Unit (dollars)	Total (dollars)
Deputy Sheriff Salary and Benefits (2.5)	61,031	152,578
Sheriff's Sergeant Salary and Benefits (0.25)	78,316	19,579
Equipment		58,065
Retirement		37,066
Health Insurance	8,798	24,195
Workers' Compensation Insurance	8,480	23,320
Uniform Allowance	900	2,475
<i>Total</i>		<i>317,277</i>

SOURCE: Innovation Group, 2008.

Emergency Medical Services

As noted under Alternative A, the cost for emergency medical services is borne by the individual (typically their insurance company) who calls for service and the cost of calls from law

enforcement is included in the Sheriff's budget rather than separately here. These costs have been accounted for on a per capita bases below in the *New Resident Demand and Costs* section.

Judicial Services

The level of criminal activity would be lower at the smaller Alternative D facility than at the larger one in Alternative A, so that even less work is projected to be generated for the judicial system. As such, there would be no measurable impact to judicial services under Alternative D.

Department of Corrections

Increased criminal activity resulting from Alternative D would place an added burden on the MCDC. A description of County correctional facilities can be found under Alternative A.

Assuming the number of arrests per year is proportional to the size of the facility, the North Fork facility would have 3.5 arrests per year, given the 24 arrests per year experienced at the Chukchansi facility. To be conservative, it is assumed that the Alternative D facility experiences half the number of arrests as the Chukchansi Casino. The cost to house one inmate for one night is \$59. The average stay is 23 nights. Assuming 12 arrests per year, the total cost per year to house these inmates would be \$16,284.

With 12 additional prisoners staying an average of 23 nights, the prison would have 276 additional cell nights filled. This is the equivalent of having an additional one prisoner in prison for approximately ten months, which could easily be accommodated by the new facility.

Behavioral Health Services

As the number of problem gamblers in the County is assumed to be the same as Alternative A, the number of new licensed counselors remains the same as for Alternative A. **Table 4.7-43** details the cost of a 0.7 FTE licensed counselor.

TABLE 4.7-43
BEHAVIORAL HEALTH SERVICES PERSONNEL COSTS – ALTERNATIVE D

	Cost Per Unit (dollars)	Total (dollars)
Licensed Clinician Salary and Benefits (0.7)	66,158	47,228
Retirement	10,141	7,239
Health Insurance	6,496	4,637
Workers' Compensation Insurance	205	146
Equipment	6,101	4,355
<i>Total</i>		63,606

SOURCE: Innovation Group, 2008.

Resource Management Agency

The Resource Management Agency is a unified agency that brings together several different County departments: Roads, Planning, Environmental Health, Sanitation, Engineering, Building Inspection and Fire Marshall. The only department expected to need any investment due to the demands of the casino would be the roads department. Traffic impacts and the need for traffic mitigation are discussed in **Section 4.8**.

New Resident Demand and Costs

This section describes the demand for increased governmental services that would be created by new residents in the unincorporated County (15) and City of Madera (14) resulting from Alternative D. These services include a broader range of services than those discussed previously and include everything from animal control to welfare support. For those services that are uniquely offered by the County, we have assumed the entire County population will bear their cost of the 32 new County residents. Given that only 8 percent of new resident population would reside in the City of Chowchilla, significant fiscal impacts would not occur.

Madera County. Costs to the County from the introduction of new residents, based on the present County budget and services provided, include costs to administrative services, fire protection services, law enforcement services, judicial services, prison services, behavioral health services, social services, educational services, and resource management services. **Table 4.7-44** details the amount of spending per capita the County incurs for these services and the cost of providing services to the new residents.

Administrative services include the cost of running the County's government as well as those costs not covered in any other section below. It includes the costs of the following departments: the County Board of Supervisors, library, animal control, human resources, information technology, insurance, tax collection, elections, contingency fund and other costs. With each additional resident of the County, these costs increase.

Due to the influx of new people to the County under Alternative D, the demand for social services would increase. Madera County provides numerous social services to its underprivileged citizens as described under Alternative A.

TABLE 4.7-44
PER CAPITA COST OF COUNTY SERVICES – ALTERNATIVE D

Service	2007 Budget (dollars)	2007 Population	Per Capita Spending (dollars)	Number of New Residents/ Students under Alternative D	Cost (dollars)
Administrative Services	21,738,410	147,778	147.10	32	4,707

Fire Protection Services	5,117,298	147,778	34.63	15	532
Law Enforcement Services	12,169,175	147,778	82.35	15	1,265
Judicial Services	6,832,976	147,778	46.24	15	710
Department of Corrections ^a	16,242,926	147,778	109.91	15	1,688
Behavioral Health Services	14,101	147,778	0.10	32	3
Social Services	4,535,363	147,778	30.69	32	982
Resource Management Agency	6,862,317	147,778	46.44	32	1,486
Educational Services ^b	26,294,746	18,958	1,387.000	7	10,592
Total					21,966

NOTES: ^aIncludes both the adult and juvenile correctional facilities operated by the County.

^b Data is from the MUSD, which is the largest school district in the County and will be most heavily impacted by development on the North Fork site.

SOURCE: California Department of Education, 2005; Innovation Group, 2008.

Some of the school districts in Madera County cross County and City lines. However, most impacts would be borne on the largest school district in the County, the Madera Unified School District (MUSD). 20.9 percent of the Madera County population is estimated to be school-age children. Thus, if 32 people are added to the population under Alternative D, it is estimated that 20.9 percent, or 7 people would be school-age children. As mentioned in **Section 3.9.6**, Madera Unified School District, which includes the Madera site and is expected to accommodate a majority of project-generated students, could potentially accommodate an additional 1,385 students. Thus, the additional 175 student population could be absorbed by the MUSD. However, costs would increase, as detailed in **Table 4.7-44**.

City of Madera. Under Alternative D, it is projected that 14 new residents would move into the City of Madera. This amounts to 0.03 percent of the current City population. Given the relatively small resident increase, the lack of new residential development that would be induced (see **Section 4.12**), and that most service demands would be from new residents rather than the development, there would not be any need for capital improvements under Alternative D. Operational costs, however, are expected to rise with each new resident. Operational costs to the City of Madera from the introduction of new residents, based on the present City budget and services provided, include costs to City administration, the finance department, the City attorney, public works, law enforcement services, fire protection services, community development, parks and recreation, and grant oversight. **Table 4.7-45** combines the total amount of spending per capita the City incurs for these services and the cost of providing services to the new residents.

TABLE 4.7-45
PER CAPITA COST OF CITY OF MADERA SERVICES – ALTERNATIVE D

Service	2007-2008 Budget (dollars)	2007 Population	Per Capita Spending (dollars)	Number of New Residents under Alternative D	Cost for New Residents (dollars)
Operational Expenses	25,378,468	54,195	468.28	14	6,556
Total					6,556

SOURCE: City of Madera, 2004; Innovation Group, 2008.

Revenues

The MOU negotiated between the County and the Tribe applies only to Alternative A. Thus, MOU revenues are not expected under Alternative D unless the County and the Tribe were to renegotiate the existing MOU. Thus, only one source of revenue is expected under Alternative D: indirect tax revenue. Unlike the Madera site, the North Fork site is already held in trust by the Federal Government. Therefore, property taxes currently do not apply to this site and would not apply after the implementation of Alternative D. Thus, unlike Alternative A, Alternative D would not negatively affect County revenue received from property taxes.

Taxes. The increase in County sales and use tax after the implementation of Alternative D was calculated using RIMS II. **Table 4.7-46** details the output in terms of off-site dollars spent in the retail sector and the sales and use tax associated with that spending for both the one-time construction spending and the recurring operations spending. Currently, a 0.5% sales tax provides revenue to the locality. The rest of the 7.75% in sales tax charged goes to the State.

TABLE 4.7-46
SALES AND USE TAX REVENUE – ALTERNATIVE D

Retail Sector Output for Construction Spending (one-time)	\$4,338,854
Retail Sector Output for Operational Spending (annual)	\$480,538
Sales Tax Rate for Madera County	0.5%
Sales Tax on Construction Spending (one-time)	\$21,694
Sales Tax on Operational Spending (annual)	\$2,403

SOURCE: Innovation Group, 2008.

Given that Alternative D does not include a hotel component, overnight visitors would need to stay at nearby hotels. Although overnight visitors are less likely for Alternative D when compared with Alternative A because the Alternative D casino would have fewer amenities and be less attractive for visitors desiring to stay overnight, some number of overnight visitors is expected. It is difficult to predict the number of overnight visitors expected, however. Thus, for a conservative analysis of fiscal impacts, no increase in hotel tax revenue is calculated.

Costs vs. Revenue

This section provides a comparison of the costs and revenues estimated as a result of Alternative D. **Table 4.7-47** compares one-time costs and revenue for Madera County. As shown, under Alternative D, total costs would exceed total revenues by \$756,298 for one-time fire protection costs.

TABLE 4.7-47
COMPARISON OF ONE-TIME MADERA COUNTY
COSTS AND REVENUES – ALTERNATIVE D

Category	Cost	Revenue
Sales and Use Taxes	\$0	\$43,702
Fire Protection	\$800,000	\$0
Roads ¹	NA	NA
<i>Total</i>	<i>\$800,000</i>	<i>\$43,702</i>

NOTES: ¹A cost estimate has not been made. However, in order to mitigate traffic impacts to a less than significant level, the Tribe would need to pay its fair share of traffic mitigation as noted in the traffic study for this EIS.

SOURCE: Innovation Group, 2008.

Table 4.7-48 compares annual costs (both development-induced and resident-induced) and

TABLE 4.7-48
COMPARISON OF MADERA COUNTY ANNUAL COSTS AND REVENUES
- ALTERNATIVE D

Category	Cost	Revenue
Property Taxes	\$0	\$0
Sales and Use Taxes	\$0	\$2,403
Administrative Services	\$4,707	\$0
Fire Protection	\$2,020,066	\$0
Law Enforcement	\$318,542	\$0
Judicial Services	\$710	\$0
Department of Corrections	\$17,972	\$0
Behavioral Health Services	\$63,609	\$0
Social Services	\$982	\$0
Resources Management Agency	\$1,486	\$0
Educational Services	\$10,592	\$0
<i>Total</i>	<i>\$2,438,667</i>	<i>\$2,403</i>

SOURCE: Innovation Group, 2008.

revenue for Madera County. As shown, under Alternative D, total costs would exceed total revenues by \$2,436,264.

Table 4.7-49 compares annual costs (both development-induced and resident-induced) and revenue for the City of Madera. As shown, under Alternative D, total costs would exceed total revenues by \$4,834.

Overall, County costs exceed revenues by \$756,298 (one-time) and \$2,436,264 (annual) under Alternative D. City of Madera costs exceed revenues by \$4,834 (annual). These additional costs would require either that the City and County raise taxes or provide a lower quality of services to the casino (where applicable) and its residents, resulting in a potentially significant effect. Mitigation measures have been identified in **Section 5.2.6** that would mitigate this impact to a less than significant level.

TABLE 4.7-49
COMPARISON OF CITY OF MADERA ANNUAL COSTS AND REVENUES
- ALTERNATIVE D

Category	Cost	Revenue
Sales and Use Taxes	\$0	\$1,722
Operational Expenses	\$6,556	\$0
<i>Total</i>	<i>\$6,556</i>	<i>\$1,722</i>

SOURCE: Innovation Group, 2008.

Economic Effects to the MID

The North Fork site is not located within the service area of the MID. Thus, Alternative D would have no effect on the MID.

Increased Pumping Costs for Neighboring Wells

As discussed in **Section 4.3.4**, on-site groundwater pumping would lead to drawdown of the groundwater table, resulting in effects to neighboring wells. These effects could include increased pumping and maintenance costs caused from pumping water from lower depths. Unlike Alternatives A-C, the groundwater characteristics are not well known underneath the North Fork site. Thus, the extent of impacts to pumping costs for neighboring wells, although not expected to be substantial given the relatively low pumping rates proposed under Alternative D, is unknown. Thus, potentially significant effects to pumping costs for neighboring wells would occur. Mitigation measures are contained in **Section 5.2.6** that would reduce these effects to a less than significant level.

Economic Effects to the State of California

As with Alternative A, it is assumed that no new residents would move from out of state (**Appendix R**). Thus, Alternative D would have no impact on the population of the State of California and no population-related costs would be incurred by the State. Potential casino-induced costs include those placed on the California Highway Patrol (CHP) as well as the State's Office of Problem Gambling. These would be similar to those costs resulting from Alternative A, but reduced due to the reduced scope of the casino under Alternative D and the corresponding reductions in project-induced traffic and patrons.

As with Alternative A, any minimal increased costs related to demand for state services would be more than offset by revenue sharing that would occur under the Tribal-State Compact (**Appendix X**) and by increased sales and use tax revenue that would result under Alternative D. Although the Compact included in **Appendix X** would not specifically apply to Alternative D, a Compact would be required with the state, which is likely to have a revenue sharing provision. In addition, annual sales and use tax revenues received by the State under Alternative D would be \$34,839 (**Appendix R**). Therefore, a less than significant economic effect would result to the State of California.

ALTERNATIVE E – NO ACTION

Under the No-Action Alternative both the Madera site and North Fork site would remain as currently developed with rural residential (North Fork site) and rural residential / agricultural (Madera site) land uses. No potential socioeconomic effects resulting from development would occur, including beneficial effects to employment and the economy and negative effects to local services.

4.7.2 ENVIRONMENTAL JUSTICE

In accordance with Executive Order 12898, this section identifies communities where minority and low-income populations reside, as defined in **Section 3.7.4**, and analyzes project impacts related to these communities. Compliance with this Executive Order has been incorporated into the NEPA compliance requirements of the BIA. A significant environmental justice effect would result if an alternative results in a disproportionately high, adverse effect to minority and low-income populations and if such an effect occurs with greater frequency for these populations than for the general population as a whole.

ALTERNATIVE A – PROPOSED PROJECT

No low-income communities were identified (**Section 3.7.4**) in the vicinity of the Madera site. The census tract containing the Madera site and adjacent tracts contained minority communities, however. Tribal-operated casinos are present in the area as well. Thus, potential environmental justice impacts for Alternative A include any disproportionately high and adverse effects to local minority populations in the vicinity of the Madera site and competition-related effects to area tribal casinos.

Effects to Minority Communities

This EIS analyzes the potential environmental effects that would occur in the surrounding communities and the region. As noted in **Sections 4.0** and **5.0** of this EIS, no significant environmental effects have been identified in the vicinity of the Madera site, after the implementation of mitigation measures. No negative impacts specific to identified minority

communities, other than tribal casino competition (see below), were identified. Therefore, a less than significant environmental justice effect would occur to local minority communities.

Note that Alternative A would have a beneficial impact to the Tribe. It would provide employment opportunities for Tribal members and would provide a sustained revenue stream to fund Tribal governmental programs. Alternative A would also have a beneficial impact on the Wiyot Tribe due to revenue sharing provisions in the Tribal State Compacts with the Tribe and the Wiyot Tribe (**Appendix X**).

Competition

Alternative A contains a casino component that would compete with nearby existing and proposed tribal casinos. The Innovation Group (2008) conducted a gravity model impact analysis in an attempt to estimate impacts to nearby facilities. Gravity models are commonly used for commercial developments, public facilities, and residential developments. The gravity model estimates where a population will shop or gamble based on travel distance and the size and quality of competing facilities. The gravity model is based on the concept that the attractiveness (or “gravitational pull”) of a facility is related to its size, quality, and distance from a given population.

Under Alternative A, the proposed project would compete most directly with the Chukchansi, Table Mountain and the proposed Big Sandy facilities (see **Section 3.7.4** for a description and locations). The introduction of the Alternative A casino would expand the local market, increasing total gaming expenditures at venues in the immediate market area by over \$90 million. Nonetheless, given the competitiveness of the market, some decline in market share at competing facilities is expected. While actual revenues for the properties is proprietary to the respective tribes, the Innovation Group projects a market share decline of approximately 19 percent at Chukchansi as a result of the operation of the proposed project, and a market share decline of approximately 16 percent is projected at both the Table Mountain and Big Sandy facilities. The Palace and Tuolumne Black Oak would also be impacted, though the market share declines at both of those facilities would be much lower at approximately eight and three percent.

It should be noted that even in the scenario where market share declines by 19%, the impact on the viability of operations is not one that jeopardizes the casino’s ability to remain open. Given that the financial performance of tribal casinos is not public record, a conclusion regarding sustaining profitability cannot be empirically tested. A 19% revenue decline is, however, commonplace for incumbents in expanding gaming markets, and does not generally result in a loss in ability to operate profitably. First, market share may decline at competing casinos by the above percentages, or they may also decline at lower percentages, depending on a number of factors, including the ability of individual casinos to add features and effectively market their facilities. Adaptation to new market conditions is the norm for well-managed properties, such

that a decline of this magnitude should not alter the viability of operations. Second, a decline of this rate is typical in a market with limited existing casinos. Finally, the current central California gaming market is not over-saturated and therefore multiple operators can successfully co-exist in the long run. Thus, while continued expansion in the number of casinos in the central California market potentially brings additional challenges for existing casinos to effectively market their facilities, it also brings a potential opportunity for the region to build on its increased draw as an overall tourist attraction, which can generate additional revenue potential for the existing gaming operations. Market share reductions are typical when a new casino is introduced into an existing market; however the effect on profitability ultimately depends on many factors, including market share, the saturation level of the market, the various marketing efforts of the individual casinos, the collaborative efforts of competing casinos to expand the local market, and the efforts of individual casinos to add features or redesign facilities. Also note that without additional competition, revenues at area casinos are expected to continue to grow into the future. Thus, even in the worst case, should market share at competing facilities decline by the above percentages, all of the facilities are expected to remain open and to continue to generate sustainable profits for their tribal owners. Therefore, disproportionately high and adverse effects to competing tribes would not occur and a less than significant environmental justice effect would result.

ALTERNATIVE B – REDUCED INTENSITY

No low-income communities were identified (**Section 3.7.4**) in the vicinity of the Madera site. The census tract containing the Madera site and adjacent tracts contained minority communities, however. Tribal-operated casinos are present in the area as well. Thus, potential environmental justice impacts for Alternative B include any disproportionately high and adverse effects to local minority populations in the vicinity of the Madera site and competition-related effects to area tribal casinos.

Effects to Minority Communities

Under Alternative B, potential environmental effects would be lessened when compared to Alternative A. Thus, all localized environmental effects would be less than significant after mitigation and no impacts specific to identified minority communities, other than tribal casino competition (see below), were identified. Therefore, a less than significant environmental justice effect would occur to local minority communities.

As with Alternative A, Alternative B would have a beneficial impact to the Tribe. It would provide employment opportunities for Tribal members and would provide a sustained revenue stream to fund Tribal governmental programs. Alternative B would also have a beneficial impact on the Wiyot Tribe due to revenue sharing provisions in the Tribal State Compacts with the Tribe and the Wiyot Tribe (**Appendix X**). However, employment and revenues would be reduced

when compared to Alternative A, due to the reduced intensity of development proposed under Alternative B.

Competition

Like Alternative A, Alternative B contains a casino component that could potentially compete with nearby existing and proposed tribal casinos. Alternative B would expand the regional gaming market by approximately \$55 million. As with Alternative A, the Alternative B casino would compete most directly with the Chukchansi, Table Mountain and the proposed Big Sandy facilities. While actual revenues for the properties is proprietary to the respective tribes, the Innovation Group projects a market share decline of approximately 18 percent at Chukchansi as a result of the operation of the project, and a market share decline of approximately 14 percent is projected at both the Table Mountain and Big Sandy facilities. The Palace and Tuolumne Black Oak would also be impacted, though the market share declines at both of those facilities would be much lower at approximately five to seven percent.

As noted above under Alternative A, even in the scenario where market share declines by 19%, the impact on the viability of operations is not one that jeopardizes its ability to remain open. Thus, even in the worst case, should market share decline at competing facilities by the above percentages, all of the facilities are expected to remain open and to continue to generate sustainable profits for their tribal owners. Therefore, disproportionately high and adverse effects to competing tribes would not occur and a less than significant environmental justice effect would result.

ALTERNATIVE C – NON-GAMING USE

No low-income communities were identified (**Section 3.7.4**) in the vicinity of the Madera site. The census tract containing the Madera site and adjacent tracts contained minority communities, however. Tribal-operated casinos are present in the area as well, however Alternative C does not include a casino component and would therefore not have any competition-related impacts. Thus, potential environmental justice impacts for Alternative B include any disproportionately high and adverse effects to local minority populations in the vicinity of the Madera site.

Effects to Minority Communities

Under Alternative C, potential environmental effects would be lessened when compared to Alternative A. Thus, all localized environmental effects would be less than significant after mitigation and no impacts specific to identified minority communities were identified. Additionally, no competition would exist. Therefore, a less than significant environmental justice effect would occur to local minority communities.

As with Alternative A, Alternative C would have a beneficial impact to the Tribe. It would provide employment opportunities for Tribal members and would provide a sustained revenue stream to fund Tribal governmental programs. However, employment and revenues would be substantially reduced when compared to Alternative A, due to changed use proposed under Alternative C.

ALTERNATIVE D – NORTH FORK LOCATION

No low-income or minority communities were identified (**Section 3.7.4**) in the vicinity of the North Fork site. Tribal-operated casinos are present in the area, however. Thus, potential environmental justice impacts for Alternative D include competition-related effects to area tribal casinos.

Effects to Minority Communities

No minority communities are present in the vicinity of the North Fork site. Therefore, a less than significant environmental justice effect would occur.

Note that, if the proposed Alternative D casino development could be financed and operated at a profit, Alternative D would have a beneficial impact to the Tribe. However, as noted in **Section 2.7** and **Appendix R**, due the rural location of the North Fork site and high construction costs associated with development on the North Fork site, it would be very difficult to obtain financing for, and profitably operate the Alternative D casino. If the Alternative D casino cannot be financed or operated at a profit, Tribal employment and revenue needs would not be met. Even if the Alternative D casino can be operated at a profit, employment and revenue benefits to the Tribe would be substantially reduced when compared to Alternative A.

Competition

Like Alternative A, Alternative D contains a casino component that would compete with nearby existing and proposed tribal casinos. Unlike Alternatives A and B, the small Alternative D casino would have a negligible effect on market growth. As with Alternative A, the Alternative D casino would compete most directly with the Chukchansi, Table Mountain and the proposed Big Sandy facilities. While actual revenues for the properties is proprietary to the respective tribes, the Innovation Group projects a market share decline of approximately two percent at Chukchansi as a result of the operation of the project, and a market share decline of approximately one percent is projected at both the Table Mountain and Big Sandy facilities. The Palace and Tuolumne Black Oak would also be impacted, though the market share declines at both of those facilities would be much lower, at less than one percent.

As noted above under Alternative A, even in the scenario where market share declines by 19%, the impact on the viability of operations is not one that jeopardizes its ability to remain open.

Thus, even in the worst case, should market share decline at competing facilities by the above percentages, all of the facilities are expected to remain open and to continue to generate sustainable profits for their tribal owners. Therefore, disproportionately high and adverse effects to competing tribes would not occur and a less than significant environmental justice effect would result.

ALTERNATIVE E – NO ACTION

Under the No Action Alternative, no development is proposed. Thus, no disproportionate effects to low-income or minority populations would occur.

4.8 RESOURCE USE PATTERNS

4.8.1 INTRODUCTION

TRANSPORTATION/CIRCULATION

A detailed traffic study was developed for the proposed alternatives and is presented in **Appendix M** of this EIS.

Consultation

Consultation with the County and City of Madera, City of Chowchilla and California Department of Transportation (Caltrans) has occurred throughout project development and the environmental study process and is ongoing. Scoping meetings were held with the above-listed agencies to present traffic study methodology and parameters and solicit comments and input useful for analysis of potential traffic impacts resulting from the proposed build alternatives. During the development of the traffic study, information regarding planned transportation and development (both residential and commercial) projects was obtained from the County and City of Madera, the City of Chowchilla and Caltrans.

Methodology

The methodology in which the traffic study is based is discussed in **Section 3.8** and **Appendix M**. The Build-Out (2010) Without Project forecasted traffic volumes were calculated using growth increment/growth rate data developed from the 2000 and the 2030 No Project model runs. For segments and intersections showing negative or no growth by 2010, a 3% growth factor applied to the Existing count data was used to calculate the 2010 Without Project volumes and should be considered worst-case.

Trip Generation

During the traffic scoping process with the County and City of Madera, City of Chowchilla and Caltrans District 6, trip generation methodology was discussed and agreed upon. The following methodology and sources were determined appropriate for analysis of potential traffic impacts resulting from build-out of any of the build alternatives.

Land uses for the various build alternatives are identified as casino, hotel, and retail/commercial. Both hotel and retail/commercial uses have been classified in the Institute of Transportation Engineers Trip Generation Manual (7th edition) (ITE, 2003). While trip rates for casinos are found in the ITE manual, these rates are for Nevada-style gaming and are not an appropriate rate for the casino alternatives evaluated herein. Trip rates were derived not only from standards contained within the ITE periodicals, but also relevant publications by other entities such as the San Diego Area Association of Governments (SANDAG), or actual counts at local casinos. The resources from which the casino land use trip rates were derived were from several case studies,

which are described in **Appendix M**. Utilizing trip generation rates from comparable facilities for the North Fork Project provides a conservative estimate of a.m. and p.m. peak hour trips. A p.m. peak hour trip rate of 3.93 trips/thousand square feet of gaming facility was utilized in this analysis.

Hotel Land Uses. The hotel component base trip generation information was developed using the Institute of Transportation Engineers (ITE) *Trip Generation* manual and the corresponding software. The traffic study (**Appendix M**) concluded that when a hotel is part of a casino-hotel establishment, the daily trip rate for the hotel was 3.0 trips per room. **Table 4.8-1** shows the project trip generation rate for the casino and hotel and the distribution of entering versus exiting traffic in terms of percentage.

TABLE 4.8-1
PROJECT TRIP RATE AND DIRECTIONAL DISTRIBUTION (CASINO AND HOTEL LAND USES)

Land Use	Period	Average Rate	Directional Distribution (%)	
			Enter	Exit
Casino (per ksf casino floor area)	Daily	45.3 ¹	50	50
	A.m. Peak of Street	2.36 ¹	70	30
	P.m. Peak of Street	3.93 ¹	53	47
Hotel (per room)	Daily	3.00 ²	50	50
	A.m. Peak of Street	0.21 ²	61	39
	P.m. Peak of Street	0.22 ²	53	47

NOTES: ¹ ksf = one thousand square feet.

² Trip rate is ITE Land Use Code 310 – Hotel. Rate reduced by 36.5% to account for internal capture to/from casino.

SOURCE: TPG Consulting, Inc. 2008; AES, 2008.

Alternative C Land Uses. The Alternative C trip generation information was developed using the ITE *Trip Generation* manual and the corresponding software (ITE, 2003). The following describes the likely land uses proposed under Alternative C and the corresponding land use code, as reported in the ITE *Trip Generation* manual:

- Free-standing discount superstores: similar to the free-standing discount stores described in Land Use 815, with the exception that they also contain a full-service grocery department under the same roof that shares entrances and exits with the discount store area.
- Discount club: a discount store or warehouse where shoppers pay a membership fee in order to take advantage of discounted prices on a wide variety of items such as food, clothing, tires and appliances; many items are sold in large quantities or bulk.

- Fast-food restaurant with drive-through window: characterized by a large carryout clientele; long hours of services (some are open for breakfast, all are open for lunch and dinner, some are open late at night or 24 hours) and high turnover rates for eat-in customers.
- High-turnover (sit-down) restaurants: consist of sit-down, full-service eating establishments with turnover rates of approximately one hour or less.

Table 4.8-2 presents the daily and a.m. and p.m. peak hour average rates and the directional distribution for Alternative C land uses.

TABLE 4.8-2
PROJECT TRIP RATE AND DIRECTIONAL DISTRIBUTION (ALTERNATIVE C LAND USES)

Land Use	Period	Average Rate ¹	Directional Distribution (%)	
			Enter	Exit
Free Standing Discount Superstore	Daily	49.21	50	50
	A.m. Peak of Street	1.84	51	49
	P.m. Peak of Street	3.87	49	51
Discount Club	Daily	41.80	50	50
	A.m. Peak of Street	0.56	71	29
	P.m. Peak of Street	4.24	50	50
Fast Food Restaurant w/drive-through	Daily	496.12	50	50
	A.m. Peak of Street	53.11	51	49
	P.m. Peak of Street	34.64	52	48
High Turnover (sit-down) Restaurant	Daily	127.15	50	50
	A.m. Peak of Street	11.52	52	48
	P.m. Peak of Street	10.92	61	39

NOTES: The rates shown are based on the number of square feet as the independent variable.

¹ Per thousand square feet.

SOURCE: TPG Consulting, Inc., 2008; AES, 2008.

Sometimes developments also attract trips already on the road that stop as they pass by the site. These are not new vehicle trips and are considered to be pass-by trips. A 15-percent pass-by rate, per Caltrans *Guide for the Preparation of Traffic Impact Studies*, has been applied to the alternatives.

Level of Service Threshold

The Caltrans considers level of service (LOS) C transitioning to D to be acceptable measure. LOS D, E or F is unacceptable. Madera County considers LOS D to be acceptable, and LOS E or F unacceptable. Each table presenting LOS results at the study roadway segments and intersections under Build-Out conditions (2010) are shown with the corresponding LOS threshold for reference. **Section 3.8.1** provides more discussion of the LOS thresholds.

Signal Warrant Analysis

Rural and urban peak hour volume warrants (Warrant 3) were prepared for all unsignalized intersections, as appropriate, based on the methodology presented in the *Manual on Uniform Traffic Control Devices* (US DOT FHWA, 2003), and the *MUTCD California Supplement* (US DOT FHWA, 2004). According to the *Manual on Uniform Traffic Control Devices*, “the satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.” Therefore, prior to making a final determination on installation of a proposed signal, a thorough engineering investigation, including collision history, should be conducted.

2010 Without Project Condition

This section discusses the 2010 traffic conditions without the project trips added for the Madera site and the North Fork site. These conditions represent the 2010 baseline (no project) scenario.

Planned Roadway Improvements

Roadway improvements in the Madera site study area, as reported in the Madera County 2007 Regional Transportation Plan (RTP) and through information provided by Caltrans, include improvements to signalize and restripe/widening of the EB approach, from a shared left-through, to a separate left-turn lane and one through lane at Avenue 12 at SR-99 NB ramps. Interchange reconstruction at SR 145 and SR-99 interchange, and the extension of Ellis Street over SR-99 to merge with Avenue 16 is anticipated. These improvements are anticipated to be in place by 2010 and therefore were considered as such.

Traffic Results

Madera Site

Figures 4.8-1 and **4.8-2** present the 2010 Without Project Lane Configuration and Traffic Controls for the Madera site study intersections.

Table 4.8-3 summarizes the results of this weekday freeway and roadway segment analysis for the 2010 level of service conditions. As shown in **Table 4.8-3** below, based on 2010 traffic volumes, the following four freeway segments and one roadway segment currently operate at an unacceptable LOS:

- SR-99 NB – North of Avenue 18½
- SR-99 SB – Avenue 18½ to Avenue 17
- SR-99 NB – South of Avenue 17
- SR-99 SB – South of Avenue 17
- Avenue 17 – SR-99 to Road 27

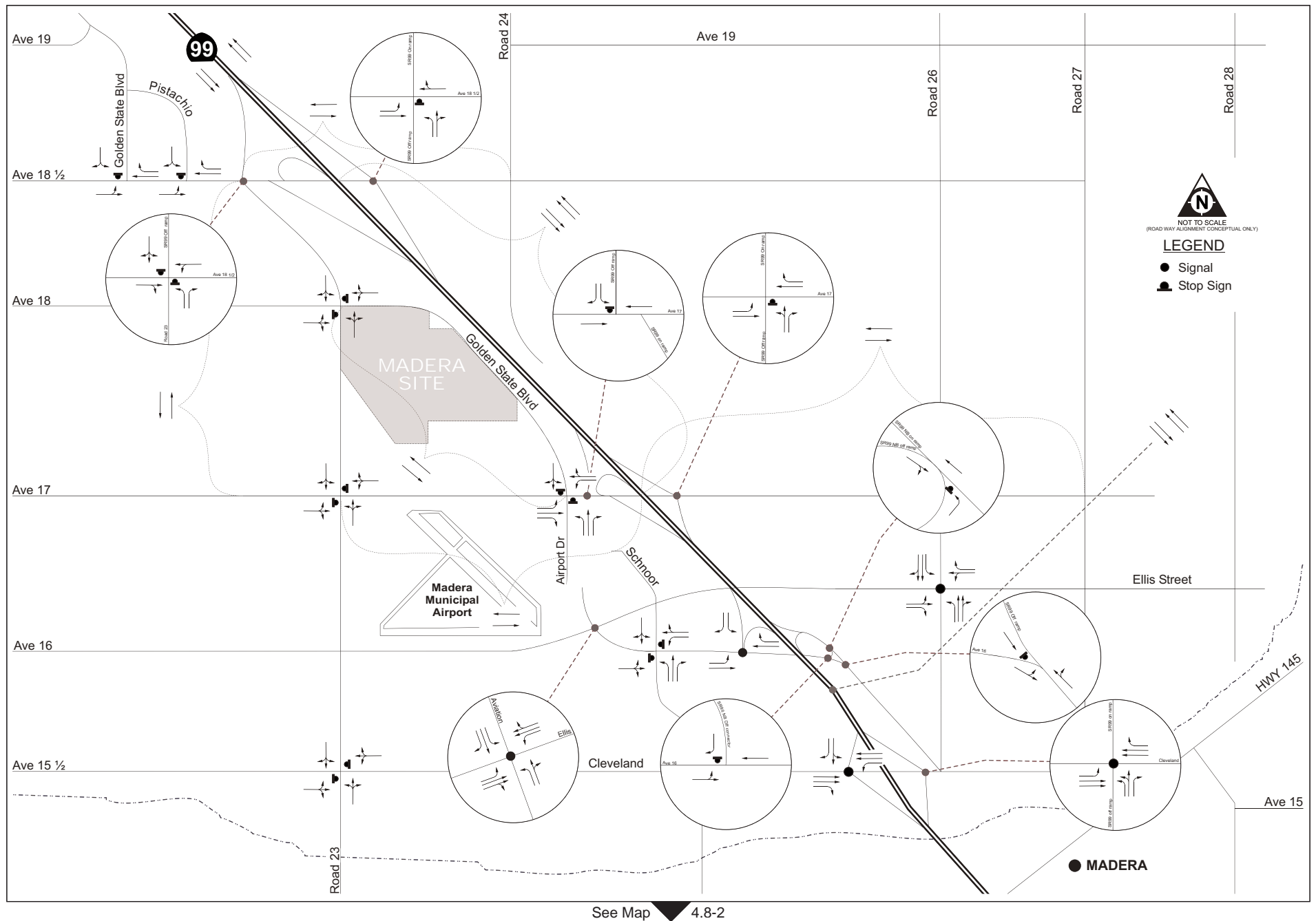


Figure 4.8-1
Madera Site – 2010 Lane Configuration and Intersection Control

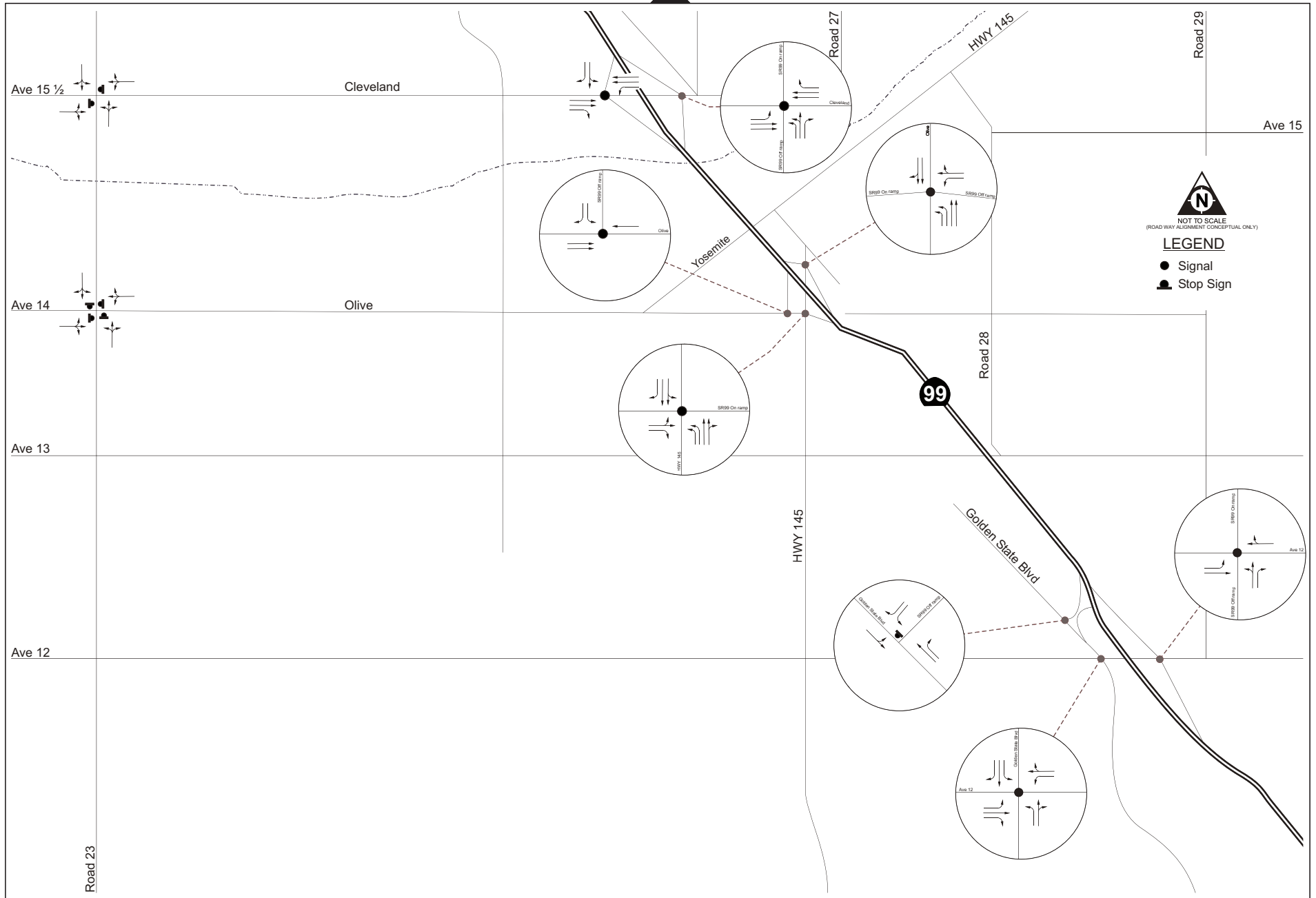


TABLE 4.8-3
FREEWAY AND ROADWAY SEGMENT PERFORMANCE –
2010 WITHOUT PROJECT (MADERA SITE)

Segment	LOS Threshold	2010 w/o Project			
		LOS		Density (pc/mi/ln) ¹	
		AM	PM	AM	PM
Freeway Segment					
SR-99 NB – North of Avenue 18½	C	C	C	23.9	24.2
SR-99 SB – North of Avenue 18½	C	C	D	19.6	31.3
SR-99 NB – Avenue 18½ to Avenue 17	C	C	C	24.9	25.5
SR-99 SB – Avenue 18½ to Avenue 17	C	C	D	20.4	33.6
SR-99 NB – South of Avenue 17	C	D	D	28.7	31.0
SR-99 SB – South of Avenue 17	C	C	E	22.8	44.4
Roadway Segment					
Avenue 18½ - Road 24 to Road 23	D	A	A	NA	NA
Road 23 – Avenue 18½ to Avenue 17	D	B	B	NA	NA
Avenue 17 – Road 23 to SR-99	D	A	A	NA	NA
Avenue 17 – SR-99 to Road 27	D	B	E	NA	NA
Golden State Boulevard – Avenue 17 to Road 23	D	A	A	NA	NA

NOTES: **Bold** text denotes unacceptable LOS.

NA = not applicable.

¹ density = passenger car per mile per lane.

--- = beyond software limitations

SOURCE: TPG Consulting, Inc. 2008; AES 2008.

2010 without project intersection conditions are presented in **Table 4.8-4**. The following Five study intersections show an unacceptable LOS without the addition of project traffic:

- Avenue 18½ at SR-99 SB ramps/Road 23
- Avenue 17 at SR-99 NB ramps
- Avenue 17 at SR-99 SB ramps
- Avenue 12/Golden State Boulevard at SR-99 SB ramps
- Avenue 12 at SR-99 SB ramps
- Avenue 17 at Golden State Boulevard

TABLE 4.8-4
INTERSECTION PERFORMANCE-
2010 WITHOUT PROJECT (MADERA SITE)

Intersection	LOS Threshold	2010 w/o Project			
		AM		PM	
		LOS	Delay (secs) ¹	LOS	Delay (secs)
Avenue 18½ at SR-99 SB ramps/Road 23					
• WB Left-Through	C	A	0.8	A	1.5
• NB Approach		C	18.5	E	36.5
• SB Approach		C	16.5	D	28.5
Avenue 18½ at SR-99 NB ramps	C				

Intersection	LOS Threshold	2010 w/o Project			
		AM		PM	
		LOS	Delay (secs) ¹	LOS	Delay (secs)
• EB Left		A	6.4	A	5.6
• NB Approach		C	21.3	C	21.4
Avenue 17 at SR-99 SB ramps					
• SB Approach	C	C	16.6	F	174.5
Avenue 17 at SR-99 NB ramps					
• EB Left	C	B	10.0	B	10.2
• NB Approach		F	114.6	F	371.0
Avenue 12/Golden State Boulevard at SR-99 SB ramps					
• SB Left-Through	C	A	6.1	A	3.7
• WB Approach		E	43.3	D	30.0
Avenue 12 at Golden State Boulevard	D	D	54.0	D	52.0
Avenue 12 at SR-99 NB ramps	C	B	17.9	D	21.7
Avenue 18 at Road 23					
• NB Left-Through-Right		A	0.1	A	0.2
• SB Left-Through-Right	D	A	1.4	A	1.4
• WB Approach		A	9.7	B	10.2
• EB Approach		B	10.7	B	11.9
Avenue 17 at Road 23					
• NB Left-Through-Right		A	0.7	A	1.4
• SB Left-Through-Right	D	A	0.7	A	0.6
• WB Approach		B	13.9	C	18.9
• EB Approach		B	12.3	B	14.9
Avenue 17 at Golden State Boulevard					
• EB Left-Through-Right		A	8.2	A	8.7
• WB Left-Through-Right	D	A	8.5	A	8.9
• NB Approach		D	22.2	D	32.4
• SB Approach		F	113.9	F	---
Ellis Street at Road 26	D	A	6.6	A	9.5
Avenue 15½ at Road 23					
• NB Left-Through-Right		A	0.0	A	0.0
• SB Left-Through-Right	D	A	1.0	A	1.8
• WB Approach		B	10.8	B	12.0
• EB Approach		A	0.0	C	11.1
Avenue 14 at Road 23	D	A	8.8	A	9.3
Avenue 16 at SR-99 SB ramps	C	A	9.3	A	10.0
Avenue 16/Avenue 16 Connector at SR-99 NB ramps					
• EB Left	C	B	10.1	B	11.4
Avenue 16 at SR-99 NB ramp connector					
• SB Left-Through	C	A	5.0	A	5.4
• WB Right		A	9.1	A	9.9

Intersection	LOS Threshold	2010 w/o Project			
		AM		PM	
		LOS	Delay (secs) ¹	LOS	Delay (secs)
Gateway/Avenue 16 at SR 99 NB Ramps	C				
• SB Approach		B	10.6	B	11.4
Cleveland Avenue/Avenue 15½ at SR-99 NB ramps	C	B	14.3	C	22.7
Cleveland Avenue/Avenue 15½ at SR-99 SB ramps	C	B	15.2	B	14.2
Avenue 16/Ellis Overcrossing at Aviation Drive	C	B	18.1	C	21.2
SR-145/Madera Avenue at SR-99 NB ramps	C	A	5.6	A	6.6
Olive Avenue/Avenue 14 at SR-99 SB off-ramp	C	B	13.1	B	14.1
Olive Avenue/Avenue 14/SR-99 SB on-ramp at SR-145	C	C	21.1	C	33.3
Avenue 18½ at Pistachio Drive	D				
• EB Approach		A	0.0	A	0.4
• SB Approach		B	14.3	C	17.3
Avenue 18½ at Golden State Boulevard	D				
• EB Approach		A	0.3	A	0.1
• SB Approach		B	11.8	B	12.2

NOTES: **Bold** text denotes unacceptable LOS.

¹ Delay in seconds per vehicle.

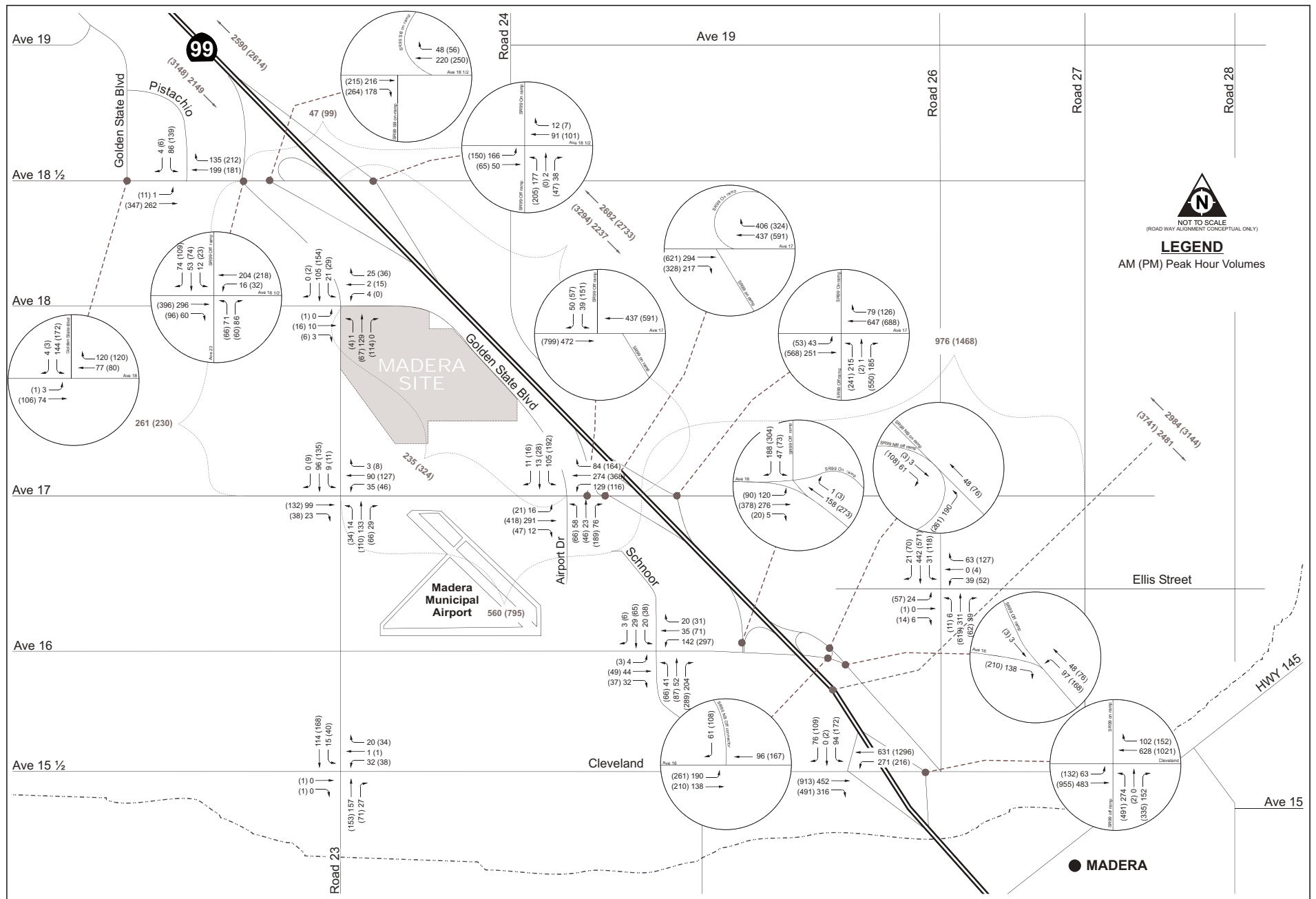
N/A = Not Available

--- = beyond software limitations

SOURCE: TPG Consulting, Inc. 2008; AES 2008.

Figures 4.8-3 and 4.8-4 present the 2010 Without Project intersection volumes at each of the Madera site study intersections.

North Fork Site. The 2010 Without Project Lane Configuration and Traffic Controls for the North Fork site study intersections are the same as shown in **Section 3.8-2**. No changes in roadway geometry are planned in the North Fork site area between the existing conditions and 2008.



SOURCE: TPG Consulting, Inc., 2008; AES, 2008

North Fork Casino EIS / 204502 ■

Figure 4.8-3
Madera Site – 2010 Intersection Volumes

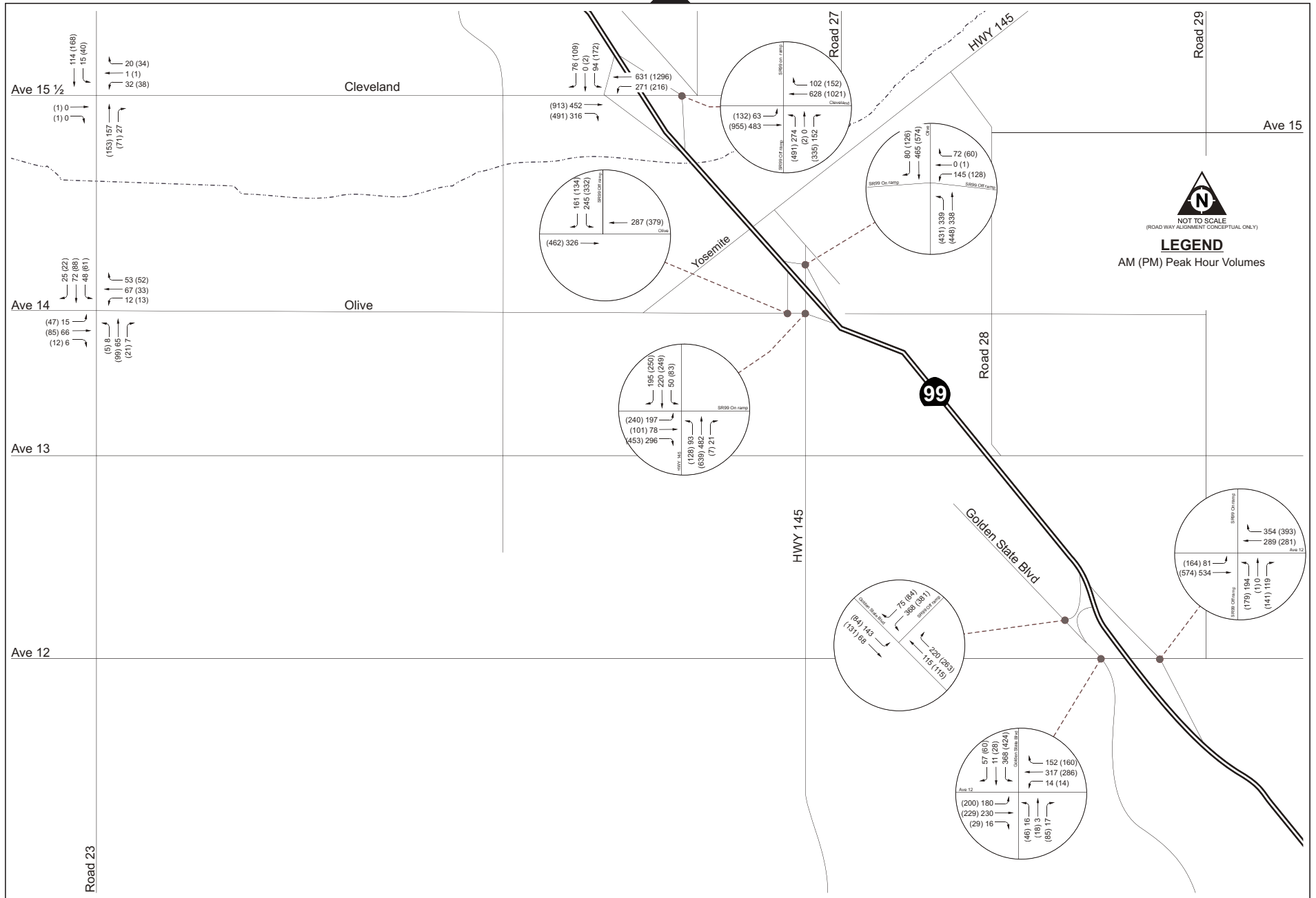


Figure 4.8-4
Madera Site – 2010 Intersection Volumes

2010 Without Project conditions are presented in **Table 4.8-5**. All study intersections show an acceptable LOS.

TABLE 4.8-5
INTERSECTION OPERATIONS-
2010 WITHOUT PROJECT (NORTH FORK SITE)

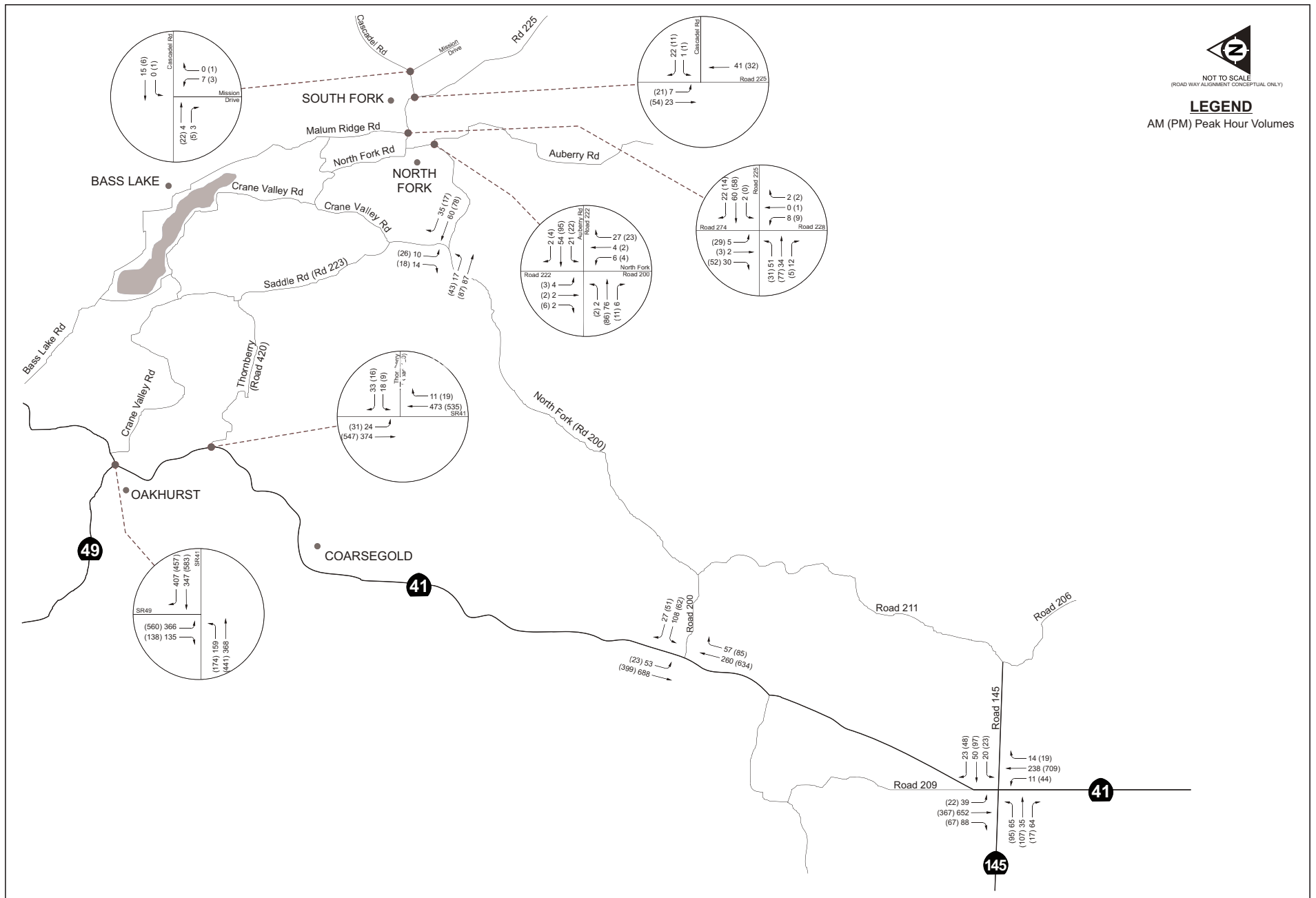
Intersection	LOS Threshold	2010 w/o Project			
		AM		PM	
		LOS	Delay (secs) ¹	LOS	Delay (secs)
SR-145 at SR-41	C	B	15.4	C	22.8
SR-41 at Road 200					
• SB Left	D	A	8.2	A	5.7
SR-41 at Thornberry Road					
• SB Left	C	A	8.8	A	9.0
• WB Approach		B	13.3	B	14.9
SR-41 at SR-49	C	B	10.0	B	12.1
Malum Ridge Road at Road 225 (Mammoth Pool Road)	D	A	7.1	A	7.4
Road 225 (Mammoth Pool Road) at Cascadel Road					
• SB Left	D	A	7.4	A	7.3
• WB Approach		A	8.7	A	8.7
Cascadel Road at Mission Drive (Federal Road 209)					
• SB left-Through	D	-	1	A	1.1
• WB Approach		A	8.7	A	8.6
North Fork Road at Auberry Road					
• EB Left-Through		A	0.2	A	0.2
• WB Left	D	A	7.4	A	7.5
• NB Approach		A	9.2	B	10.6
• SB Approach		A	9.9	A	9.8
North Fork Road at Crane Valley Road					
• EB Left-Through	D	A	1.3	A	2.7
• SB Approach		A	9.3	B	10.0

NOTES: **Bold** text denotes unacceptable LOS.

¹ Delay in seconds per vehicle.

SOURCE: TPG Consulting 2008; AES 2008.

Figure 4.8-5 presents the 2010 Without Project intersection volumes at each of the North Fork site study intersections.



4.8.2 ALTERNATIVE A – PROPOSED PROJECT

TRANSPORTATION/CIRCULATION

This section discusses the 2010 with Project condition where project trips calculated for Alternative A are added to the baseline condition.

Trip Generation

Project trip generation was calculated for Alternative A, based on the earlier discussed trip generation methodology, and is presented in **Table 4.8-6**.

TABLE 4.8-6
PROJECT TRIP GENERATION - ALTERNATIVE A

Land Uses	Size	Daily	AM		PM	
			In	Out	In	Out
Casino	268,480 sf ¹	12,163	443	190	559	496
Hotel	224,530 sf/200 Rooms ²	600	25	16	23	21
Total	493,010 sf/200 Rooms	12,763	468	206	582	517

NOTES: ¹ sf = square feet.

² Trip rate is ITE Land Use Code 310 – Hotel. Rate reduced by 36.5% to account for internal capture to/from casino.

³ All figures are approximate.

SOURCE: TPG Consulting, Inc. 2008; AES, 2008.

Trip Distribution and Assignment

A distribution pattern was prepared based on model-generated trip distribution data. Based on the trip distribution pattern presented in **Figure 4.8-6**, the project trips were assigned to the local project area roadways. Trip counts at each of the study intersections are presented in **Figures 4.8-7** and **4.8-8**.

2010 Traffic Condition With Project

This section discusses the 2010 traffic conditions with Alternative A project trips added. The 2010 Without Project conditions are reported as a baseline.

Freeway and Roadway Segment Performance

Table 4.8-7 summarizes the results of this weekday freeway and roadway segment analysis for the 2010 With Project (Alternative A) level of service conditions. As shown in **Table 4.8-7** below, the following five freeway segments and one roadway segment are shown to operate at an unacceptable LOS:

TABLE 4.8-7
FREEWAY AND ROADWAY SEGMENT PERFORMANCE –
2010 WITH ALTERNATIVE A

Segment	LOS Threshold	2010 w/o Project				With Alternative A			
		LOS		Density (pc/mi/ln) ¹		LOS		Density (pc/mi/ln)	
		AM	PM	AM	PM	AM	PM	AM	PM
Freeway Segment									
SR-99 NB – North of Avenue 18½	C	C	C	23.9	24.2	C	C	24.3	25.2
SR-99 SB – North of Avenue 18½	C	C	D	19.6	31.1	C	D	20.0	32.5
SR-99 NB – Avenue 18½ to Avenue 17	C	C	C	24.9	25.5	C	D	25.3	27.0
SR-99 SB – Avenue 18½ to Avenue 17	C	C	D	20.4	33.6	C	E	21.0	36.1
SR-99 NB – South of Avenue 17	C	D	D	28.7	31.0	D	E	31.5	38.7
SR-99 SB – South of Avenue 17	C	C	E	22.8	44.4	C	F	24.7	---
Roadway Segment									
Avenue 18½ – Road 24 to Road 23	D	A	A	NA	NA	A	A	NA	NA
Road 23 – Avenue 18½ to Avenue 17	D	B	B	NA	NA	B	B	NA	NA
Avenue 17 – Road 23 to SR-99	D	A	A	NA	NA	A	D	NA	NA
Avenue 17 – SR-99 to Road 27	D	B	E	NA	NA	C	F	NA	NA
Golden State Boulevard – Avenue 17 to Road 23	D	A	A	NA	NA	A	A	NA	NA

NOTES: **Bold** text denotes unacceptable LOS.

NA = not applicable.

OF = Overflow

--- = beyond software limitations

¹ density = passenger car per mile per lane.

SOURCE: TPG Consulting, Inc. 2008; AES 2008.

- SR-99 SB – North of Avenue 18½
- SR-99 NB – Avenue 18½ to Avenue 17
- SR-99 SB – Avenue 18½ to Avenue 17
- SR-99 NB – South of Avenue 17
- SR-99 SB – South of Avenue 17
- Avenue 17 – SR-99 to Road 27

Intersection Performance

The 2010 Without Project traffic volumes were combined with vehicle trips expected to be generated by Alternative A. **Table 4.8-8** summarizes the 2010 with Alternative A Peak Hour intersection conditions. The 2010 Without Project intersection conditions are provided as a baseline. With the addition of project traffic under Alternative A, the following 10 study intersections are forecast to operate at an unacceptable LOS:

TABLE 4.8-8
INTERSECTION OPERATIONS – 2010 WITH ALTERNATIVE A

Intersection	LOS Thres- hold	2010 w/o Project				Alternative A			
		AM		PM		AM		PM	
		LOS	Delay (secs) ¹	LOS	Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)
Avenue 18½ at SR-99 SB ramps/Road 23									
• WB Left-Through	C	A	0.8	A	1.5	A	0.8	A	1.4
• NB Approach		C	18.5	E	36.5	C	20.8	F	63.1
• SB Approach		C	16.5	D	28.5	C	17.2	E	36.5
Avenue 18½ at SR-99 NB ramps									
• EB Left	C	A	6.4	A	5.6	A	8.4	A	8.1
• NB Approach		C	21.3	C	21.4	C	22.7	D	26.4
Avenue 17 at SR-99 SB ramps									
• SB Approach	C	C	16.6	F	174.5	E	37.6	F	6974.5
Avenue 17 at SR-99 NB ramps									
• EB Left	C	B	10.0	B	10.2	B	11.0	B	13.9
• NB Approach		F	114.6	F	371.0	F	6015.5	F	4113.0
Avenue 12/Golden State Boulevard at SR-99 SB ramps									
• SB Left-Though	C	A	6.1	A	3.7	A	6.1	A	3.7
• WB Approach		E	43.3	D	30.0	F	50.7	E	44.3
Avenue 12 at Golden State Boulevard	D	D	54.0	D	52.0	D	54.3	E	58.4
Avenue 12 at SR-99 NB ramps	C	B	17.9	C	21.7	B	19.1	C	21.9
Avenue 16/Ellis Overcrossing at Aviation Drive	C	B	18.1	C	21.2	B	18.5	C	25.9
Avenue 18 at Road 23									
• NB Left-Through-Right	D	A	0.1	A	0.2	A	0.1	A	0.2
• SB Left-Through-Right		A	1.4	A	1.4	A	1.7	A	1.7
• WB Approach		A	9.7	B	10.2	A	9.6	B	10.1
• EB Approach		B	10.7	B	11.9	B	10.8	B	12.1
Avenue 17 at Road 23									
• NB Left-Through-Right	D	A	0.7	A	1.4	A	0.7	A	1.7
• SB Left-Through-Right		A	0.7	A	0.6	A	0.7	A	0.6
• WB Approach		B	13.9	C	18.9	C	15.5	E	39.0
• EB Approach		B	12.3	B	14.9	B	13.1	C	19.2
Avenue 17 at Golden State Boulevard									
• EB Left	D	A	8.2	A	8.7	A	9.2	B	10.7
• WB Left		A	8.5	A	8.9	A	9.2	B	10.8
• NB Approach		C	22.2	D	32.4	F	250.4	F	---
• SB Approach		F	113.9	F	---	F	---	F	---

Ellis Street at Road 26	D	A	6.6	A	9.5	A	7.6	B	13.3
Avenue 15½ at Road 23									
• NB Left-Through-Right		A	0.0	A	0.0	A	0.0	A	0.0
• SB Left-Through-Right	D	A	1.0	A	1.8	A	1.1	A	2.0
• WB Approach		B	10.8	B	12.0	B	11.0	B	12.7
• EB Approach		A	0.0	B	11.1	B	0.0	B	11.6
Avenue 14 at Road 23	D	A	8.8	A	9.3	A	9.0	A	9.8
Avenue 16 at SR-99 SB ramps	C	A	9.3	A	10.0	A	9.2	B	10.1
Avenue 16/Avenue 16 Connector at SR-99 NB ramps	C								
• EB Left		B	10.1	B	11.4	B	10.3	B	11.9
Avenue 16 at SR-99 NB ramps Connector									
• EB Left-Through	C	A	5.0	A	5.4	A	5.2	A	5.8
• SB Approach		A	9.1	A	9.9	A	9.2	A	9.9
Gateway/Avenue 16 at SR 99 NB Ramps									
• SB Approach	C	B	10.6	B	11.4	B	10.7	B	11.5
Cleveland Avenue/Avenue 15½ at SR-99 NB ramps	C	B	14.3	C	22.7	B	14.9	D	36.4
Cleveland Avenue/Avenue 15½ at SR-99 SB ramps	C	B	15.2	B	14.2	B	15.4	B	18.6
SR-145/Madera Avenue at SR-99 NB ramps	C	A	5.6	A	6.6	A	5.6	B	10.7
Olive Avenue/Avenue 14 at SR-99 SB off-ramp	C	B	13.1	B	14.1	B	13.9	B	17.0
Olive Avenue/Avenue 14/SR-99 SB on-ramp at SR-145	C	C	21.1	C	33.3	C	22.2	D	38.7
Avenue 18½ at Pistachio Drive									
• EB Left-Through		A	0.0	A	0.4	A	0.0	A	0.4
• SB Approach	D	B	14.3	C	17.3	B	15.0	C	20.3
Avenue 18½ at Golden State Boulevard									
• EB Approach	D	A	0.3	A	0.1	A	0.3	A	0.1
• SB Approach		B	11.8	B	12.2	B	12.1	B	12.9

NOTES: **Bold** text denotes unacceptable LOS.

¹ Delay in seconds per vehicle.

N/A = Not Available

--- = beyond software limitations

SOURCE: TPG Consulting, Inc. 2008; AES 2008.

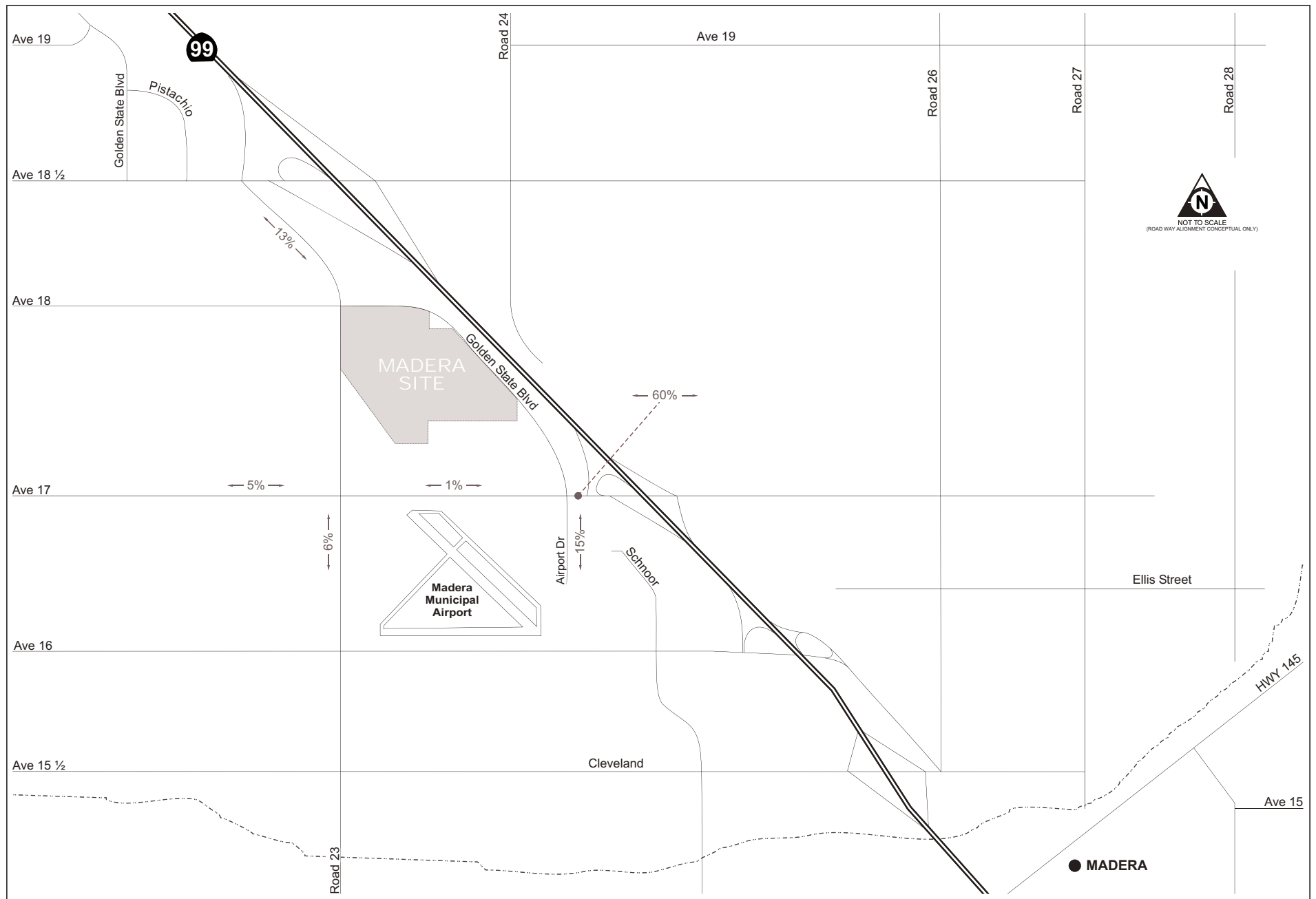
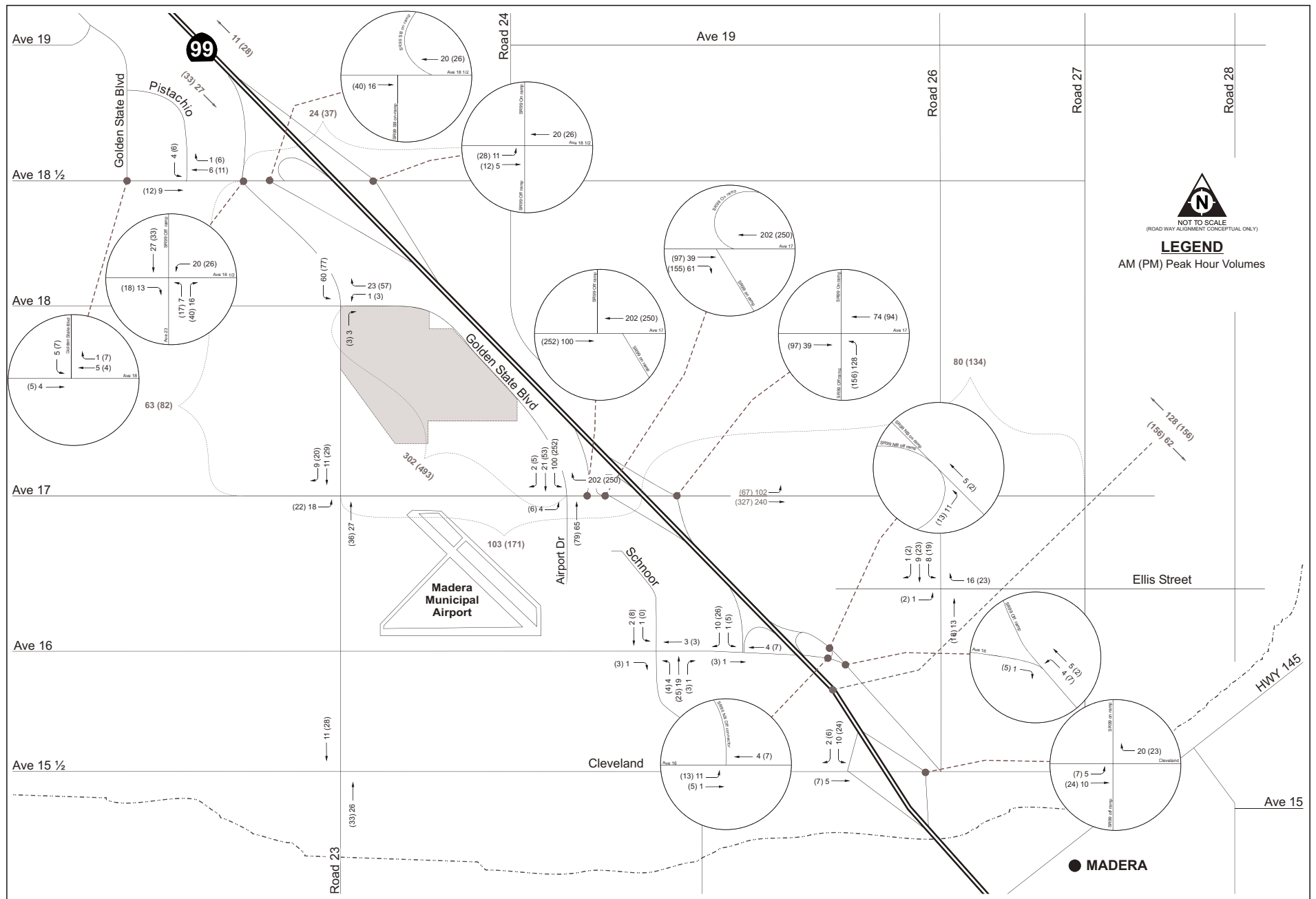


Figure 4.8-6
Madera Site – Trip Distribution Percentages With Alternative A



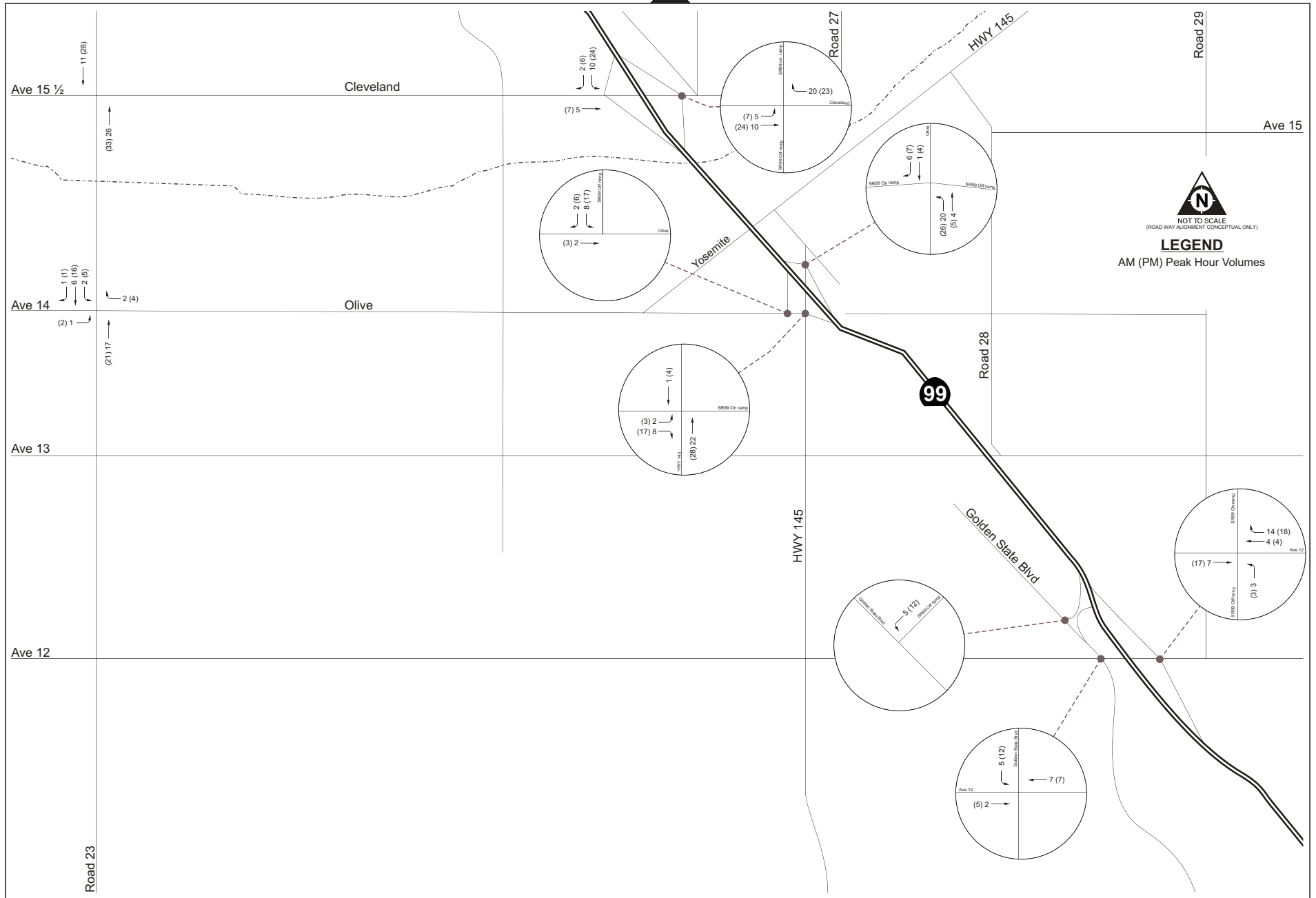


Figure 4.8-8
Madera Site – Intersection Trip Assignment With Alternative A

- Avenue 18½ at SR-99 SB ramps/Road 23
- Avenue 18½ at SR-99 NB ramps
- Avenue 17 at SR-99 SB ramps
- Avenue 17 at SR-99 NB ramps
- Avenue 12/Golden State Boulevard at SR-99 SB ramps
- Avenue 12/Golden State Boulevard
- Avenue 17 at Road 23
- Avenue 17 at Golden State Boulevard
- Cleveland Avenue/Avenue 15½ at SR 99 NB ramps
- Olive Avenue/Avenue 14/SR-99 SB on-ramp at SR-145

Figures 4.8-9 and 4.8-10 present the 2010 With Alternative A intersection volumes at each of the Madera site study intersections.

Impact Analysis

Alternative A's contribution to unacceptable traffic operations represents a significant impact. Mitigation measures for the 2010 With Project (Alternative A) are discussed in **Section 5.2.7** of this document. With the incorporation of project mitigation measures, each of the intersections and roadway segments that are shown to have an unacceptable LOS would be improved to an acceptable LOS. This would result in a less than significant impact.

Construction Impacts

Alternative A construction activities would result in traffic-related impacts associated with additional trips generated during employee travel to the site and equipment and materials deliveries. Employee trips are based on the number of employees estimated to be on-site during different points throughout the project. Construction of Alternative A is estimated to take approximately one year. The construction-related employee traffic is expected to remain relatively consistent throughout the project. It is assumed that 20-percent of the workers will leave and return to the site for various purposes during the day. It is estimated that the project would facilitate up to 1,206 construction employees daily (direct construction employment). However, it is conservatively assumed that 10-percent of workers would carpool to and from the site, with an additional 10-percent arriving and leaving outside of the area wide commute peak hours. It is therefore assumed that on average there would be 1,447 daily one-way vehicle trips to the site, with 965 potential peak hour trips. Construction worker arrival would peak between 6:30 AM and 7:30 AM, and departure would peak between 4:00 PM and 5:00 PM. The AM peak is prior to the area wide commute peak of 7:30 AM to 8:30 AM. In the evening, there would be a period of overlap in the employee commute peak and the area wide commute peak of 4:30 PM to 5:30 PM. The construction phase trips are significantly less than those anticipated during operation, where Alternative A is projected to generate 12,763 daily trips (1,099 PM peak).

Construction traffic would be reduced when compared to peak hour operation traffic and would represent only 11.3 percent of the operational trips for Alternative A.

The delivery and removal of heavy equipment to the site would happen only a few times during the construction duration, as large construction vehicles would stay on-site for extended periods of time. When transport of these vehicles occurs, all trucks would comply with applicable Department of Transportation load limits to reduce potential road degradation. Deliver of construction materials to the site, including building materials such as wood, steel, and masonry, is anticipated to add 5 trips a day to the roadways.

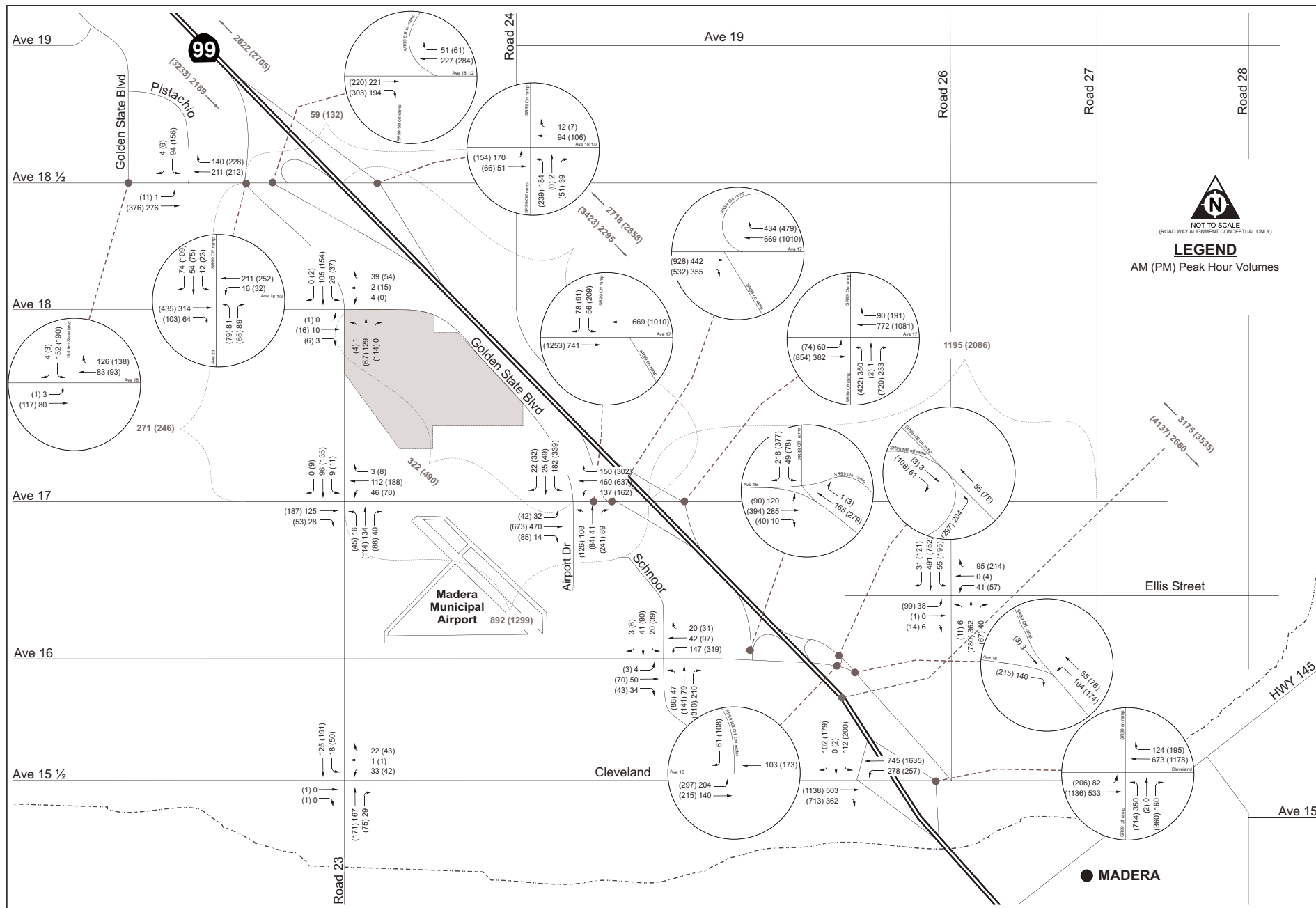
Impacts resulting from the construction of Alternative A would be temporary in nature with significantly less trips generated during construction than operation of Alternative A, resulting no distinct significant impacts. In addition, large construction vehicle trips would be minimal, resulting in a less than significant impact to road surfaces in the vicinity of the site. Although construction traffic impacts would be less than significant, mitigation measures summarized in **Section 5.0** have been included to further reduce impacts.

LAND USE

Consistency with Local Land Use Regulations

Madera County or City of Madera land use regulations would not apply to the Madera site once the land is taken into trust. The only applicable land use regulations would be Tribal, as the Madera site would be converted to reservation land. The Tribe relies upon the Tribal Council, the governing body of the Tribe, to guide and regulate land use on tribal lands. The Tribal Government desires to work cooperatively with local and State authorities on matters related to land use. Accordingly, Madera County and the City of Madera land use regulations are assessed below.

Alternative A would involve commercial development on land that is currently outside Madera city limits but within the City's area of influence. Alternative A would be consistent with most goals, objectives, and policies of Madera County and the City of Madera (see **Section 3.8.3**).



See Map 4.8-10

Figure 4.8-9
Madera Site – 2010 Intersection Volumes With Alternative A

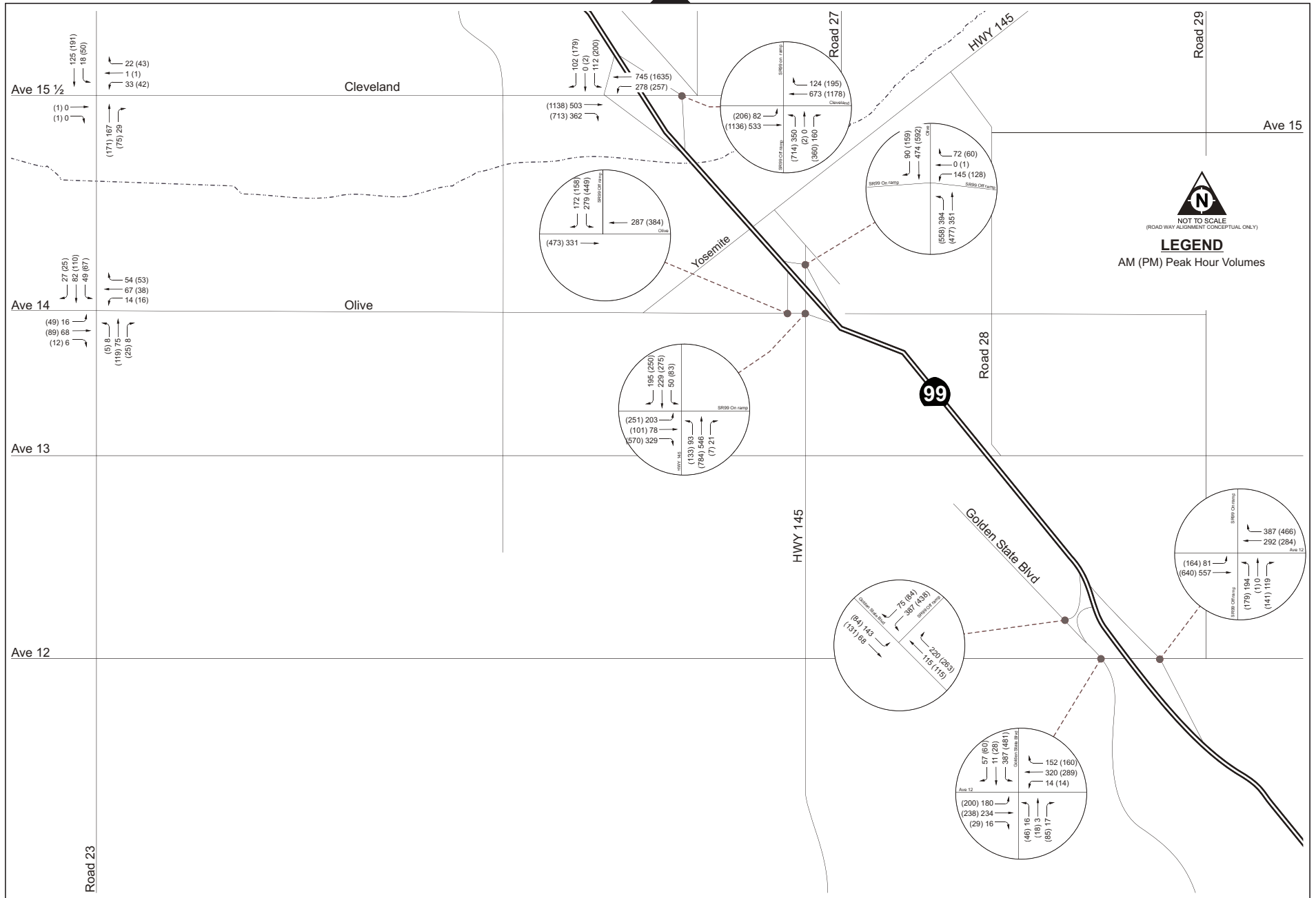


Figure 4.8-10
Madera Site – 2010 Intersection Volumes With Alternative A

Table 4.8-9 lists the policies of the Madera County General Plan and indicates the consistency of each project alternative, for ease of comparison.

The Tribe entered into an MOU with Madera County on August 16, 2005. MOU terms relevant to land use include the following:

- A. 6 (g) No Golf Course. The Tribe does not intend to, and unless otherwise agreed by the City of Madera, the Tribe shall not, construct a golf course on the Trust Property until the earlier of (i) twenty years from the date of the MOU, (ii) the date on which the aggregate number of rounds of golf played on the Madera Municipal Golf course in any given calendar year exceeds 60,000 18-hole equivalent rounds, or (iii) the date on which the Madera Municipal Golf Course is sold or ceases operations.
- B. 6 (h) No Water Park. The Tribe does not intend to, and, unless otherwise agreed by the County, the Tribe shall not develop, construct or operate a water park on the Trust Property within twenty years from the date of the MOU.

Note that consistency or inconsistency with local land use regulations does not by itself constitute an environmental impact. Environmental impacts, such as potential conflicts with neighboring land uses, are discussed below.

Airport Compatibility

The Madera site is within the influence of the Madera Municipal Airport. Most of the proposed development sections of the Madera site are within Zone D, with a portion of the parking lot and an access road lying in Zones B1 and B2. No development would occur in Zone A (**Figure 3.8-12**).

No Alternative A structures would exceed 70 feet in height, well below the 150 foot building restriction that applies to the portions of the Madera site where development is proposed (**Figure 3.8-13**).

Madera Municipal Airport's main runway is approximately 5,544 feet long (Madera, 2007), which subjects all objects within 20,000 feet and exceeding a 100:1 horizontal slope to Federal Aviation Administration (FAA) notification requirements. The proposed hotel/casino for Alternative A would be within 20,000 feet of the airport runway and approximately 71.5 feet tall (including a lightning rod). The proposed hotel/casino for Alternative A is subject to FAA notification because it exceeds the 100:1 horizontal slope requirement. All other proposed structures for Alternative A, including the parking, water and wastewater structures do not exceed the 100:1 horizontal slope requirement for development adjacent to an airport runway.

TABLE 4.8-9
MADERA COUNTY GENERAL PLAN LAND USE CONSISTENCY

Madera County General Plan		Land Use Consistency (Yes or No)				Discussion
Section	Goal or Policy Summary	Alt A	Alt B	Alt C	Alt D	
Commercial Land Use						
1.D	To designate adequate commercial land for and promote development of commercial uses to meet the present and future needs of Madera County residents and visitors and maintain economic viability.	Yes	Yes	Yes	Yes	The Proposed Action and Alternatives would add a major commercial attraction to the region. Development of each alternative will ensure that any negative effects are mitigated to the fullest extent possible.
1.D.4	To designate adequate commercial land for and promote development of commercial uses to meet the present and future needs of Madera County residents and visitors and maintain economic viability.	Yes	Yes	Yes	Yes	The Proposed Action and Alternatives would add a major commercial attraction to the region. Development of each alternative will ensure that any negative effects are mitigated to the fullest extent possible.
Jobs-Housing Balance						
1.F	To work toward a jobs-housing balance in existing urban areas and new growth areas.	No	No	No	No	The Proposed Action and Alternatives are estimated to draw from 10 to 263 new households to the County, depending on the alternative, without providing additional housing. Yet, existing housing can accommodate new households and this number of new households would only occupy up to 0.8% of the currently proposed housing projects.
1.F.2	Designate and encourage the development of employment-generating uses in appropriate areas near existing and designated residential development.	Yes	Yes	Yes	Yes	The Proposed Action and Alternatives would result in the creation of numerous employment opportunities within Madera County.
Visual and Scenic Resources						
1.H	To protect the visual and scenic resources of Madera County as important quality-of-life amenities and asset in the promotion of recreation and tourism.	No	No	No	No	The Proposed Action and the Alternatives at the Madera site would represent a change to the viewshed and be visible from several public vantage points. The Alternative at the North Fork site would represent a change to the viewshed, but not be visible from public vantage points.
1.H.1	Require that new development in scenic rural areas avoid location structures along ridgelines, on steep slopes, or in other highly-visible locations, except when the location is necessary to avoid hazards or when the screening measures to minimize the visibility of structures and graded areas are incorporated into the project.	Yes	Yes	Yes	No	The Madera site does not contain ridgelines or steep slopes. The North Fork site consists almost entirely of steep slopes, including the proposed location for the Alternative D casino.
1.H.2	Require new development to incorporate sound soil conservation practices and minimizes land alterations.	Yes	Yes	Yes	No	A grading and drainage plan that includes erosion control measures will be used for the design and build out of the Proposed Project and Alternatives. Substantial land alteration is necessary for the development of a casino on the North Fork site.
Streets and Highways						
2.A	To provide for the long-range planning and development of the County's roadway system, ensure the safe and efficient movement of people and goods, and provide sufficient access	Yes	Yes	Yes	Yes	Traffic studies were conducted to assess the effect of the Proposed Project and Alternatives on traffic and roadways. Mitigation for negative traffic impacts is contained in Section 5.2.7 .

Madera County General Plan		Land Use Consistency (Yes or No)				Discussion
Section	Goal or Policy Summary	Alt A	Alt B	Alt C	Alt D	
	to existing and new development.					
2.A.9	To identify the potential impacts of new development on traffic service levels, the County shall require the preparation of traffic impact analyses for developments determined to be large enough to have potentially significant traffic impacts. The County may allow exceptions to the level of service standards where it finds that the improvements or other measures required to achieve the LOS standards are unacceptable.	Yes	Yes	Yes	Yes	Traffic studies were conducted to assess the effect of the Proposed Project and Alternatives on traffic and roadways. Mitigation for negative traffic impacts is contained in Section 5.2.7 . Acceptable LOS standards are maintained after mitigation.
2.A.17	Require proposed new development projects to analyze their contribution to increased traffic and to implement improvements necessary to address the increase.	Yes	Yes	Yes	Yes	Traffic studies were conducted to assess the effect of the Proposed Project and Alternatives on traffic and roadways. Mitigation for negative traffic impacts is contained in Section 5.2.7 .
2.A.19	Assess fees on new development sufficient to cover the fair share portion of that development's impacts on the local and regional transportation system. Exceptions may be made when new development generates significant public benefits and when alternative sources of funding can be identified to offset foregone revenues.	Yes	Yes	Yes	Yes	Traffic studies were conducted to assess the effect of the Proposed Project and Alternatives on traffic and roadways. Mitigation for negative traffic impacts is contained in Section 5.2.7 .
2.A.21	Require that new nonresidential development provide for off-street parking, either on-site or through contributions to consolidated lots or structures, particularly where these facilities are located in or near residential areas.	Yes	Yes	Yes	Yes	Surface parking spaces and parking structure spaces will be provided for Alternatives A and B. Surface parking spaces will be provide for Alternatives C and D.
Transit Goal						
2.B	To promote a safe and efficient mass transit system, including both rail and bus, to reduce congestion, improve the environment, and provide viable non-automotive means of transportation in and through Madera County	No	No	No	No	No mass transit system is planned for transportation to and from the Proposed Project or Alternatives. Various mass-transit related mitigation measures are recommended in Section 5.0 to reduce air quality and transportation impacts. Railway-specific mitigation measures are not included.
2.B.7	Require new development to provide sheltered public transit stops, with turnouts. The County will also consider development of turnouts in existing developed areas when roadway improvements are made or as deemed necessary for traffic flow and public safety.	Yes	Yes	Yes	No	No mass transit system is planned for transportation to and from the Proposed Action or Alternatives. Various mass-transit related mitigation measures, including providing public transit stops, are recommended in Section 5.0 , for all alternatives except for Alternative D, to reduce air quality and transportation impacts.
Transportation Control Measures (TCM)						
2.C	To maximize the efficient use of transportation facilities so as to: 1) reduce travel demand on the County's roadway system; 2) reduce the amount of investment required in new or expanded facilities; 3) reduce the quantity of emissions of pollutants from automobiles; and 4) increase the energy	No	No	No	No	The Proposed Action and Alternatives will increase the travel demand on the County's roadway system.

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	efficiency of the transportation system.					
2.C.4	Encourage major traffic generators to develop and implement trip reduction measures.	Yes	Yes	Yes	Yes	No trip reduction measures are proposed by any of the project alternatives. Trip reduction measures are recommended in Section 5.2.3 .
2.C.5	Require major development projects to prepare transportation studies that address potential use of bicycle routes and facilities and the use of public transportation.	Yes	Yes	Yes	Yes	Traffic studies were conducted to assess the effect of the Proposed Project and Alternatives on traffic and roadways. These studies addressed impacts and potential use of non-automobile transportation. Mitigation for negative traffic impacts is contained in Section 5.2.7 .
Non-motorized Transportation						
2.D	To provide a safe, comprehensive, and integrated system of facilities for non-motorized transportation to meet the needs of commuters and recreational users.	Yes	Yes	Yes	Yes	Non-motorized transportation systems would be provided according to applicable plans when developing the Proposed Project and Alternatives, including traffic mitigation.
2.D.7	Require developers to finance and install pedestrian walkways, equestrian trails, and multipurpose paths in new development, as appropriate.	Yes	Yes	Yes	Yes	Non-motorized transportation systems, including pedestrian walkways, would be provided according to applicable plans when developing the Proposed Project and Alternatives, including traffic mitigation.
General Public Facilities and Services						
3.A	To ensure the timely development of public facilities and to maintain an adequate level of service to meet the needs of existing and future development.	Yes	Yes	Yes	Yes	The Proposed Project and Alternatives would maintain an adequate level of service for their public facilities, including water and wastewater facilities.
3.A.1	Ensure through the development review process that adequate public facilities and services are available to serve new development. The County shall not approve new development where existing facilities are inadequate unless the applicant can demonstrate that all necessary public facilities will be installed or adequately financed and maintained (through fees or other means).	Yes	Yes	Yes	Yes	Adequate public facilities and services will be installed as part of the construction of the Proposed Project or Alternatives.
Public Facilities and Services Funding						
3.B	To ensure that adopted facility and service standards are achieved and maintained through the use of equitable funding methods.	Yes	Yes	Yes	Yes	The Tribe would fund any additional improvements and maintenance required for the public services to the Proposed Project or Alternatives.
3.B.1	Require that new development pay its fair share of the cost of developing new facilities and services and upgrading existing public facilities and services subject to the requirements of California Government Code Section 66000, et seq. (AB1600); exceptions may be made when new development generates significant public benefits (e.g., low income housing) and when alternative sources of funding can be identified to offset foregone revenues.	Yes	Yes	Yes	Yes	The Tribe would be required to pay for its fair share of the cost of constructing public facilities required by the Proposed Project or Alternatives.
Water Supply and Delivery						

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3.C	To ensure the availability of an adequate and safe water supply and the maintenance of high quality water in water bodies and aquifers used as sources of domestic and agricultural water supply.	Yes	Yes	Yes	Yes	The USEPA NPDES storm water program would regulate discharge of stormwater from construction activities at the site of the Proposed Project or Alternatives. The Proposed Project and Alternatives would be designed to incorporate stormwater detention basins and the use of sediment/grease traps.
3.C.1	Approve new development only if an adequate water supply to serve such development is demonstrated.	Yes	Yes	Yes	Yes	An on-site groundwater well would be able to adequately supply the Proposed Project and Alternatives.
3.C.2	Approve new development based on the following guidelines for water supply: a. Urban and suburban developments should rely on community water systems. b. Rural communities should rely on community water systems. Individual wells may be permitted in cases where no community water system exists or can be extended to the property but development will be limited to densities, which can be safely developed with wells. c. Agricultural areas should rely on public water systems where available, otherwise individual water wells are acceptable.	No	No	No	No	After consultation with the City of Madera, it is proposed that Alternatives A-C rely primarily on on-site wells for their water supply. Alternative D would rely either on on-site supply or a community water system.
3.C.3	Limit development in areas identified as having severe water table depression to uses that do not have high water usage or to uses served by a surface water supply.	Yes	Yes	Yes	Yes	The sites for the Proposed Project and Alternatives have not been identified as having severe water table depression. Mitigation measures are included in Section 5.2.2 to reduce impacts to groundwater.
3.C.4	Require that water supplies serving new development meet state water quality standards.	Yes	Yes	No	Yes	The water supplies for the gaming alternatives would be required by any Tribal-State Compact to meet federal and state water quality standards. Alternative C development would be required to meet federal water quality standards.
3.C.5	Require that new development adjacent to bodies of water used as domestic water sources adequately mitigate potential water quality impacts on these water bodies.	Yes	Yes	Yes	Yes	The USEPA NPDES storm water program would regulate discharge of stormwater from construction activities at the site of the Proposed Project or Alternatives. The Proposed Project and Alternatives would be designed to incorporate stormwater detention basins and the use of sediment/grease traps.
3.C.6	Promote efficient water use and reduced water demand by: a. Requiring water-conserving design and equipment in new construction. b. Encouraging water-conserving landscaping and other conservation measures. c. Encouraging retrofitting existing development with water-conserving devices. d. Encouraging use of recycled or gray water for landscaping.	Yes	Yes	Yes	Yes	The Proposed Project and Alternatives would conserve water as recommended in Section 5.2.2 . If an on-site wastewater treatment plant (WWTP) is constructed, gray water would be recycled in the operation of each alternative development.

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3.C.7	Promote the use of reclaimed wastewater to offset the demand for new water supplies.	Yes	Yes	Yes	Yes	If an on-site WWTP is used for the Proposed Project or Alternatives, reclaimed water would be used for toilet flushing and landscape irrigation.
Wastewater Collection, Treatment and Disposal						
3.D	To ensure adequate wastewater collection and treatment and the safe disposal of liquid and solid waste.	Yes	Yes	Yes	Yes	Wastewater from the Proposed Project and Alternatives would be treated either at an on-site or off-site WWTP.
3.D.2	Promote efficient water use and reduced wastewater system demand by: a. Requiring water-conserving design and equipment in new construction; b. Encouraging retrofitting with water-conserving devices; and c. Designing wastewater systems to minimize inflow and infiltration, to the extent economically feasible.	Yes	Yes	Yes	Yes	The Proposed Project and Alternatives would conserve water as recommended in Section 5.2.2 .
3.D.3	Permit on-site sewage treatment and disposal on parcels where all current regulations can be met; where parcels have the area, soils, and other characteristics that permit such disposal facilities without threatening surface or groundwater quality or posing any other health hazards; and where community sewer service is not available and cannot be provided.	Yes	Yes	Yes	Yes	The Proposed Project and Alternatives may include an on-site WWTP while complying with all current regulations.
3.D.4	Require that the development, operation, and maintenance of on-site disposal systems complies with the requirements and standards of the County Department of Environmental Health.	Yes	Yes	Yes	Yes	Development, operation, and maintenance of on-site disposal systems for the Proposed Project and Alternatives would comply with County standards and requirements.
Storm Drainage and Flood Control						
3.E	To provide efficient, cost-effective, and environmentally sound storm drainage and flood control facilities.	Yes	Yes	Yes	Yes	Construction of the Proposed Project and Alternatives would comply with the Grading and Drainage Plan and would be designed to incorporate the stormwater detention basins and the use of sediment/grease traps.
3.E.2	Require new development to provide protection from the 100-year flood as a minimum.	Yes	Yes	Yes	Yes	Construction of the Proposed Project and Alternatives would comply with the Grading and Drainage Plan, which includes elevation of proposed development above the 100-year floodplain elevation.
3.E.4	Require new development to pay its fair share of the costs of Madera County storm drainage and flood control improvements.	Yes	Yes	Yes	Yes	Such payments would not be necessary, given that storm drainage systems would be contained on-site. Detention basins would ensure that off-site drainage is equal or less than pre-development levels.
3.E.5	Encourage project designs that minimize drainage concentrations and impervious coverage and maintain, to the extent feasible, natural site drainage conditions.	Yes	Yes	Yes	Yes	The Proposed Project and Alternatives would include construction of a storm drainage system to manage stormwater flow that would convey the stormwater detention basins, and would include the use of vegetated swales and vegetated stormwater detention basins. Natural site cover will be maintained to the extent possible.
3.E.6	Future drainage system discharges shall comply with	Yes	Yes	Yes	Yes	Future drainage system discharges for the Proposed Project and

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	applicable state and federal pollutant discharge requirements.					Alternatives would comply with applicable state and federal pollutant discharge requirements.
3.E.7	Encourage the use of natural stormwater drainage systems to preserve and enhance natural features.	Yes	Yes	Yes	Yes	The Proposed Project and Alternatives would include construction of a storm drainage system to manage stormwater flow that would convey the stormwater detention basins, and would include the use of vegetated swales and vegetated stormwater detention basins.
Landfills, Transfer Stations, and Solid Waste Recycling						
3.F	To ensure the safe and efficient disposal or recycling of solid waste generated in Madera County.	Yes	Yes	Yes	Yes	Recycling bins would be installed for the Proposed Project and Alternatives. Green waste and recyclables would be separated from main waste, and cardboard and paper products would be compacted.
3.F.2	Promote maximum use of solid waste source reduction, recycling, composting, and environmentally safe transformation of wastes.	Yes	Yes	Yes	Yes	Recycling bins would be installed for the Proposed Project and Alternatives. Green waste and recyclables would be separated from main waste, and cardboard and paper products would be compacted.
3.F.6	Require that all new development comply with applicable provisions of the Madera County Integrated Waste Management Plan.	Yes	Yes	Yes	Yes	The Proposed Project and Alternatives would comply with the applicable provisions of the Madera County Integrated Waste Management Plan.
Law Enforcement, Fire, and Emergency Medical Services						
3.G	To ensure the prompt and efficient provision of law enforcement, fire, and emergency medical facility and service needs.	Yes	Yes	Yes	Yes	The Tribe would make one-time and annual payments to the City of Madera and Madera County to fund increased law enforcement, fire, and emergency medical services. These payments would either be made in the current MOU with Madera County under Alternative A, or as recommended in Section 5.2.6 for the remaining alternatives.
3.G.3	Require new development to pay its fair share of the costs for providing law enforcement, fire, and emergency medical facilities, subject to the requirements of California Government Code Section 66000 et seq. (AB1600).	Yes	Yes	Yes	Yes	The Tribe would make one-time and annual payments to the City of Madera and Madera County to fund increased law enforcement, fire, and emergency medical services. These payments would either be made in the current MOU with Madera County under Alternative A, or as recommended in Section 5.2.6 for the remaining alternatives.
3.G.4	Require that new development be designed to maximize safety and security and minimize fire hazard risks to life and property.	Yes	Yes	Yes	Yes	The Proposed Project and Alternatives would be designed to maximize safety and practice preventative measures such as the use of spark arrestors on equipment.
Fire Protection Services						
3.H	To protect residents of and visitors to Madera County from injury and loss of life and to protect property and watershed resources from fires.	Yes	Yes	Yes	Yes	The Tribe would make one-time and annual payments to the City of Madera and Madera County to fund increased fire protection services. These payments would either be made in the current MOU with Madera County under Alternative A, or as recommended in Section 5.2.6 for the remaining alternatives. Additional fire protection mitigation measures are contained in Section 5.2.8 . These MOU contributions and mitigation measures have been determined after discussions with local fire protection providers regarding adequate service requirements for each

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						alternative.
3.H.4	Require new development to develop or fund fire protection facilities that, at a minimum, maintain the (above) service level standards (see Policy 3.H.1 or 3.H.2 in the Madera County General Plan Policy Document or Section 3.8 of this document for service level standards).	Yes	Yes	Yes	Yes	The Tribe would make one-time and annual payments to the City of Madera and Madera County to fund increased fire protection services. These payments would either be made in the current MOU with Madera County under Alternative A, or as recommended in Section 5.2.6 for the remaining alternatives. Additional fire protection mitigation measures are contained in Section 5.2.8 . These MOU contributions and mitigation measures have been determined after discussions with local fire protection providers regarding adequate service requirements for each alternative.
3.H.5	Ensure that all proposed developments are reviewed for compliance with fire safety standards by responsible local fire agencies per the Uniform Fire Code and other state and local ordinances.	Yes	Yes	Yes	Yes	Fire protection features, including sprinkler systems and fire-resistant construction, would be incorporated into the Proposed Project and Alternatives. They would comply with applicable fire safety standards.
Utilities						
3.J.3	Require proposed new development in identified underground conversion districts and along scenic corridors to construct underground utility lines on and adjacent to the site of proposed development or, when this is infeasible, to contribute funding for future undergrounding.	Yes	Yes	Yes	Yes	Gas and electricity can be hooked up to existing overhead PG&E lines located near the site and telecommunication cables can be extended to the property line for the Proposed Project and Alternatives.
Agriculture and Natural Resources						
5.A	To designate adequate agricultural land and promote development of agricultural uses to support the continued viability of Madera County's agricultural economy.	Yes	Yes	Yes	Yes	The development for Alternatives A-C is located primarily on Farmland of Local Importance as classified by the Natural Resources Conservation Service (NRCS). More than half of the Madera site would remain in open space and could be used for agricultural purposes under Alternatives A-C, however. In addition, Section 5.2.7 recommends the purchase of agricultural conservation easements to mitigate the conversion of agricultural land under Alternatives A-C. Alternative D is not located on Important Farmland.
5.A.1	Maintain agriculturally designated areas for agricultural uses and direct urban uses to designated new growth areas, existing communities, and/or cities.	No	No	No	No	The Madera site is currently zoned for agricultural uses and would be partially developed under Alternatives A-C. Alternative D is currently trust land and is therefore not subject to local land use regulations. The North Fork site is not, however, a designated growth area, existing community, or city.
5.A.2	Discourage the conversion of prime agricultural land to urban uses unless an immediate and clear need can be demonstrated that indicates a lack of land for non-agricultural uses.	No	No	No	Yes	A very small piece of prime agricultural land would be converted from agricultural uses under Alternatives A-C. The North Fork site does not include prime agricultural land.
5.A.3	Ensure that new development and public works projects do	No	No	No	Yes	The Madera site is currently zoned for agricultural uses and would be

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	not encourage further expansion of urban uses into designated agricultural areas.					partially developed under Alternatives A-C. Alternative D is currently trust land and is therefore not subject to local land use regulations.
5.A.5	Allow the conversion of existing agricultural land to urban uses only within designated urban and rural residential areas, new growth areas, and city spheres of influence where designated for urban development on the General Plan Land Uses Diagram.	No	No	No	No	The Madera site is currently zoned for agricultural uses and would be partially developed under Alternatives A-C. Alternative D is currently trust land and is therefore not subject to local land use regulations, including the General Plan.
5.A.6	Encourage continued and, where possible, increased agricultural activities on lands designated for agricultural uses.	Yes	Yes	Yes	Yes	The Madera site is currently zoned for agricultural uses and would be partially developed under Alternatives A-C. Alternative D is currently trust land and is therefore not subject to local land use regulations.
5.A.13	Require development within or adjacent to designated agricultural areas to incorporate design, construction, and maintenance techniques that protect agriculture and minimize conflicts with adjacent agricultural uses.	Yes	Yes	Yes	Yes	The Proposed Action and Alternatives have been designed to minimize conflicts with adjacent agricultural uses to the extent possible. In addition, Section 5.2.7 recommends that a Tribal right to farm ordinance be enacted.
Water Resources						
5.C	To protect and enhance the natural qualities of Madera County's streams, creeks and groundwater.	Yes	Yes	Yes	Yes	The Proposed Project and Alternatives would generally protect and enhance the natural qualities of Madera County's streams, creeks, and groundwater to the extent possible through avoidance, flood control, mitigation measures (see Section 5.0) and BMPs.
5.C.2	Minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of roads and bridges, and use of off-road vehicles. The County shall discourage grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of creeks and damage to riparian habitat.	Yes	Yes	Yes	Yes	All grading activities for the Proposed Project and Alternatives would be done using SWPPP measures and BMPs as outlined in the Grading and Drainage Plan and required by the Clean Water Act.
5.C.3	Require new development of facilities near rivers, creeks, reservoirs, or substantial aquifer recharge areas to mitigate any potential impacts of release of pollutants in floodwaters or flowing river, stream, creek, or reservoir waters.	Yes	Yes	Yes	Yes	All grading activities for the Proposed Project and Alternatives would be done using SWPPP measures and BMPs as outlined in the Grading and Drainage Plan and required by the Clean Water Act. Construction of the Proposed Project and Alternatives would comply with the Grading and Drainage Plan and would be designed to incorporate the stormwater detention basins and the use of sediment/grease traps.
5.C.4	Require the use of feasible and best management practices (BMPs) to protect streams from the adverse effects of construction activities, and shall encourage the urban storm drainage systems and agricultural activities to use BMPs.	Yes	Yes	Yes	Yes	All grading activities for the Proposed Project and Alternatives would be done using SWPPP measures and BMPs as outlined in the Grading and Drainage Plan and required by the Clean Water Act. Construction of the Proposed Project and Alternatives would comply with the Grading and Drainage Plan and would be designed to incorporate the stormwater detention basins and the use of sediment/grease traps.
5.C.5	Approve only wastewater disposal facilities that will not contaminate groundwater or surface water.	Yes	Yes	Yes	Yes	The WWTP used for the Proposed Project or Alternatives would use an immersed membrane bioreactor (MBR) system to provide tertiary-treated

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						water for reuse or disposal. Wastewater disposal would be regulated according to the requirements of the Clean Water Act.
5.C.7	Protect groundwater resources from contamination and further overdraft by encouraging water conservation efforts and supporting the use of surface water for urban and agricultural uses wherever feasible.	Yes	Yes	Yes	Yes	The Proposed Project and Alternatives would conserve water as recommended in Section 5.2.2 . If an on-site wastewater treatment plant (WWTP) is constructed, gray water would be recycled in the operation of each alternative development.
Wetland and Riparian Areas						
5.D	To protect wetland communities and related riparian areas throughout Madera County as valuable resources.	Yes	Yes	Yes	Yes	Wetlands and riparian areas would be completely avoided by Alternatives A-C. A small amount of wetlands would be impacted by Alternative D. Such impacts would be mitigated, as required by the Clean Water Act.
5.D.1	Comply with the wetlands policies of the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game. Coordination with these agencies at all levels of project review shall continue to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed.	Yes	Yes	Yes	Yes	All federal environmental laws would apply to trust land.
5.D.2	Require new development to mitigate wetland loss in both regulated and non-regulated wetlands through any combination of avoidance, minimization, or compensation.	Yes	Yes	Yes	Yes	Wetlands and riparian areas would be completely avoided by Alternatives A-C. A small amount of wetlands would be impacted by Alternative D. Such impacts would be mitigated, as required by the Clean Water Act.
5.D.3	Development should be designed in such a manner that pollutants and siltation will not significantly adversely affect the value or function of wetlands.	Yes	Yes	Yes	Yes	The Proposed Project and Alternatives would be designed to incorporate stormwater detention basins and the use of sediment/grease traps.
5.D.4	Require riparian protection zones around natural watercourses. Riparian protection zones shall include the bed and bank of both low- and high-flow channels and associated riparian vegetation, the band of riparian vegetation outside the high-flow channel, and buffers of 100 feet in width as measured from the top of bank of unvegetated channels and 50 feet in width as measured from the outer edge for the canopy of riparian vegetation. Exceptions may be made in existing developed areas where existing development and lots are located within the setback areas.	No	No	No	No	Buffers would be maintained around riparian areas to the extent possible (these buffers would not be 100 feet in width, in all cases, however), although some encroachment would occur under Alternative D.
5.D.5	Identify and conserve remaining upland habitat areas adjacent to wetlands and riparian areas that are critical to the feeding or nesting of wildlife species associated with these wetland and riparian areas.	Yes	Yes	Yes	Yes	Upland habitat areas adjacent to wetlands and riparian areas would be conserved to the extent possible.
5.D.6	Require new private or public developments to preserve and enhance existing native riparian habitat unless public safety concerns require removal of habitat for flood control or other	Yes	Yes	Yes	No	Riparian habitat would be preserved and enhanced under Alternatives A-C. Some riparian habitat would be developed under Alternative D.

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	public purposes. In cases where new private or public development results in modification or destruction of riparian habitat for purposes of flood control, the developers shall be responsible for creating new riparian habitats within or near the project area at a ration of three acres of new habitat for every acre destroyed.					
Fish and Wildlife Habitat						
5.E	To protect, restore, and enhance habitats that support fish and wildlife species so as to maintain populations at viable levels.	No	No	No	No	Alternatives A-D would affect wildlife habitats, but not at levels that would threaten the viability of species populations. Nonetheless, Alternatives A-D are development projects whose main purpose is not habitat restoration.
5.E.2	Require development in areas known to have particular value of wildlife to be carefully planned and, where possible, located so that the reasonable value of the habitat for wildlife is maintained.	Yes	Yes	Yes	No	Unlike the North Fork site, the Madera site is not particularly valuable for wildlife. Wildlife habitat on approximately half of the North Fork site would be substantially degraded under Alternative D.
5.E.3	Encourage private landowners to adopt sound wildlife habitat management practices, as recommended by the California Department of Fish and Game officials and the U.S. Fish and Wildlife Service.	Yes	Yes	Yes	Yes	Construction and development of the Proposed Project or Alternatives would maintain wildlife habitat to the extent required by the Endangered Species Act and as recommended in Section 5.2.4 .
Vegetation						
5.F	To preserve and protect the valuable vegetation resources of Madera County.	Yes	Yes	Yes	Yes	The Proposed Project or Alternatives would not have a significant effect on regional vegetation resources.
5.F.1	Encourage landowners and developers to preserve the integrity of existing terrain and natural vegetation in visually sensitive areas such as hillsides and ridges, and along important transportation corridors.	No	No	No	No	The integrity of existing terrain will be maintained under Alternatives A-C. Natural vegetation will not be preserved under Alternative A-C, which would be located along SR-99, an important transportation corridor. Neither the integrity of existing terrain, nor existing vegetation would be maintained under Alternative D, which is located in a visually sensitive area.
5.F.2	Require developers to use native and compatible non-native species, especially drought-resistant species, to the extent possible in fulfilling landscaping requirements imposed as conditions of discretionary permit approval or for project mitigation.	Yes	Yes	Yes	Yes	Native plants would be used as recommended in Section 5.2.4 to mitigate for the removal of native vegetation under Alternative D. be used to the extent possible for landscaping. Use of native plants in landscaping is recommended in Section 5.2.3 to conserve water.
5.F.6	Require that new development preserve natural woodlands to the maximum extent possible.	Yes	Yes	Yes	Yes	The Proposed Project and Alternatives have been designed to preserve natural woodlands to the maximum extent possible.
Open Space for the Preservation of Natural Resources						
5.H	To preserve and enhance open space lands to maintain the natural resources of the County.	Yes	Yes	Yes	Yes	The Proposed Project and Alternatives have been designed to preserve and enhance open space lands to maintain natural resources to the extent possible.

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5.H.2	Require that new development be designed and constructed to preserve the following types of areas and features as open space to the maximum extent feasible: a. High erosion hazard areas; b. Scenic and trial corridors; c. Streams and streamside vegetation; d. Wetlands; e. Other significant stands of vegetation; f. Wildlife corridors; and g. Any areas of special ecological significance.	Yes	Yes	Yes	No	The Proposed Project and Alternatives have been designed to preserve the noted areas to the maximum extent possible, with the exception of Alternative D, which would encroach into wetlands.
5.H.5	Require that significant natural, open space, and cultural resources be identified in advance of development and incorporated into site-specific development project design.	Yes	Yes	Yes	Yes	Significant natural, open space, and cultural resources have been identified as part of constraints analyses and analyses during the preparation of this Environmental Impact Statement, and have been considered by the Tribe and the lead agency in designing the Proposed Project and Alternatives.
Air Quality						
5.J	To protect and improve air quality in Madera County and the region.	No	No	No	No	Alternatives A-D would marginally contribute to worsening regional air quality.
5.J.5	Require new development projects that exceed adopted SJVUAPCD emission thresholds to submit an air quality analysis for review and approval. Based on this analysis, the County shall require appropriate mitigation measures consistent with the SJVUAPCD's 1991 Air Quality Attainment Plan (or updated edition).	Yes	Yes	Yes	Yes	An air quality analysis has been completed for the Proposed Project and Alternatives. Mitigation measures have been recommended as a result of this analysis (Section 5.2.3).
5.J.11	Require developers to pave all access roads, driveways, and parking areas serving new commercial and industrial development.	Yes	Yes	Yes	Yes	Access roads, driveways, and parking areas would be paved under the Proposed Project and Alternatives.
Air Quality – Transportation/Circulation						
5.K	To integrate air quality planning with the transportation planning process.	Yes	Yes	Yes	Yes	The Proposed Project and Alternatives have incorporated air quality planning with the transportation planning process.
5.K.1	Require new development to be planned to result in smooth flowing traffic conditions for major roadways. This includes traffic signals and traffic signal coordination, parallel roadways, and intra- and inter-neighborhood connections where significant reductions in overall emissions can be achieved.	Yes	Yes	Yes	Yes	The Proposed Project and Alternatives have incorporated air quality planning with the transportation planning process. For instance, analysis determined that the development alternatives' impact on CO would be considered significant if the project would degrade operation of a signalized intersection to level of service (LOS) E or F, or substantially worsen LOS at a signalized intersection already operating at F. Traffic impacts would be mitigated to reduce these LOS levels.
5.K.5	Require large new developments to dedicate land for and construct appropriate improvements for suitably located park-	No	No	No	No	No park-and-ride lots are proposed for the Proposed Project or Alternatives.

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	and-ride lots, subject to the requirements of California Government Code Section 66000 et seq. (AB 1600).					
Seismic and Geological Hazards						
6.A	To minimize loss of life, injury, and property damage due to seismic and geological hazards.	Yes	Yes	Yes	Yes	The Proposed Project or Alternatives would minimize loss of life, injury, and property damage due to seismic and geological hazards to the extent possible.
6.A.1	Require the preparation of a soils engineering and geologic-seismic analysis prior to permitting development in areas prone to geological or seismic hazards (i.e., groundshaking, landslides, liquefaction, critically expansive soils).	Yes	Yes	Yes	Yes	Construction of the Proposed Project or Alternatives would incorporate earthquake design provisions, which safe guard against major structural failures and loss of life.
Flood Hazards						
6.B	To minimize the risk of loss of life, injury, damage to property, and economic and social dislocations resulting from flood hazards.	Yes	Yes	Yes	Yes	The Proposed Project or Alternatives would minimize the risk of loss of life, injury, property damage, and economic and social dislocations resulting from flood hazards to the extent possible.
6.B.1	Require flood-proofing of structures in areas subject to flooding.	Yes	Yes	Yes	Yes	The Grading and Drainage Plan incorporates fill to elevate the finished floor of the Proposed Project or Alternatives at least 1.0 foot above the FEMA 100-year floodplain.
6.B.3	Restrict uses in designated floodways to those that are tolerant of occasional flooding and do not restrict or alter flow of floodwaters. Such uses may include agriculture, outdoor recreation, mineral extraction, and natural resource areas.	Yes	Yes	Yes	Yes	The Proposed Action or Alternatives will be designed in a manner constant with the requirements for structures within the 100-year flood plain.
6.B.4	Require that all development within areas subject to 100-year floods be designed and constructed in a manner that will not cause floodwaters to be diverted onto adjacent property or increase flood hazards to other areas.	Yes	Yes	Yes	Yes	Construction of the Proposed Project and Alternatives would comply with the Grading and Drainage Plan and would be designed to incorporate the stormwater detention basins.
6.B.5	Require flood control structures, facilities, and improvements to be designed to conserve resources, incorporate and preserve scenic values, and to incorporate opportunities for recreation, where appropriate.	Yes	Yes	Yes	Yes	The Proposed Project and Alternatives would design flood control improvements to conserve resources and preserve scenic values and recreation to the extent possible. Stormwater detention basins, for instance, would be vegetated.
Fire Hazards						
6.C	To minimize the risk of loss of life, injury, and damage to property and watershed resources resulting from unwanted fires.	Yes	Yes	Yes	Yes	The Tribe would make one-time and annual payments to the City of Madera and Madera County to fund increased fire protection services. These payments would either be made in the current MOU with Madera County under Alternative A, or as recommended in Section 5.2.6 for the remaining alternatives. Additional fire protection mitigation measures are contained in Section 5.2.8 . These MOU contributions and mitigation measures have been determined after discussions with local fire protection providers regarding adequate service requirements for each alternative.

Madera County General Plan		Land Use Consistency (Yes or No)				Discussion
Section	Goal or Policy Summary	Alt A	Alt B	Alt C	Alt D	
6.C.3	New development shall be required to have water systems that meet County fire flow requirements. Where minimum fire flow is not available to meet County standards, alternative fire protection measures, including sprinkler systems, shall be identified and may be incorporated into development if approved by the appropriate fire protection agency.	Yes	Yes	Yes	Yes	The Proposed Project and Alternatives would comply with County fire flow requirements.
6.C.4	The County shall review project proposals to identify potential fire hazards and prevent or mitigate such hazards to acceptable levels of risk.	Yes	Yes	Yes	Yes	The Tribe would make one-time and annual payments to the City of Madera and Madera County to fund increased fire protection services. These payments would either be made in the current MOU with Madera County under Alternative A, or as recommended in Section 5.2.6 for the remaining alternatives. Additional fire protection mitigation measures are contained in Section 5.2.8 . These MOU contributions and mitigation measures have been determined after discussions with local fire protection providers regarding adequate service requirements for each alternative.
6.C.5	Require development to have adequate access for fire and emergency vehicles and equipment. All major subdivisions shall have two points of ingress and egress.	Yes	Yes	Yes	Yes	The Tribe would make one-time and annual payments to the City of Madera and Madera County to fund increased fire protection services. These payments would either be made in the current MOU with Madera County under Alternative A, or as recommended in Section 5.2.6 for the remaining alternatives. Additional fire protection mitigation measures are contained in Section 5.2.8 . These MOU contributions and mitigation measures have been determined after discussions with local fire protection providers regarding adequate service requirements for each alternative.
Airport Hazards						
6.D	To minimize the risk of loss of life, injury, damage to property, and economic and social dislocations resulting from airport hazards.	Yes	Yes	Yes	Yes	The Proposed Project and Alternatives would minimize associated airport hazards.
6.D.1	Ensure that new development around airports does not create safety hazards such as lights from direct or reflective sources, smoke, electrical interference, hazardous chemicals, or fuel storage in violation of adopted safety standards.	Yes	Yes	Yes	Yes	The Tribe would provide nighttime lighting for the parking areas that shines only on the parking areas and not surrounding areas. The Tribe would also limit building height and prohibit anything that interferes with aircraft from the site.
6.D.2	Limit land uses in airport safety zones to those uses listed in the applicable airport comprehensive land use plans (CLUPs) as compatible uses. Exceptions shall be made only as provided for in the CLUPs. Such uses shall also be regulated to ensure compatibility in terms of location, height, and noise.	Yes	Yes	Yes	Yes	The Tribe would either maintain current aviation easements within Zones A, B1, and B2 on the Madera site or enter into an agreement with the City of Madera to allow for the protections contained in the current aviation easement. The North Fork site is not located in an airport safety zone.
Noise						
7.A	To protect County residents from the harmful and annoying	Yes	Yes	Yes	Yes	The Proposed Project and Alternatives would protect residents from

Madera County General Plan		Land Use Consistency (Yes or No)				Discussion
Section	Goal or Policy Summary	Alt A	Alt B	Alt C	Alt D	
	effects of exposure to excessive noise.					excessive noise exposure.
7.A.2	Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed 60 db L _{dn} within the outdoor activity areas of existing or planned noise-sensitive land uses and 45 dB L _{dn} in interior spaces of existing or planned noise-sensitive land uses.	Yes	Yes	Yes	Yes	Increased noise from the Proposed Project and Alternative traffic, as described in Section 4.10 , would be minimal and would not be expected to exceed these levels at noise sensitive locations.
7.A.5	Noise which will be created by new non-transportation noise sources, or existing noise sources, or existing non-transportation noise sources which undergo modification that may increase noise levels, shall be mitigated so as not to exceed the noise level standards of Table 7.A.4 (of the Madera County General Plan Policy Document) on lands designated for noise-sensitive uses. This policy does not apply to noise levels associated with agricultural operations.	Yes	Yes	Yes	Yes	Noticeable noise associated with Alternatives A-D would be transportation related.
7.A.6	Enforce the State Noise Insulation Standards (California Code of Regulations, Title 24) and chapter 35 of the Uniform Building code (UBC) concerning interior noise exposure for multi-family housing, hotels and motels.	Yes	Yes	Yes	Yes	Increased noise from the Proposed Project and Alternative traffic, as described in Section 4.10 , would be minimal and would not be expected to exceed these levels at noise sensitive locations.
7.A.7	Where the development of a project may result in land uses being exposed to existing or projected future noise levels exceeding the levels specified by the policies of the noise section of the General Plan, the County shall require an acoustical analysis early in the review process so that noise mitigation may be included in the project design.	Yes	Yes	Yes	Yes	An acoustical analysis was prepared for the Proposed Project and the Alternatives.

SOURCE: County of Madera, 1995; AES, 2006.

In compliance with FAA notification requirements, the latitude, longitude, height, and distance to the Madera Municipal Airport runway of each of the four corners of the proposed hotel/casino for Alternative A were submitted to the FAA. The FAA analyzed all four corners and issued a “determination of no hazard to air navigation” statement on January 18, 2007 (**Appendix V**). The FAA determined that the location and development of a 72-foot tall hotel/casino would not constitute a hazard to air navigation. The FAA also stated that marking and lighting are not necessary for aviation safety.

The height of a crane to construct the project features would exceed the FAA 100:1 horizontal slope requirement for Alternative A. The crane height would range between 30 to 50 feet above the project features and would represent a significant impact if found to be a hazard to air navigation during construction. Mitigation measures presented in **Section 5.2.7** would reduce impacts to less than significant for potential hazards to air navigation due to the temporary use of a crane.

The proposed wastewater retention and stormwater detention ponds (**Section 2**) may attract birds, especially during spring and fall migrations. However, the Federal Aviation Administration (FAA) has indicated that the wildlife is only considered a hazard if it blocks the direct flight path (Chiang, 2005). The nearest detention basin would be approximately 0.5 miles away from the landing zone and outside of the flight path. Therefore, no significant impact to airport operations from these ponds would occur. In addition, stormwater detention ponds would be designed to detain stormwater for relatively short periods of time during storm events. These ponds would be dry for the vast majority of the year.

Distracting lights which could be mistaken for airport lights are considered a hazard to flight and are prohibited within Airport Compatibility Zones A, B1, B2, and D. Pilots may also confuse well-lit parking lots for airport runways. Light is a potentially significant impact to airport operations. Mitigation is recommended in **Section 5.2.7** that would reduce this impact to a less than significant level.

Other possible conflicts could occur between airport operations and Alternative A, including nuisance effects on the Madera site from aircraft overflights; blocking airspace over the Madera site with tall trees, buildings, or other objects; and electrical interference. Potential conflicts represent a potentially significant effect to airport operations. Mitigation is recommended in **Section 5.2.7** that would reduce these effects to a less than significant level.

Effects to Project Area

Land uses surrounding the Madera site include SR-99, rural residential, agriculture, commercial, a golf course, and the Madera Municipal Airport. Development of Alternative A would add light, noise, and traffic to the surrounding environment, potentially resulting in disturbances to

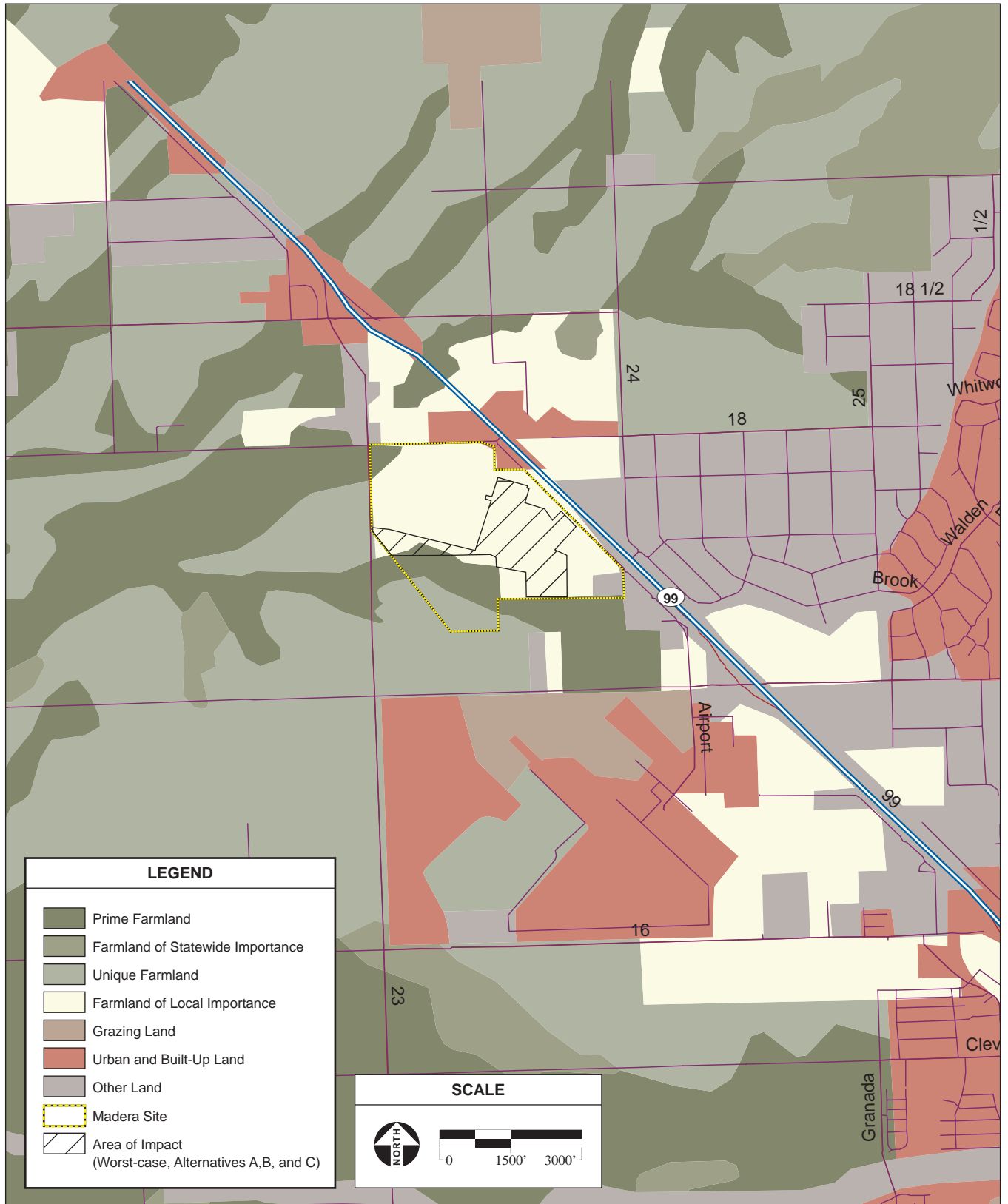
rural residences in the area. In addition, commercial development in a predominately agricultural area potentially subjects patrons and employees to nuisance effects from surrounding agricultural operations, such as noise and dust. Placing the casino near the middle of the Madera site (see **Section 2.2**) leaves a buffer between the casino/hotel and surrounding rural residential and agricultural uses. The buffer would minimize effects of noise and light on nearby residences and the effects of surrounding agricultural operations on the proposed developments. Furthermore, the Madera County right to farm ordinance (Ord. 522 § 2(part), 1989) will continue to protect neighboring farmers from nuisance suits brought by the Tribe or potential patrons on the site. Additionally, the Tribe and the Madera Irrigation District (MID) have signed a Memorandum of Understanding (MOU) under which the Tribe agrees to accept the inconvenience of nearby agricultural operations (see **Section 2.2.10**), further reducing the potential for conflicts with neighboring land uses. Thus, no significant effects, such as precluding existing or planned land uses or disruption of access or significant conflicts with existing land uses, would occur. Nonetheless, mitigation measures are discussed in **Section 5.2.7** that would reduce land use effects.

AGRICULTURE

As shown in **Sections 3.2** and **3.8**, the Madera site includes a variety of soils with varying suitability for agricultural use. The majority of the site, including the approximately 85-acre area slated for development under Alternatives A, B, and C (all have similar footprints), is classified as farmland of local importance. Farmland of local importance is defined as tracts of land that are not identified as having national (prime or unique farmland) or statewide importance, but which have nonetheless been identified by a local agency as important farmlands (7 C.F.R. § 657.5).

Most of the proposed development area (**Figure 4.8-11**) is made up of San Joaquin sandy loam 0 to 3% slope soils (SaA). SaA soils have a poor Storie Index rating of 27. A rating of 27 indicates that the soil has severe limitations and requires special management for use as crops (see **Table 3.8-14**). A small portion of the development area also occurs on Atwater loamy sand 0 to 3% slope soils (AwA). AwA soils have a good Storie Index rating of 76, indicating that the soil is suitable for most crops, but has minor limitations that require a few special management needs. Finally, a small portion of the development area occurs on Tujunga loamy sand 0 to 3% slope soils (TwA). TwA soils have an average Storie Index rating of 56, indicating that the soil is suited to a few crops or to special crops and requires special management.

The Farmland Protection Policy Act (FPPA) requires that federal agencies evaluate the value of farmland in order to evaluate adverse effects of its proposed action on the protection of farmland. According to the FPPA, farmland value is determined by a combination of two ratings: 1) the land evaluation rating and 2) the site assessment rating (7 C.F.R. § 658.5).



SOURCE: California Division of Land Resource Protection, 2002; AES, 2006

North Fork Casino EIS / 204502 ■

Figure 4.8-11
Impact to Agricultural Soils

The land evaluation rating is completed by the Natural Resource Conservation Service (NRCS) and is based on information from several sources including soil surveys, NRCS field office technical guides, soil potential/productivity ratings, land capability classifications, and important farmland determinations. Based on this information, farmland proposed for conversion is assigned a rating between 0 and 100 points, representing the relative value, for agricultural production, of the farmland to be converted compared to other farmland in the same local government jurisdiction.

The site assessment rating is completed by the Federal agency and is based on specified criteria meant to evaluate the characteristics of the site and surrounding area, other than on-site soil characteristics, that tend to affect the value of the site for agricultural production. For instance, one criterion is the size of the site in relation to the average-size farming unit in the County. A larger site is more valuable for agricultural production than a smaller site and is therefore assigned a higher rating by the Federal agency. The Federal agency must assign a rating for each of the twelve FPPA-defined site assessment criteria (see Part VI of Form AD-1006, contained in **Appendix Q**). Maximum points for each criterion ranges from 5 to 20 points, for a maximum total site assessment rating of 160 points.

The FPPA recommends that the Federal agency combine the land evaluation rating with the site assessment rating to identify the effect of its proposed action on farmland, and make a determination as to the suitability of the site for protection as farmland. Once the combined score is computed, the U.S. Department of Agriculture (USDA) recommends that sites receiving a total score of less than 160 not be given further consideration for protection and no additional sites need to be evaluated (in an attempt to reduce impacts by protecting the site in question). Sites receiving scores totaling 160 or more should be given increasingly higher levels of consideration for protection (7 C.F.R. § 658.4).

The NRCS has evaluated the relative value of the farmland to be converted under either Alternatives A, B, or C (all have a similar footprint) to be 69 out of 100 (the land evaluation rating). The site assessment rating has been computed at 74 out of 160. The combined FPPA point total is 143 out of 260 possible points, which is lower than the USDA protection threshold of 160 points (**Appendix Q**).

Given the generally poor quality of agricultural soils where development is proposed, the combined FPPA score of 143, and the retention of a large portion of the site as open space that could be used for agricultural purposes, Alternative A would have a less than significant impact on agriculture. In addition, the Tribe has agreed in the MID MOU to establish arrangements with local providers for the sale and purchase of local agricultural products and to establish an agricultural demonstration project for educational purposes on the Madera site, promoting and

benefiting regional agricultural operations. Nonetheless, mitigation measures have been included in **Section 5.2.7** that would further reduce Alternative A's impacts to agriculture.

4.8.3 ALTERNATIVE B - REDUCED INTENSITY

TRANSPORTATION/CIRCULATION

This section discusses the 2010 with Project condition where project trips calculated for Alternative B are added to the baseline condition.

Trip Generation

Project trip generation was calculated for Alternative B, based on the earlier discussed methodology and is presented in **Table 4.8-10**. No captured or pass-by trip reductions were utilized.

Trip Distribution and Assignment

Based on the trip distribution pattern presented in **Figure 4.8-12**, the project trips were assigned to the local project area roadways. Trip counts at each of the study intersections are presented in **Figures 4.8-13** and **4.8-14**.

TABLE 4.8-10
PROJECT TRIP GENERATION - ALTERNATIVE B

Land Uses	Size	Daily	AM		PM	
			In	Out	In	Out
Casino	198,990 sf ¹	9,026	328	141	414	368
Total	198,990 sf	9,026	328	141	414	368

NOTES: ¹sf = square feet.

SOURCE: TPG Consulting, Inc. 2008; AES, 2008.

2010 Traffic Conditions

This section discusses the 2010 traffic conditions with Alternative B project trips added. The 2010 without Project conditions are reported as a baseline.

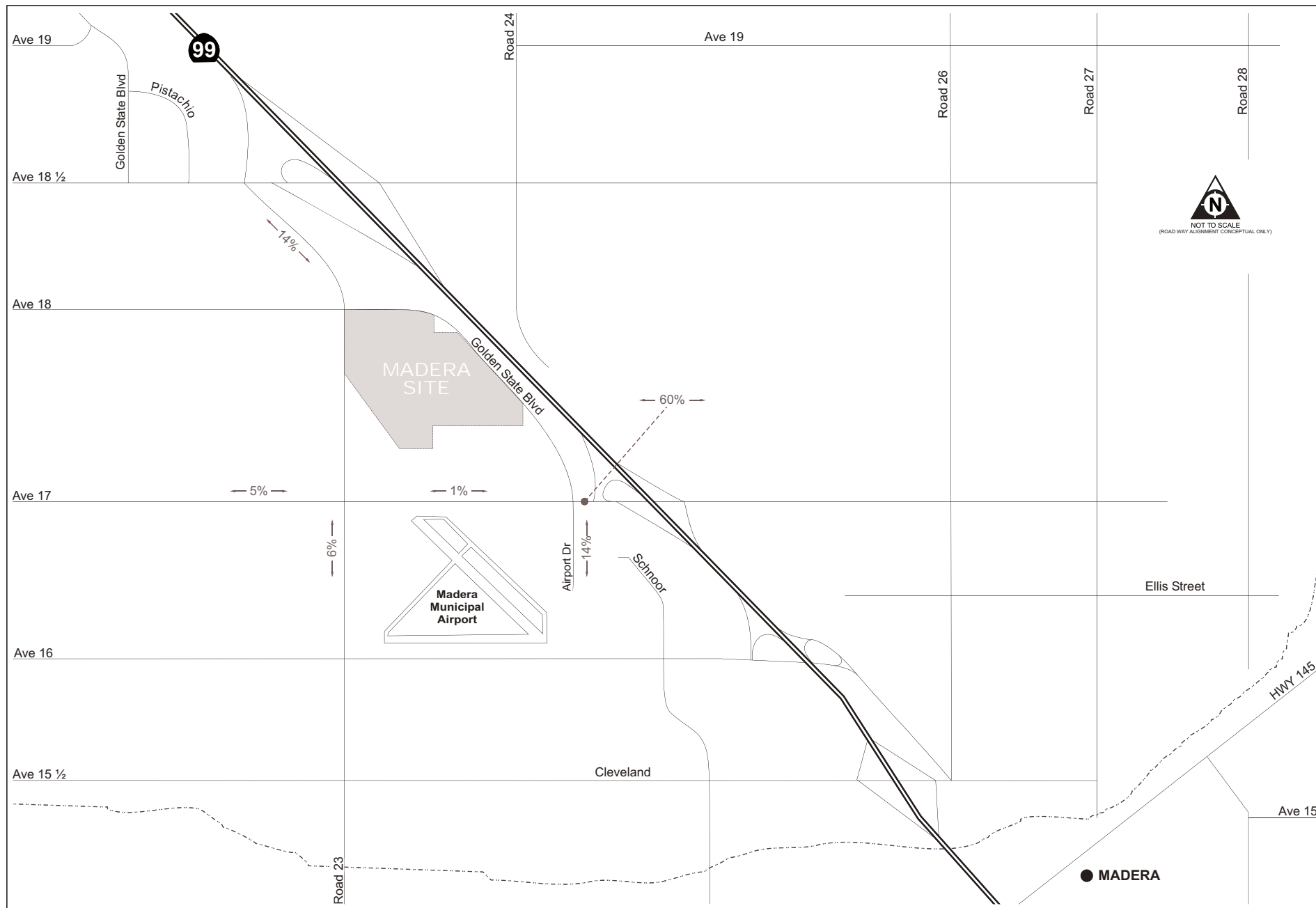


Figure 4.8-12
Madera Site – Trip Distribution Percentages With Alternative B

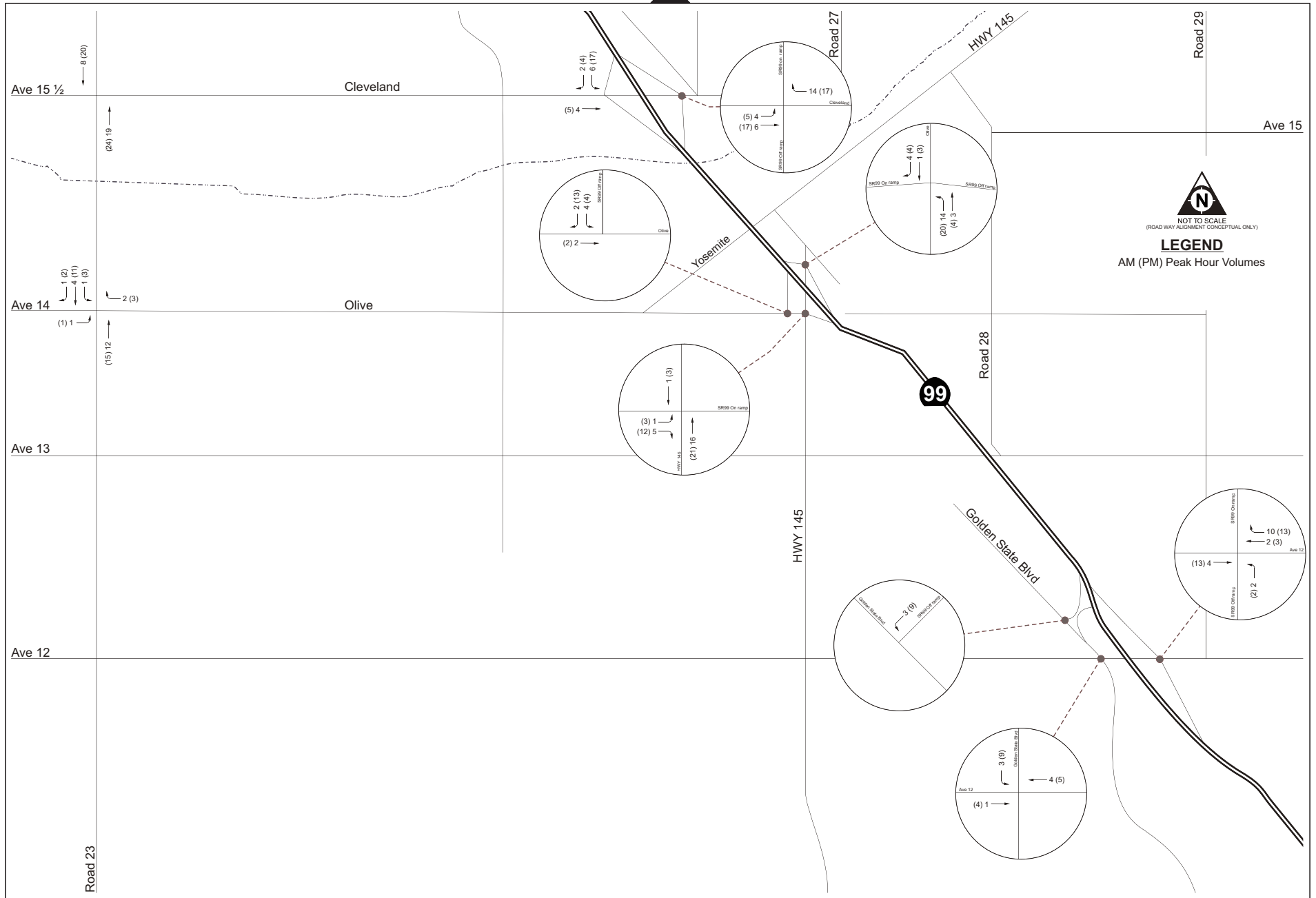


Figure 4.8-14
Madera Site – Intersection Trip Assignment With Alternative B

Freeway and Roadway Segment Performance

Table 4.8-11 summarizes the results of this weekday freeway and roadway segment analysis for the 2010 With Project (Alternative B) level of service conditions. As shown in **Table 4.8-11** below, the following five freeway segments and one roadway segment are shown to operate at an unacceptable LOS:

- SR-99 SB – North of Avenue 18½
- SR-99 NB – Avenue 18½ to Avenue 17
- SR-99 SB – Avenue 18½ to Avenue 17
- SR-99 NB – South of Avenue 17
- SR-99 SB – South of Avenue 17
- Avenue 17 – SR-99 to Road 27

TABLE 4.8-11
FREEWAY AND ROADWAY SEGMENT PERFORMANCE –
2010 WITH ALTERNATIVE B

Segment	2010 WITH ALTERNATIVE B									
	LOS Threshold	2010 w/o Project				With Alternative B				
		LOS		Density (pc/mi/ln) ¹		LOS		Density (pc/mi/ln)		
		AM	PM	AM	PM	AM	PM	AM	PM	
Freeway Segment										
SR-99 NB – North of Avenue 18½	C	C	C	23.9	24.2	C	C	24.2	25.2	
SR-99 SB – North of Avenue 18½	C	C	D	19.6	31.1	C	D	20.0	32.5	
SR-99 NB – Avenue 18½ to Avenue 17	C	C	C	24.9	25.5	C	D	25.3	27.0	
SR-99 SB – Avenue 18½ to Avenue 17	C	C	D	20.4	33.6	C	E	21.0	36.1	
SR-99 NB – South of Avenue 17	C	D	D	28.7	31.0	D	E	31.5	38.6	
SR-99 SB – South of Avenue 17	C	C	E	22.8	44.4	C	F	24.7	---	
Roadway Segment										
Avenue 18½ – Road 24 to Road 23	D	A	A	NA	NA	A	A	NA	NA	
Road 23 – Avenue 18½ to Avenue 17	D	B	B	NA	NA	B	B	NA	NA	
Avenue 17 – Road 23 to SR-99	D	A	A	NA	NA	A	D	NA	NA	
Avenue 17 – SR-99 to Road 27	D	B	E	NA	NA	C	F	NA	NA	
Golden State Boulevard – Avenue 17 to Road 23	D	A	A	NA	NA	A	A	NA	NA	

NOTES: **Bold** text denotes unacceptable LOS.

NA = not applicable.

OF = overflow.

¹ density=passenger car per mile per lane.

--- = beyond software limitations

SOURCE: TPG Consulting, Inc. 2008; AES 2008.

Intersection Performance

The 2010 Without Project traffic volumes were combined with vehicle trips expected to be generated by Alternative B. **Table 4.8-12** summarizes the 2010 With Alternative B Peak Hour

intersection conditions. The 2010 Without Project intersection conditions are provided as a baseline. With the addition of project traffic under Alternative B, the following 10 study intersections are forecast to operate at an unacceptable LOS:

- Avenue 18½ at SR-99 SB ramps/Road 23
- Avenue 18½ at SR-99 NB ramps
- Avenue 17 at SR-99 SB ramps
- Avenue 17 at SR-99 NB ramps
- Avenue 12/Golden State Boulevard at SR-99 SB ramps
- Avenue 12/Golden State Boulevard
- Avenue 17 at Road 23
- Avenue 17 at Golden State Boulevard
- Cleveland Avenue/Avenue 15½ at SR 99 NB ramps
- Olive Avenue/Avenue 14/SR-99 SB on-ramp at SR-145

TABLE 4.8-12
PEAK HOUR INTERSECTION CONDITIONS - 2010 WITH ALTERNATIVE B

Intersection	LOS Thres- hold	2010 w/o Project				Alternative B			
		AM		PM		AM		PM	
		LOS	Delay (secs) ¹	LOS	Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)
Avenue 18½ at SR-99 SB ramps/Road 23									
• WB Left-Through	C	A	0.8	A	1.5	A	0.8	A	1.4
• NB Approach		C	18.5	E	36.5	C	20.8	F	63.1
• SB Approach		C	16.5	D	28.5	C	17.2	E	36.5
Avenue 18½ at SR-99 NB ramps									
• EB Left	C	A	6.4	A	5.6	A	8.4	A	8.1
• NB Approach		C	21.3	C	21.4	C	22.7	D	26.4
Avenue 17 at SR-99 SB ramps									
• SB Approach	C	C	16.6	F	1174.5	E	37.6	F	6974.5
Avenue 17 at SR-99 NB ramps									
• EB Left	C	B	10.0	B	10.2	B	11.0	B	13.9
• NB Approach		F	114.6	F	371.0	F	6001.8	F	4093.9
Avenue 12/Golden State Boulevard at SR-99 SB ramps									
• SB Left-Though	C	A	6.1	A	3.7	A	6.1	A	3.7
• WB Approach		E	43.3	D	30.0	F	50.7	E	44.3
Avenue 12 at Golden State Boulevard	D	D	54.0	D	52.0	D	54.3	E	58.4
Avenue 12 at SR-99 NB ramps	C	B	17.9	C	21.7	B	19.1	C	21.9
Avenue 16/Ellis Overcrossing at Aviation Drive	C	B	18.1	C	21.2	B	18.5	C	25.9

Avenue 18 at Road 23									
• NB Left-Through-Right		A	0.1	A	0.2	A	0.1	A	0.2
• SB Left-Through-Right	D	A	1.4	A	1.4	A	1.7	A	1.7
• WB Approach		A	9.7	B	10.2	A	9.6	B	10.1
• EB Approach		B	10.7	B	11.9	B	10.8	B	12.1
Avenue 17 at Road 23									
• NB Left-Through-Right		A	0.7	A	1.4	A	0.7	A	1.7
• SB Left-Through-Right	D	A	0.7	A	0.6	A	0.7	A	0.6
• WB Approach		B	13.9	C	18.9	C	15.5	E	39.2
• EB Approach		B	12.3	B	14.9	B	13.1	C	19.1
Avenue 17 at Golden State Boulevard									
• EB Left		A	8.2	A	8.7	A	9.2	B	10.7
• WB Left	D	A	8.5	A	8.9	A	9.2	B	10.8
• NB Approach		C	22.2	D	32.4	F	250.4	F	---
• SB Approach		F	113.9	F	---	F	---	F	---
Ellis Street at Road 26	D	A	6.6	A	9.5	A	7.6	B	13.2
Avenue 15½ at Road 23									
• NB Left-Through-Right		A	0.0	A	0.0	A	0.0	A	0.0
• SB Left-Through-Right	D	A	1.0	A	1.8	A	1.1	A	2.0
• WB Approach		B	10.8	B	12.0	B	11.0	B	12.7
• EB Approach		A	0.0	B	11.1	A	0.0	B	11.6
Avenue 14 at Road 23	D	A	8.8	A	9.3	A	9.0	A	9.8
Avenue 16 at Schnoor Avenue/Golden State	D	B	18.1	C	21.2	B	18.5	C	25.9
Avenue 16 at SR-99 SB ramps	C	A	9.3	A	10.0	A	9.2	B	10.1
Avenue 16/Avenue 16 Connector at SR-99 NB ramps									
• EB Left	C	B	10.1	B	11.4	B	10.3	B	11.9
Avenue 16 at SR-99 NB ramp connector									
• EB Left-Through	C	A	5.0	A	5.4	A	5.2	A	5.9
• SB Approach		A	9.1	A	9.9	A	9.2	A	9.9
Gateway/Avenue 16 at SR 99 NB Ramps									
• SB Approach	C	B	10.6	B	11.4	B	10.7	B	11.5
Cleveland Avenue/Avenue 15½ at SR-99 NB ramps	C	B	14.3	C	22.7	B	14.9	D	36.8
Cleveland Avenue/Avenue 15½ at SR-99 SB ramps	C	B	15.2	B	14.2	B	15.4	B	18.6
SR-145/Madera Avenue at SR-99 NB ramps	C	A	5.6	A	6.6	A	5.6	B	10.2
Olive Avenue/Avenue 14 at SR-99 SB off-ramp	C	B	13.1	B	14.1	B	13.9	B	17.0
Olive Avenue/Avenue 14/SR-99 SB on-ramp at SR-145	C	C	21.1	C	33.3	C	22.0	D	38.7

Avenue 18½ at Pistachio Drive

• EB Left-Through	D	A	0.0	A	0.4	A	0.0	A	0.4
• SB Approach		B	14.3	C	17.3	B	15.0	C	20.3

Avenue 18½ at Golden State Boulevard

• EB Approach	D	A	0.3	A	0.1	A	0.3	A	0.1
• SB Approach		B	11.8	B	12.2	B	12.1	B	12.9

NOTES: **Bold** text denotes unacceptable LOS.

¹ Delay in seconds per vehicle.

--- = beyond software limitations

SOURCE: TPG Consulting, Inc. 2008; AES 2008.

Figures 4.8-15 and 4.8-16 present the 2010 With Alternative B intersection volumes at each of the Madera site study intersections.

Impact Analysis

Alternative B's contribution to unacceptable traffic operations represents a significant impact. Mitigation measures for the 2010 with Project (Alternative B) are discussed in **Section 5.2.7** of this document. With the incorporation of project mitigation measures, each of the intersections and roadway segments that are shown to have an unacceptable LOS would be improved to an acceptable LOS. This would result in a less than significant impact.

Construction

Alternative B construction activities would result in traffic-related impacts associated with additional trips generated during employee travel to the site and equipment and materials deliveries. Employee trips are based on the number of employees estimated to be on-site during different points throughout the project. It is assumed that 20-percent of the workers will leave and return to the site for various purposes during the day. It is estimated that the project would facilitate up to 1,163 construction employees daily (direct construction employment). However, it is conservatively assumed that 10-percent of workers would carpool to and from the site, with an additional 10-percent arriving and leaving outside of the area wide commute peak hours. It is assumed that on average there would be 1,396 daily one-way vehicle trips to the site, with 930 potential peak hour trips. Construction worker arrival would peak between 6:30 AM and 7:30 AM, and departure would peak between 4:00 PM and 5:00 PM. The AM peak is prior to the area wide commute peak of 7:30 AM to 8:30 AM. In the evening, there would be a period of overlap in the employee commute peak and the area wide commute peak of 4:30 PM to 5:30 PM. These construction phase trips are significantly less than those anticipated during operation, when Alternative B is projected to generate 9,026 daily trips (782 p.m. peak). Construction

traffic would be reduced when compared to peak hour operation traffic and would represent 15.5 percent of the operational trips for Alternative B.

The delivery and removal of heavy equipment to the site would happen only a few times during the construction duration, as large construction vehicles would stay on-site for extended periods of time. When transport of these vehicles occurs, all trucks would comply with applicable Department of Transportation load limits to reduce potential road degradation. Deliver of construction materials to the site, including building materials such as wood, steel, and masonry is anticipated to add 5 trips a day to the roadways.

Impacts resulting from the construction of Alternative B would be temporary in nature with significantly less trips generated during construction than operation of Alternative B, resulting in no distinct significant impacts. In addition, large construction vehicle trips would be minimal, resulting in a less than significant impact to road surfaces in the vicinity of the site. Although construction traffic impacts would be less than significant, mitigation measures summarized in **Section 5.0** have been included to further reduce impacts.

LAND USE

Consistency with Local Land Use Regulations

Once the Madera site is converted to reservation land, the only applicable land use regulations would be Tribal. Madera County or City of Madera land use regulations would not apply. The Tribe desires to work cooperatively with local and State authorities on matters related to land use. Accordingly, Madera County and the City of Madera park land use regulations and project effects are assessed below.

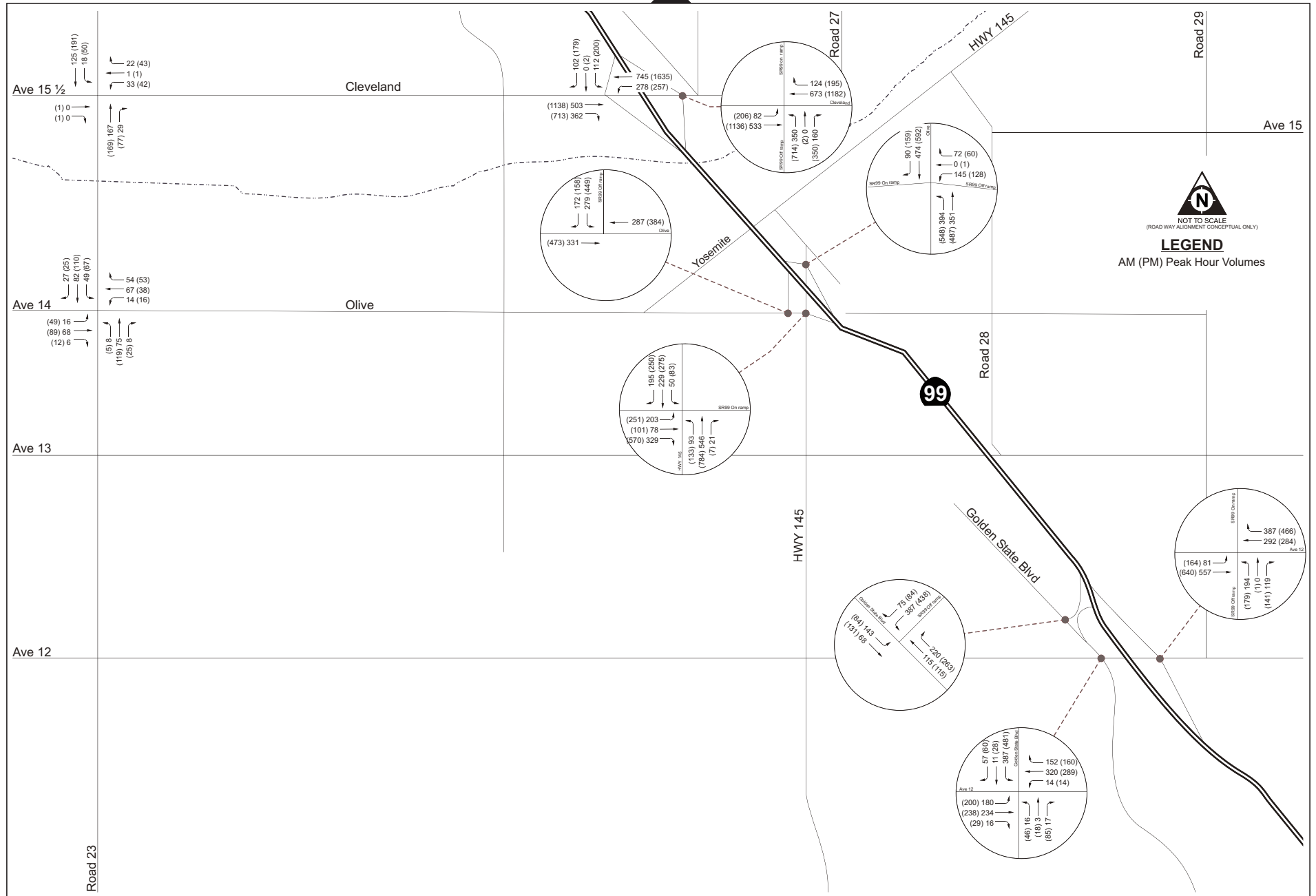


Figure 4.8-16
Madera Site – 2010 Intersection Volumes With Alternative B

Alternative B would involve commercial development on land that is currently outside Madera city limits but within the City's area of influence. Alternative B would be consistent with most goals, objectives, and policies of Madera County and the City of Madera (**Table 3.8-7, Table 4.8-9**).

Note that consistency or inconsistency with local land use regulations does not by itself constitute an environmental impact. Environmental impacts, such as potential conflicts with neighboring land uses, are discussed below.

Airport Compatibility

The Madera site is within the influence of the Madera Municipal Airport. Most of the Alternative B development sections of the Madera site are within Zone D, with a little of the parking lot and an access road lying in Zones B1 and B2. No development would occur in Zone A (**Figure 3.8-12**).

No Alternative B structures would exceed 50 feet in height, well below the 150-foot building restriction that applies to the portions of the Madera site where development would occur (**Figure 3.8-13**). The proposed casino for Alternative B would be within 20,000 feet of the airport runway and approximately 51.5 feet tall (including a lightning rod). The proposed casino for Alternative B is subject to FAA notification because it exceeds the 100:1 horizontal slope requirement. All other proposed structures for Alternative B, including the parking, water and wastewater structures do not exceed the 100:1 horizontal slope requirement for development adjacent to an airport runway. The height of the proposed casino for Alternative B is approximately 20 feet less than Alternative A and in the same location; the FAA determination of no hazard to air navigation for Alternative A would therefore also apply to Alternative B.

The height of a crane to construct the project features would exceed the FAA 100:1 horizontal slope requirement for Alternative B. The crane height would range between 30 to 50 feet above the project features and would represent a significant impact if found to be a hazard to air navigation during construction. Mitigation measures presented in **Section 5.2.7** would reduce impacts to less than significant for potential hazards to air navigation due to the temporary use of a crane.

The proposed wastewater retention and stormwater detention ponds (**Section 2**) may attract birds, especially during spring and fall migrations. However, the Federal Aviation Administration (FAA) has indicated that the wildlife is only considered a hazard if it blocks the direct flight path (Chiang, 2005). The nearest detention basin would be approximately 0.5 miles away from the landing zone and outside of the flight path. Therefore, no significant impact to airport operations from these ponds would occur. In addition, stormwater detention ponds would

be designed to detain stormwater for relatively short periods of time during storm events. These ponds would be dry for the vast majority of the year.

As with Alternative A (**Section 4.8.1**), light emissions and other possible conflicts are present between Alternative B developments and the Madera Municipal Airport. Although these potential conflicts would be slightly lessened due to the less intensive development planned for Alternative B, potential impacts to human safety or normal airport operations would be a potentially significant impact. Mitigation is recommended in **Section 5.2.7** that would reduce these impacts to a less than significant level.

Effects to Project Area

As with Alternative A, development of Alternative B would add light, noise, and traffic to the surrounding environment, but at a marginally reduced level, potentially resulting in disturbances to rural residences in the area. Unlike Alternative A, the terms of the MID MOU would not apply to Alternative B. Commercial development in a predominately agricultural area potentially subjects patrons and employees to nuisance effects from surrounding agricultural operations, such as noise and dust. As with Alternative A, the Alternative B developments would be placed near the middle of the Madera site (see **Section 2.2**), leaving a buffer between the casino and surrounding rural residential and agricultural uses. The buffer would minimize effects of noise and light on nearby residences and the effects of surrounding agricultural operations on the proposed developments. Furthermore, the Madera County right to farm ordinance (Ord. 522 § 2(part), 1989) will continue to protect neighboring farmers from nuisance suits brought by the Tribe or potential patrons on the site. Thus, no significant effects, such as precluding existing or planned land uses or disruption of access or significant conflicts with existing land uses, would occur. Nonetheless, mitigation measures are discussed in **Section 5.2.7** that would reduce land use effects.

AGRICULTURE

Effects to agriculture would be similar to Alternative A given Alternative B's similar development footprint. As with Alternative A, the combined FPPA point total is 143 out of 260 possible points, which is lower than the USDA protection threshold of 160 points (**Appendix Q**).

Given the generally poor quality of agricultural soils where development is proposed, the combined FPPA score of 143, and the retention of a large portion of the site as open space that could be used for agricultural purposes, Alternative B would have a less than significant impact on agriculture. Nonetheless, mitigation measures have been included in **Section 5.2.7** that would further reduce Alternative B's impacts to agriculture.

4.8.4 ALTERNATIVE C – NON-GAMING ALTERNATIVE

TRANSPORTATION/CIRCULATION

This section discusses the 2010 With Project condition where project trips calculated for Alternative C are added to the baseline condition.

Trip Generation

Trip generation rates for Alternative C were derived from the ITE *Trip Generation* manual presented previously in the Trip Generation discussion. These trip rates were applied to the project components to produce the project trip generation amounts, shown in **Table 4.8-13**.

TABLE 4.8-13
PROJECT TRIP GENERATION - ALTERNATIVE C

Size (sf) ¹	Type	Land Use Code	Daily	AM		PM	
				In	Out	In	Out
125,000	Free Standing Discount Superstore	813	6,151	118	113	238	246
100,000	Discount Club	861	4,180	40	16	212	212
12,000	Restaurants ²	934	2,633	135	138	114	88
Total			12,964	293	267	564	546

NOTES: ¹ sf = square feet ² Includes all restaurant uses
SOURCE: ITE, 2003; TPG Consulting, Inc. 2008; AES, 2008.

Trip Distribution and Assignment

Based on the trip distribution pattern presented in **Figure 4.8-17**, the project trips were assigned to the local project area roadways. Trip counts at each of the study intersections are presented in **Figures 4.8-18** and **4.8-19**.

2010 Traffic Conditions

This section discusses the 2010 traffic conditions with Alternative C project trips added. The 2010 Without Project conditions are reported as a baseline.

Freeway and Roadway Segment Performance

Table 4.8-14 summarizes the results of this weekday freeway and roadway segment analysis for the 2010 With Project (Alternative C) level of service conditions. As shown in **Table 4.8-14** below, the following five freeway and one roadway segments are shown to operate at an unacceptable LOS:

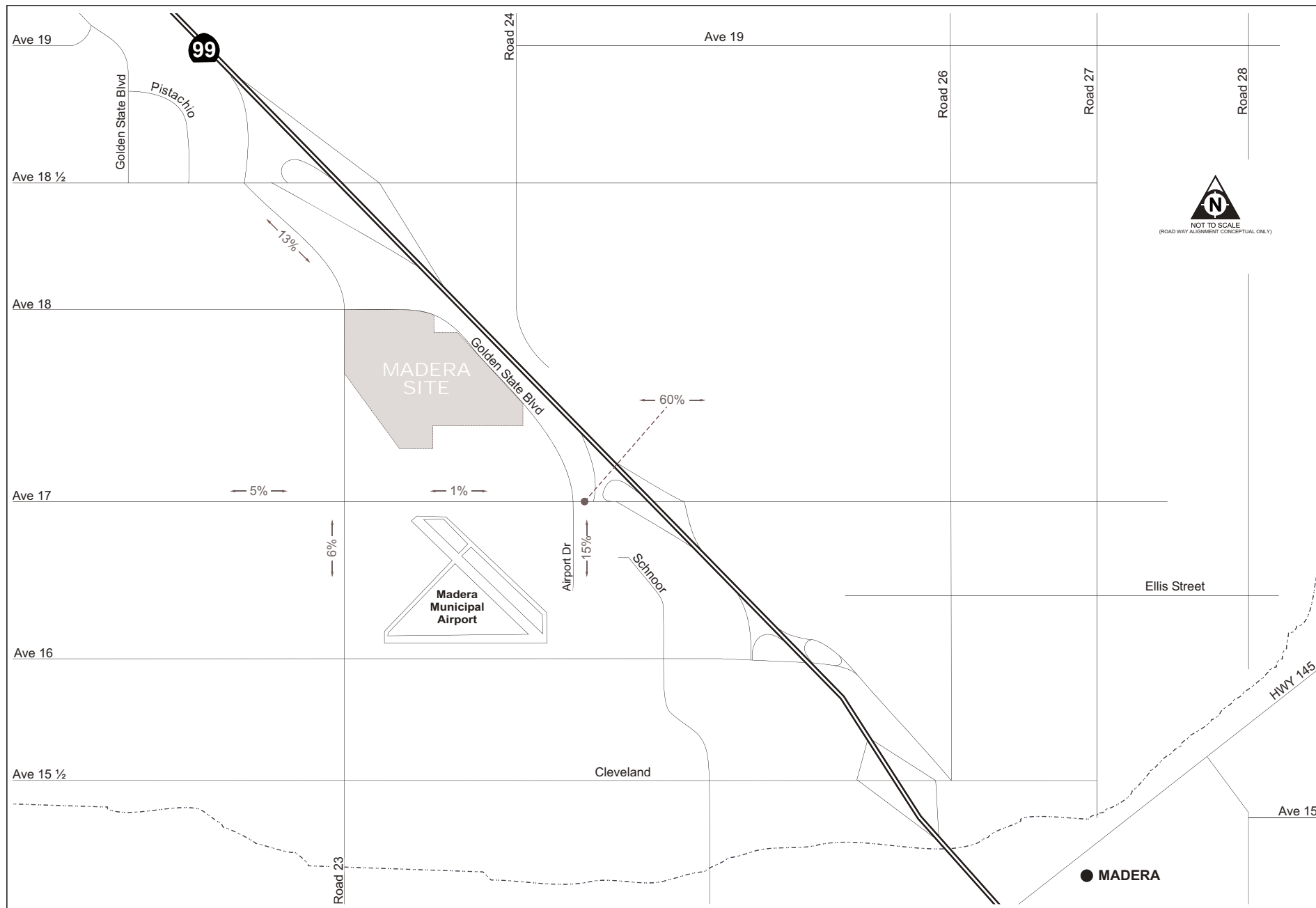
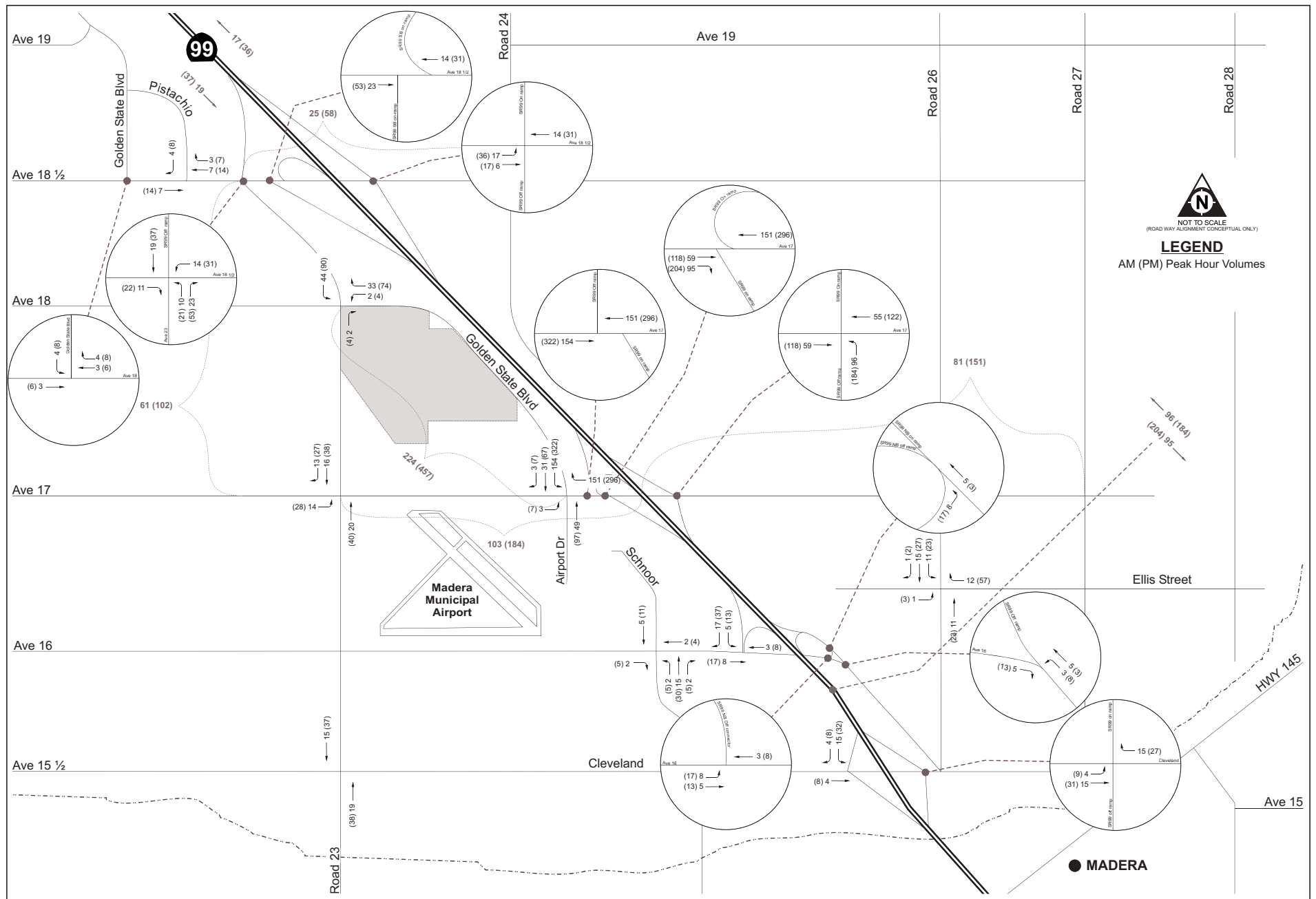


Figure 4.8-17
Madera Site – Trip Distribution Percentages With Alternative C



See Map 4.8-19

Figure 4.8-18
Madera Site – Intersection Trip Assignment With Alternative C

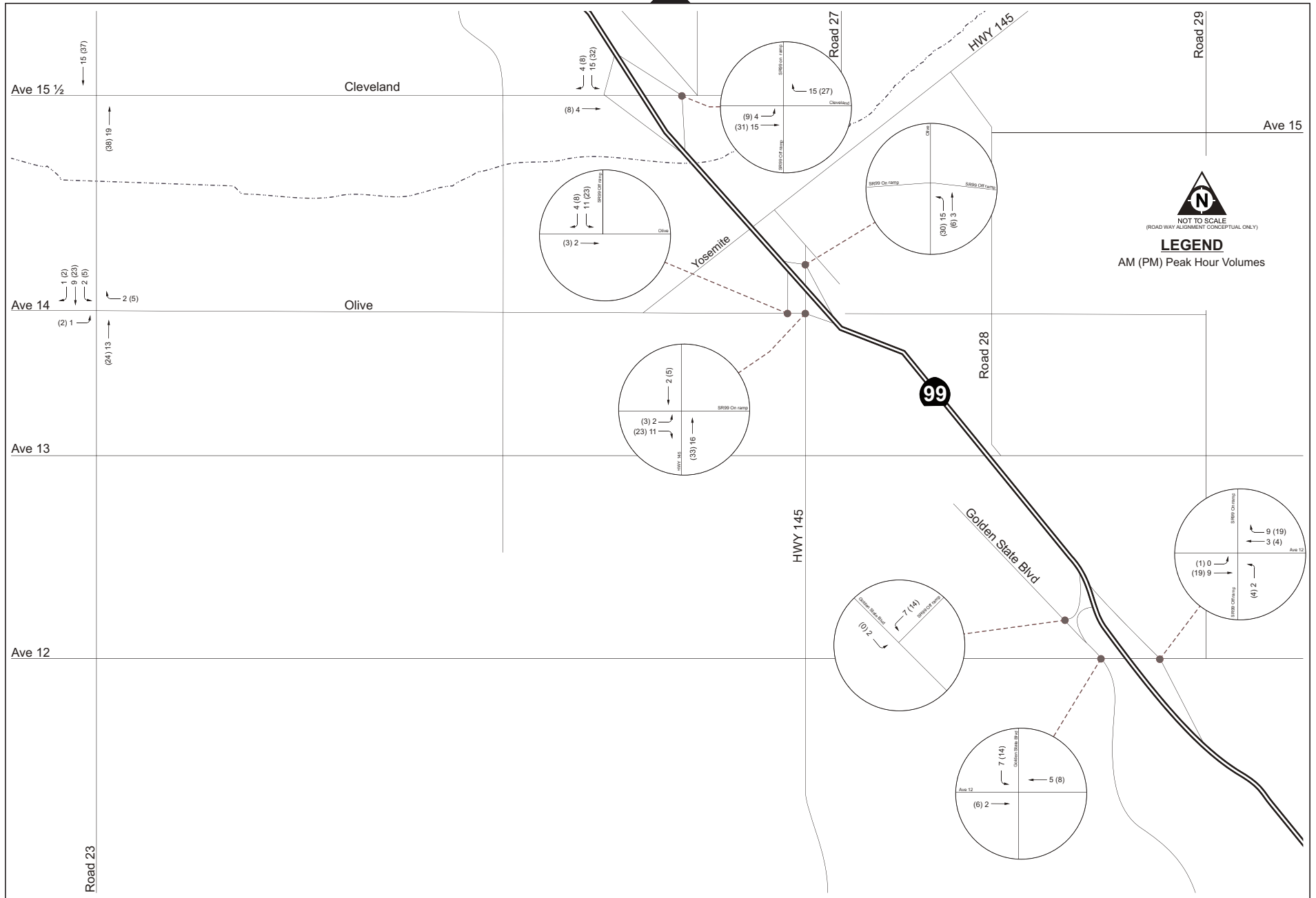


Figure 4.8-19
Madera Site – Intersection Trip Assignment With Alternative C

- SR-99 SB – North of Avenue 18½
- SR-99 NB – Avenue 18½ to Avenue 17
- SR-99 SB – Avenue 18½ to Avenue 17
- SR-99 NB – South of Avenue 17
- SR-99 SB – South of Avenue 17
- Avenue 17 – SR-99 to Road 27

TABLE 4.8-14
FREEWAY AND ROADWAY SEGMENT PERFORMANCE –
2010 WITH ALTERNATIVE C

Segment	LOS Threshold	2010 w/o Project				Alternative C				
		LOS		Density (pc/mi/ln) ¹		LOS		Density (pc/mi/ln)		
		AM	PM	AM	PM	AM	PM	AM	PM	
Freeway Segment										
SR-99 NB – North of Avenue 18½	C	C	C	23.9	24.2	C	C	24.2	25.1	
SR-99 SB – North of Avenue 18½	C	C	D	19.6	31.1	C	D	19.9	32.5	
SR-99 NB – Avenue 18½ to Avenue 17	C	C	C	24.9	25.5	C	D	25.3	27.0	
SR-99 SB – Avenue 18½ to Avenue 17	C	C	D	20.4	33.6	C	E	21.0	36.1	
SR-99 NB – South of Avenue 17	C	D	D	28.7	31.0	D	E	31.6	38.8	
SR-99 SB – South of Avenue 17	C	C	E	22.8	44.4	C	F	24.8	---	
Roadway Segment										
Avenue 18½ – Road 24 to Road 23	D	A	A	NA	NA	A	A	NA	NA	
Road 23 – Avenue 18½ to Avenue 17	D	B	B	NA	NA	B	B	NA	NA	
Avenue 17 – Road 23 to SR-99	D	A	A	NA	NA	A	D	NA	NA	
Avenue 17 – SR-99 to Road 27	D	B	E	NA	NA	C	F	NA	NA	
Golden State Boulevard – Avenue 17 to Road 23	D	A	A	NA	NA	A	A	NA	NA	

NOTES: **Bold** text denotes unacceptable LOS.

NA = not applicable

OF = overflow

¹ density = passenger car per mile per lane

--- = beyond software limitations

SOURCE: TPG Consulting, Inc. 2008; AES 2008.

Intersection Performance

As shown in **Table 4.8-15**, with the addition of project traffic under Alternative C, the following 10 study intersections are forecast to operate at an unacceptable LOS:

- Avenue 18½ at SR-99 SB ramps/Road 23
- Avenue 18½ at SR-99 NB ramps
- Avenue 17 at SR-99 SB ramps
- Avenue 17 at SR-99 NB ramps
- Avenue 12/Golden State Boulevard at SR-99 SB ramps
- Avenue 12/Golden State Boulevard
- Avenue 17 at Road 23

- Avenue 17 at Golden State Boulevard
- Cleveland Avenue/Avenue 15½ at SR 99 NB ramps
- Olive Avenue/Avenue 14/SR-99 SB on-ramp at SR-145

TABLE 4.8-15
INTERSECTION OPERATIONS - 2010 WITH ALTERNATIVE C

Intersection	LOS Thres- hold	2010 w/o Project				Alternative C			
		LOS	AM Delay (secs) ¹	LOS	PM Delay (secs)	LOS	AM Delay (secs)	LOS	PM Delay (secs)
Avenue 18½ at SR-99 SB ramps/Road 23									
• WB Left-Through	C	A	0.8	A	1.5	A	0.8	A	1.4
• NB Approach		C	18.5	E	36.5	C	20.8	F	60.2
• SB Approach		C	16.5	D	28.5	C	17.2	E	36.3
Avenue 18½ at SR-99 NB ramps									
• EB Left	C	A	6.4	A	5.6	A	8.4	A	8.1
• NB Approach		C	21.3	C	21.4	C	22.7	D	26.4
Avenue 17 at SR-99 SB ramps									
• SB Approach	C	C	16.6	F	1174.5	E	38.2	F	6994.7
Avenue 17 at SR-99 NB ramps									
• EB Left	C	B	10.0	B	10.2	B	11.0	B	13.9
• NB Approach		F	1114.6	F	371.0	F	6029.1	F	4161.6
Avenue 12/Golden State Boulevard at SR-99 SB ramps									
• SB Left-Though	C	A	6.1	A	3.7	A	6.1	A	3.7
• NB Approach		E	43.3	D	30.0	F	50.7	E	47.9
Avenue 12 at Golden State Boulevard	D	D	54.0	D	52.0	D	54.3	E	60.0
Avenue 12 at SR-99 NB ramps	C	B	17.9	C	21.7	B	19.1	C	21.9
Avenue 18 at Road 23									
• NB Left-Through-Right	D	A	0.1	A	0.2	A	0.1	A	0.2
• SB Left-Through-Right		A	1.4	A	1.4	A	1.7	A	1.6
• WB Approach		A	9.7	B	10.2	A	9.6	B	10.1
• EB Approach		B	10.7	B	11.9	B	10.8	B	12.0
Avenue 17 at Road 23									
• NB Left-Through-Right	D	A	0.7	A	1.4	A	0.7	A	1.9
• SB Left-Through-Right		A	0.7	A	0.6	A	0.7	A	0.6
• WB Approach		B	13.9	C	18.9	C	15.4	E	34.8
• EB Approach		B	12.3	B	14.9	B	13.1	C	19.6
Avenue 17 at Golden State Boulevard									
• EB Left	D	A	8.2	A	8.7	A	9.2	B	10.8

4.0 Environmental Consequences

• WB Left		A	8.5	B	8.9	A	9.2	B	10.8
• NB Approach		C	22.2	D	32.4	F	247.8	F	---
• SB Approach		F	113.9	F	---	F	---	F	----
Ellis Street at Road 26	D	A	6.6	A	9.5	A	7.6	B	13.2
Avenue 15½ at Road 23									
• NB Left-Through-Right		A	0.0	A	0.0	A	0.0	A	0.0
• SB Left-Through-Right	D	A	1.0	A	1.8	A	1.1	A	1.8
• WB Approach		B	10.8	B	12.0	B	11.0	B	12.5
• EB Approach		B	0.0	B	11.1	A	0.0	B	11.5
Avenue 14 at Road 23	D	A	8.8	A	9.3	A	9.0	A	9.7
Avenue 16 at Schnoor Avenue/Golden State	D	B	18.1	C	21.2	B	18.5	C	26.0
Avenue 16 at SR-99 SB ramps	C	A	9.3	A	10.0	A	9.2	B	10.2
Avenue 16/Avenue 16 Connector at SR-99 NB ramps									
• EB Left	C	B	10.1	B	11.4	B	10.3	B	11.9
Avenue 16 at SR-99 NB ramps Connector									
• SB Left-Through	C	A	5.0	A	5.4	A	5.2	A	5.8
• WB Right		A	9.1	A	9.9	A	9.2	A	9.9
Gateway/Avenue 16 at SR 99 NB Ramps									
• WB Left	C	B	10.6	B	11.4	B	10.7	B	11.6
Cleveland Avenue/Avenue 15½ at SR-99 NB ramps	C	B	14.3	C	22.7	B	14.9	D	38.2
Cleveland Avenue/Avenue 15½ at SR-99 SB ramps	C	B	15.2	B	14.2	B	15.4	B	18.9
SR-145/Madera Avenue at SR-99 NB ramps	C	A	5.6	A	6.6	A	5.6	B	10.1
Olive Avenue/Avenue 14 at SR-99 SB off-ramp	C	B	13.4	B	14.7	B	13.9	B	16.5
Olive Avenue/Avenue 14/SR-99 SB on-ramp at SR-145	C	C	21.1	C	33.3	C	22.0	D	39.1
Avenue 18½ at Pistachio Drive									
▪ EB Approach	C	A	0.0	A	0.4	A	0.0	A	0.4
▪ SB Approach		B	14.3	C	17.3	B	15.0	C	20.2
Avenue 18½ at Golden State Boulevard									
• EB Approach	D	A	0.3	A	0.1	A	0.3	A	0.1
• SB Approach		B	11.8	B	12.2	B	12.1	B	12.9

NOTES: **Bold** text denotes unacceptable LOS.

¹ Delay in seconds per vehicle.

--- = beyond software limitations

SOURCE: TPG Consulting, Inc. 2008; AES 2008.

Figures 4.8-20 and 4.8-21 present the 2010 With Alternative C intersection volumes at each of the Madera site study intersections.

Impact Analysis

Alternative C's contribution to unacceptable traffic operations represents a significant impact. Mitigation measures for the 2010 With Project (Alternative C) are discussed in **Section 5.2.7** of this document. With the incorporation of project mitigation measures, each of the intersections and roadway segments that are shown to have an unacceptable LOS would be improved to an acceptable LOS. This would result in a less than significant impact.

Construction

Alternative C construction activities would result in traffic-related impacts associated with additional trips generated during employee travel to the site and equipment and materials deliveries. Employee trips are based on the number of employees estimated to be on-site during different points throughout the project. It is assumed that 20-percent of the workers will leave and return to the site for various purposes during the day. It is estimated that the project would facilitate up to 175 construction employees daily (direct construction employment). However, it is conservatively assumed that 10-percent of workers would carpool to and from the site, with an additional 10-percent arriving and leaving outside of the area wide commute peak hours. It is assumed that on average there would be 210 daily one-way vehicle trips to the site, with 140 potential peak hour trips. Construction worker arrival would peak between 6:30 AM and 7:30 AM, and departure would peak between 4:00 PM and 5:00 PM. The AM peak is prior to the area wide commute peak of 7:30 AM to 8:30 AM. In the evening, there would be a period of overlap in the employee commute peak and the area wide commute peak of 4:30 PM to 5:30 PM. The construction phase trips are significantly less than those anticipated during operation, when Alternative C is projected to generate 12,964 daily trips (1,110 p.m. peak). Construction traffic would be reduced when compared to peak hour operation traffic and would represent only 1.6 percent of the operational trips for Alternative C.

The delivery and removal of heavy equipment to the site would happen only a few times during the project duration, and large construction vehicles would stay on-site for an extended periods of time. When transport of these vehicles occurs, all trucks would comply with applicable Department of Transportation load limits to reduce potential road degradation. Deliver of construction materials to the site, including building materials such as wood, steel, and masonry is anticipated to add 5 trips a day to the roadways.

Impacts resulting from the construction of Alternative C would be temporary in nature with significantly less trips generated during construction than operation of Alternative C, resulting in

no distinct significant impacts. In addition, large construction vehicle trips would be minimal, resulting in a less than significant impact to road surfaces in the vicinity of the site. Although, construction traffic impacts would be less than significant, mitigation measures summarized in **Section 5.0** have been included to further reduce impacts.

LAND USE

Consistency with Local Land Use Regulations

Once the Madera site is converted to reservation land, the only applicable land use regulations would be Tribal. Madera County or City of Madera land use regulations would not apply. The Tribe desires to work cooperatively with local and State authorities on matters related to land use. Accordingly, Madera County and the City of Madera land use regulations and project effects are assessed below.

Alternative C would involve commercial development on land that is currently outside Madera city limits but within the City's area of influence. Alternative C would be consistent with most goals, objectives, and policies of Madera County and the City of Madera (**Table 3.8-7, Table 4.8-9**).

Note that consistency or inconsistency with local land use regulations does not by itself constitute an environmental impact. Environmental impacts, such as potential conflicts with neighboring land uses, are discussed below.

Airport Compatibility

The Madera site is within the influence of the Madera Municipal Airport. Most of the Alternative C development sections of the Madera site are within Zone D, with a little of the

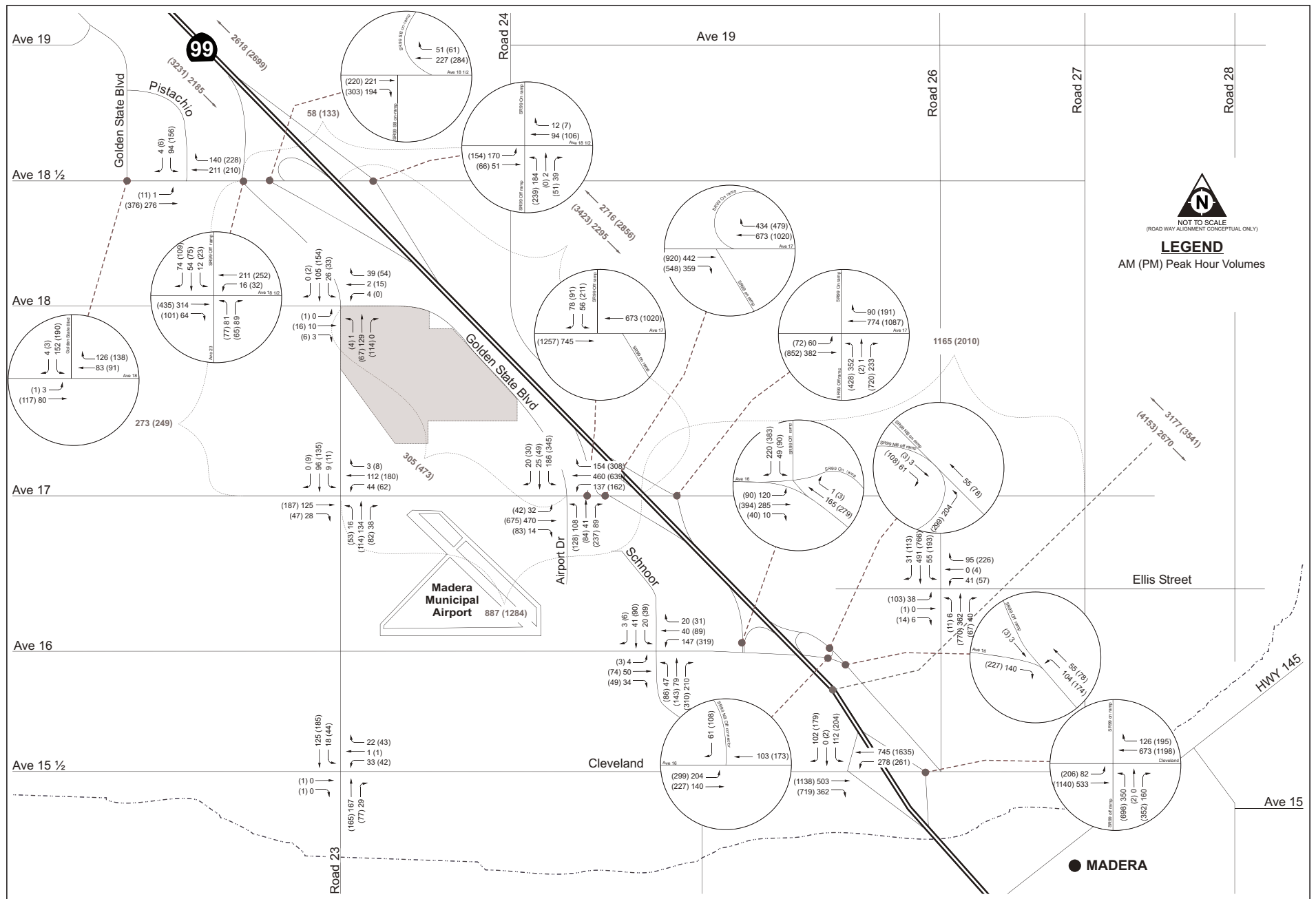


Figure 4.8-20
Madera Site – 2010 Intersection Volumes With Alternative C

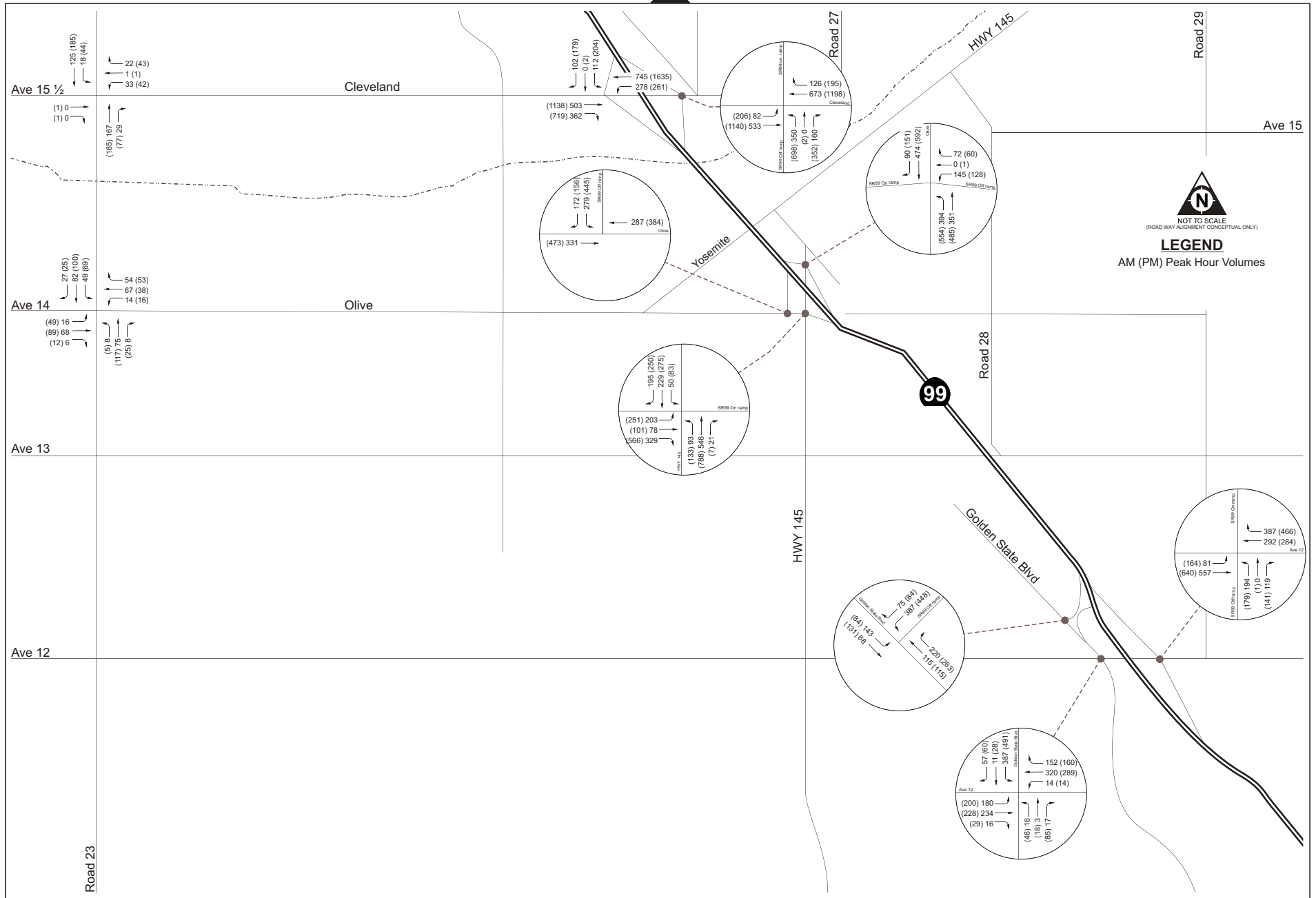


Figure 4.8-21
Madera Site – 2010 Intersection Volumes With Alternative C

parking lot and an access road lying in Zones B1 and B2. No development would occur in Zone A (**Figure 3.8-12**).

No Alternative C structures would exceed 50 feet in height, well below the 150 foot building restriction that applies to the portions of the Madera site where development would occur (**Figure 3.8-13**). Alternative C is not subject to FAA notification because the height of the proposed project's structures and distances to the Madera Municipal Airport runway do not exceed the 100:1 horizontal slope requirement.

The height of a crane to construct the project features may exceed the FAA 100:1 horizontal slope requirement for Alternative C. The crane height would range between 30 to 50 feet above the project features and would represent a significant impact if found to be a hazard to air navigation during construction. Mitigation measures presented in **Section 5.2.7** would reduce impacts to less than significant for potential hazards to air navigation due to the temporary use of a crane.

The proposed wastewater retention and stormwater detention ponds (**Section 2**) may attract birds, especially during spring and fall migrations. However, the Federal Aviation Administration (FAA) has indicated that the wildlife is only considered a hazard if it blocks the direct flight path (Chiang, 2005). The nearest detention basin would be approximately 0.5 miles away from the landing zone and outside of the flight path. Therefore, no significant impact to airport operations from these ponds would occur. In addition, stormwater detention ponds would be designed to detain stormwater for relatively short periods of time during storm events. These ponds would be dry for the vast majority of the year.

As with Alternative A (**Section 4.8.1**), light emissions and other possible conflicts are present between Alternative C developments and the Madera Municipal Airport. Although these potential conflicts would be slightly lessened due to the less intensive development planned for Alternative C, potential impacts to human safety or normal airport operations would be a potentially significant impact. Mitigation is recommended in **Section 5.2.7** that would reduce these impacts to a less than significant level.

Effects to Project Area

As with Alternative A, development of Alternative C would add light, noise, and traffic to the surrounding environment, but at a marginally reduced level, potentially resulting in disturbances to rural residences in the area. Unlike Alternative A, the terms of the MID MOU would not apply to Alternative C. Commercial development in a predominately agricultural area potentially subjects patrons and employees to nuisance effects from surrounding agricultural operations, such as noise and dust. As with Alternative A, the Alternative C developments would be placed near the middle of the Madera site (see **Section 2.2**), leaving a buffer between

the retail developments and surrounding rural residential and agricultural uses. The buffer would minimize effects of noise and light on nearby residences and the effects of surrounding agricultural operations on the proposed developments. Furthermore, the Madera County right to farm ordinance (Ord. 522 § 2(part), 1989) will continue to protect neighboring farmers from nuisance suits brought by the Tribe or potential patrons on the site. Thus, no significant effects, such as precluding existing or planned land uses or disruption of access or significant conflicts with existing land uses, would occur. Nonetheless, mitigation measures are discussed in **Section 5.2.7** that would reduce land use effects.

AGRICULTURE

Effects to agriculture would be similar to Alternative A given Alternative C's similar development footprint. As with Alternative A, the combined FPPA point total is 143 out of 260 possible points, which is lower than the USDA protection threshold of 160 points (**Appendix Q**).

Given the generally poor quality of agricultural soils where development is proposed, the combined FPPA score of 143, and the retention of a large portion of the site as open space that could be used for agricultural purposes, Alternative C would have a less than significant impact on agriculture. Nonetheless, mitigation measures have been included in **Section 5.2.7** that would further reduce Alternative C's impacts to agriculture.

4.8.5 ALTERNATIVE D – NORTH FORK LOCATION

TRANSPORTATION/CIRCULATION

This section discusses the 2010 With Project condition where project trips calculated for Alternative D are added to the baseline condition.

Project Trip Generation

Project trip generation was calculated for Alternative D, based on the earlier discussed trip generation methodology and is presented in **Table 4.8-16**.

TABLE 4.8-16
PROJECT TRIP GENERATION – ALTERNATIVE D

Land Uses	Size	Daily	AM			PM		
			In	Out	Total	In	Out	Total
Casino	26,001 sf ¹	1,154	46	20	66	57	51	107
Total	26,001 sf	1,154	46	20	66	57	51	107

NOTES: ¹ sf = square foot.

All figures are approximate.

SOURCE: TPG Consulting, Inc. 2008; AES, 2008.

Project Trip Distribution and Assignment

Based on the trip distribution pattern presented in **Figure 4.8-22**, the project trips were assigned to the local project area roadways. Trip counts at each of the study intersections are presented in **Figure 4.8-23**.

2010 Traffic Conditions

This section discusses the 2010 traffic conditions with Alternative D project trips added. The 2010 Without Project conditions are reported as a baseline.

Peak Hour Intersection Operations

The 2010 Without Project traffic volumes were combined with vehicle trips that are expected to be generated by Alternative D. **Table 4.8-17** summarizes the 2010 with Alternative D Peak Hour intersection conditions. The 2010 Without Project intersection conditions are provided as a baseline.

TABLE 4.8-17
INTERSECTION OPERATIONS -
2010 WITH ALTERNATIVE D

Intersection	LOS Threshold	2010 w/o Project				With Alternative D			
		AM		PM		AM		PM	
		LOS	Delay (Secs) ¹	LOS	Delay (Secs)	LOS	Delay (Secs)	LOS	Delay (Secs)
SR-145 at SR-41	C	B	15.4	C	22.8	B	15.4	C	22.9
SR-41 at Road 200									
• SB Left		A	8.2	B	5.7	A	8.2	A	5.8
	C								
SR-41 at road 420 (Thornberry Road)									
• SB Left		A	8.8	A	9.0	A	8.8	A	9.0
• WB Approach	C	B	13.3	B	14.9	B	13.3	B	14.9
SR-41 at SR-49	C	B	10.0	B	12.1	B	10.1	B	12.1
Malum Ridge Road at Road 225 (Mammoth Pool Road)	D	A	7.1	A	7.4	A	7.3	A	7.7
Road 225 (Mammoth Pool Road) at Cascadel Road									
• SB Left	C	A	7.4	A	7.3	A	7.5	A	7.4
• WB Approach		A	8.7	A	8.7	A	8.7	A	8.8
Cascadel Road at Mission Drive									
• WB Left -Through	C	--	--	A	1.1	A	5.3	A	6.7
• NB Approach		A	8.7	A	8.6	A	8.8	A	8.9
North Fork Road at Auberry Road									
• NB Left -Through-Right		A	0.2	A	0.2	A	0.1	A	0.1
• SB Left -Through-Right	C	A	7.4	A	7.5	A	7.5	A	7.5
• WB Approach		A	9.2	B	10.6	A	9.4	A	9.4
• EB Approach		A	9.9	A	9.8	A	9.7	A	9.7
North Fork Road at Crane Valley Road									
• EB Left -Through	C	A	1.3	A	2.7	A	1.3	A	2.6
• SB Approach		A	9.3	B	10.0	A	9.4	A	10.1

NOTES: **Bold** text denotes unacceptable LOS.

¹ Delay in seconds per vehicle.

SOURCE: TPG Consulting 2008; AES 2008.

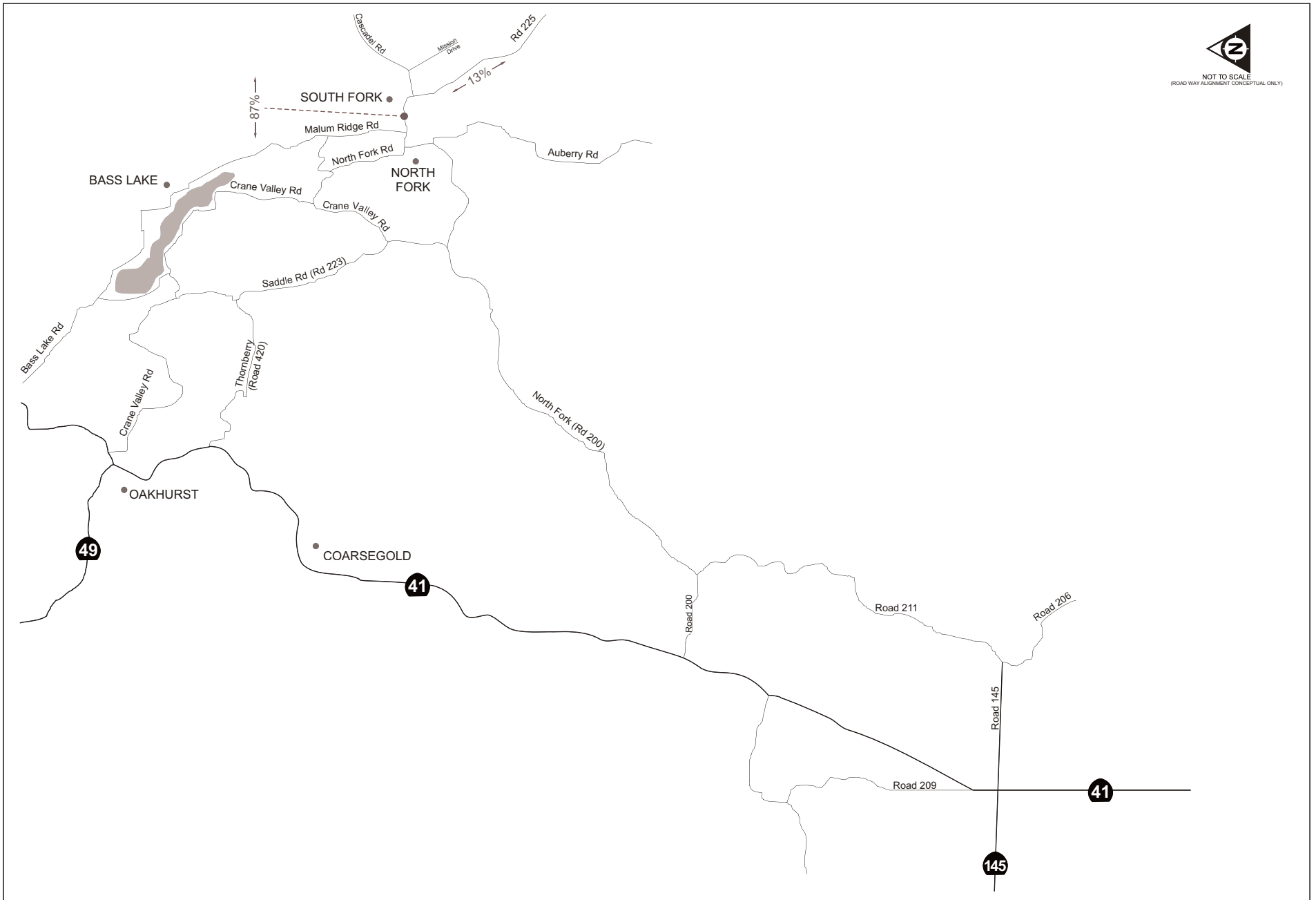


Figure 4.8-22
North Fork Site – Trip Distribution Percentages With Alternative D

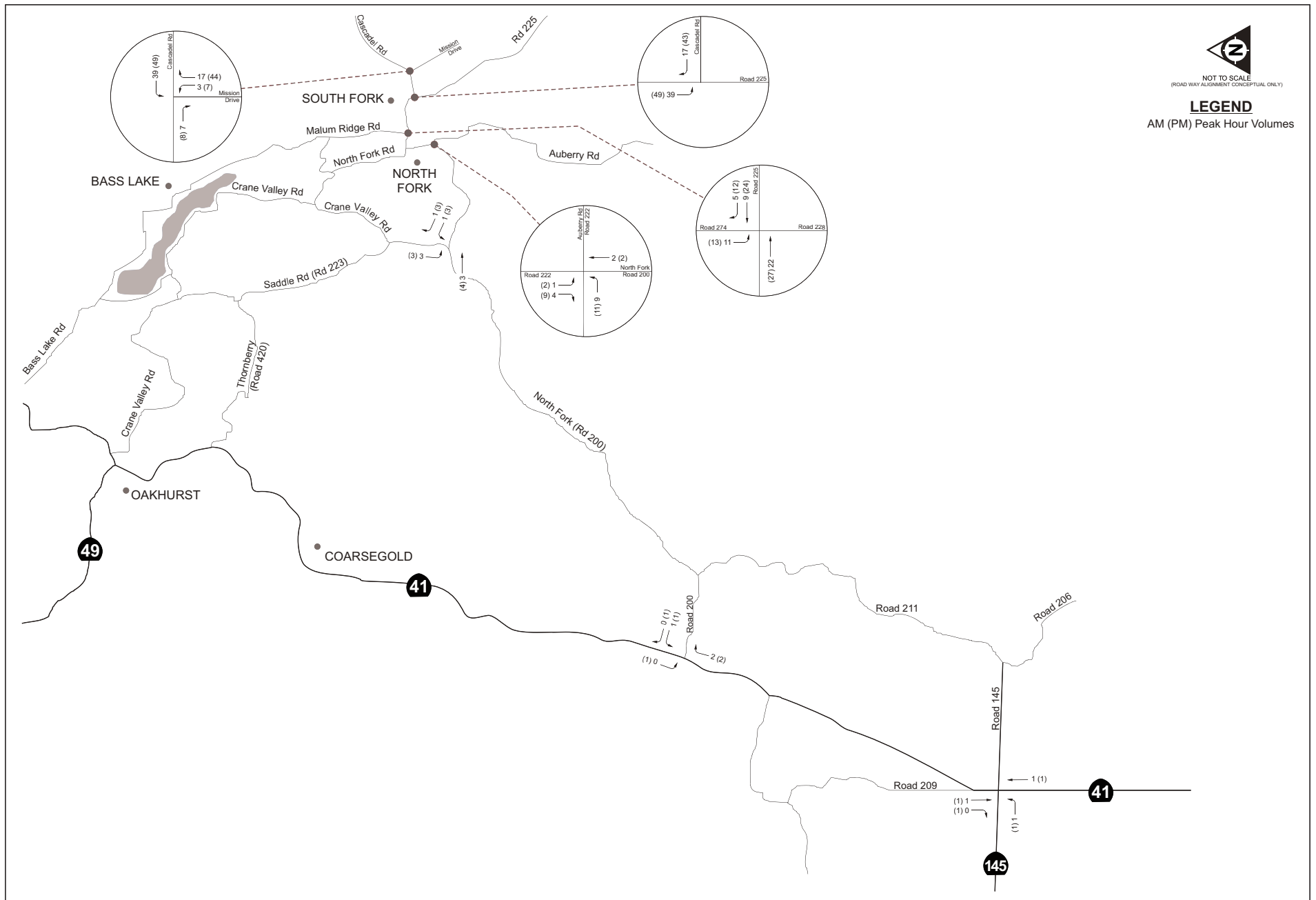


Figure 4.8-23
North Fork Site – Intersection Trip Assignment With Alternative D

Figure 4.8-24 presents the 2010 With Alternative D intersection volumes at each of the North Fork site study intersections.

Impact Analysis

Alternative D's contribution to unacceptable traffic operations represents a significant impact. Mitigation measures for the 2010 with Project (Alternative D) are discussed in **Section 5.2.7** of this document. With the incorporation of project mitigation measures, the intersection shown to have an unacceptable LOS would be improved to an acceptable LOS. This would result in a less than significant impact.

Construction

Alternative D construction activities would result in traffic-related impacts associated with additional trips generated during employee travel to the site and equipment and materials deliveries, and construction material importation/exportation. Employee trips are based on the number of employees estimated to be on-site during different points throughout the project. It is assumed that 20-percent of the workers will leave and return to the site for various purposes during the day. It is estimated that the project would facilitate up to 151 construction employees daily (direct construction employment). However, it is conservatively assumed that 10-percent of workers would carpool to and from the site, with an additional 10-percent arriving and leaving outside of the area wide commute peak hours. It is assumed that on average there would be 181 daily one-way vehicle trips to the site, with 130 potential peak hour trips. Construction worker arrival would peak between 6:30 AM and 7:30 AM, and departure would peak between 4:00 PM and 5:00 PM. The AM peak is prior to the area wide commute peak of 7:30 AM to 8:30 AM. In the evening, there would be a period of overlap in the employee commute peak and the area wide commute peak of 4:30 PM to 5:30 PM. The construction phase trips are significantly less than those anticipated during operation, when Alternative D is projected to generate 1,545 daily trips (108 p.m. peak). Construction traffic would be reduced when compared to peak hour operation traffic and would represent 11.7 percent of the operational trips for Alternative D.

The delivery and removal of heavy equipment to the site would happen only a few times during the project duration, and large construction vehicles would stay on-site for extended periods of time. When transport of these vehicles occurs, all trucks shall comply with applicable Department of Transportation load limits to reduce potential road degradation. Deliver of construction materials to the site, including building materials such as wood, steel, and masonry is anticipated to add 2 trips a day to the roadways.

Impacts resulting from the construction of Alternative D would be temporary in nature with significantly less trips generated during construction than operation of Alternative D, resulting in a less than significant impact. In addition, large construction vehicle trips would be minimal,

resulting in a less than significant impact to road surfaces in the vicinity of the site. Although, construction traffic impacts be would less than significant, mitigation measures summarized in **Section 5.0** have been included to further reduce impacts.

LAND USE

Consistency with Local Land Use Regulations

The North Fork site is currently held in trust by the BIA. Madera County land use regulations do not apply to the North Fork site. This would not change with the implementation of Alternative D. The Tribal Government desires to work cooperatively with local and State authorities on matters related to land use. Accordingly, Madera County land use regulations and project effects are assessed below.

Alternative D would result in commercial development on land that is currently held in trust by the Federal Government. Alternative D would be consistent with most goals, objectives, and policies of Madera County (**Section 3.8.3**). **Table 4.8-9** lists policies of the Madera County General Plan and indicates consistency with the project alternatives.

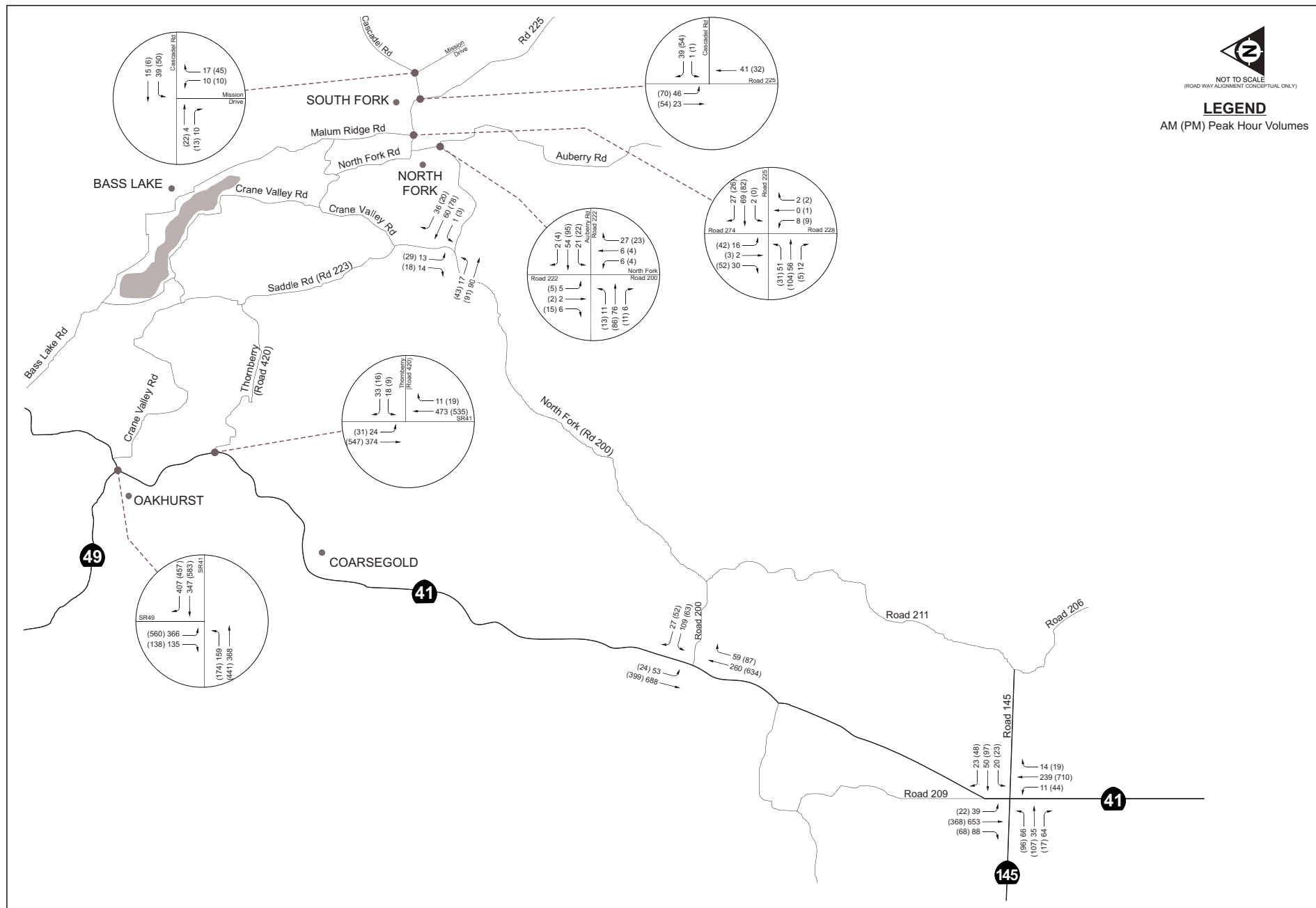
Note that consistency or inconsistency with local land use regulations does not by itself constitute an environmental impact. Environmental impacts, such as potential conflicts with neighboring land uses, are discussed below.

Airport Compatibility

Alternative D is outside the influence of the Madera Municipal Airport or any other airport. Therefore, all impacts to airport function would be less than significant.

Effects to Project Area

Land uses surrounding the North Fork site include rural residences. No significant effects, such as precluding existing or planned land uses or disruption of access or conflicts with existing land uses, would occur. However, development of Alternative D would add light, noise, and traffic to the surrounding environment, potentially resulting in disturbances to rural residences in the area. Placing the casino near the middle of the North Fork site (**Section 2.5**) would create a buffer between the casino and surrounding rural residential properties. The buffer would minimize effects of noise and light on nearby residences. Thus, no significant effects, such as precluding existing or planned land uses or disruption of access or significant conflicts with existing land



SOURCE: TPG Consulting, Inc., 2008; AES, 2008

North Fork Casino EIS / 204502 ■

Figure 4.8-24
North Fork Site – 2010 Intersection Volumes With Alternative D

uses, would occur. Nonetheless, mitigation measures for light and traffic are discussed in **Section 5.2.7**.

AGRICULTURE

Soils within the North Fork site have not been mapped by the NRCS, and thus have not been designated according to their farming potential. Based on the location and topography of the North Fork site and the lack of agricultural activity on the site and surrounding properties, it is concluded that the North Fork site does not contain Federal, state, or locally important farmland. Due to the inferior quality of land available for farming purposes, impacts to agriculture from the development of Alternative D would be less than significant.

4.8.6 ALTERNATIVE E – NO ACTION ALTERNATIVE

TRANSPORTATION/CIRCULATION

The traffic conditions under the No Action Alternative are described as the baseline conditions for each target year (see 2008 No Project description for each Alternative). No new traffic would be added to the local roadways or State Route 99; therefore, no new traffic impacts would occur under this alternative.

LAND USE

Under this alternative, all current land uses would be retained. No impact would occur under the No Action Alternative

AGRICULTURE

Land zoned for agricultural uses would not be altered and present uses would continue. No impact would occur under the No Action Alternative.

4.9 PUBLIC SERVICES

4.9.1 ALTERNATIVE A – PROPOSED PROJECT

WATER SUPPLY

Estimated water demands for Alternative A facilities are shown in **Table 4.9-1**. These estimates assume recycled water is not available for irrigation, toilet flushing, and other non-potable uses. The domestic water demand with the use of recycled water is shown in **Table 4.9-2**. As can be seen from **Table 4.9-1**, the total average day demand for potable water, without water recycling, is estimated to be 380,000 gallons per day (gpd). It is projected that a total of 4.0 acres of landscaping would be installed with an average water demand of 5,000 gpd/acre. Therefore, a total water demand of 20,000 gpd is assumed for irrigation purposes. The recommended water supply is the average day demand of domestic water plus landscape irrigation demand.

TABLE 4.9-1
ESTIMATED WATER DEMANDS WITHOUT RECYCLED WATER (GPD)
– ALTERNATIVE A

Water Demands	Alternative A
Weekday Day	346,000
Weekend Day	464,000
Average Day Demand ¹	380,000
Average Day Landscape Irrigation ²	20,000
Recommended Water Supply³	400,000

NOTES: ¹ Water demands = wastewater flows/0.95.

² Estimated at average daily demand of 5,000 gpd/acre landscaping. Type and acreage of landscaping assumed.

³ Recommended water supply = average day demand plus landscape irrigation.

SOURCE: HSE, 2006; AES, 2006.

TABLE 4.9-2
ESTIMATED WATER DEMANDS WITH RECYCLED WATER (GPD)
– ALTERNATIVE A

Site Layout Alternative	Alternative A
Average Day Water Demand ¹	400,000
Recycled Water Demand	127,000
Recommended Domestic Water Supply ²	273,000

NOTES: ¹ 5/7 weekday + 2/7 weekend day.

² Recommended supply = average day domestic water minus recycled water.

Water demands rounded to the nearest 100 gpd.

Recycled water demand includes toilet flushing and process water.

SOURCE: HSE, 2006; AES, 2006.

As described in **Section 2.0**, the Proposed Action would include dual plumbed fixtures to use recycled water for toilet flushing and for irrigation purposes should on-site wastewater treatment be chosen.

The proposed water storage tanks for domestic and recycled water would provide sufficient storage to accommodate the estimated peak flow demand (464,000 gpd). During weekday flows when the demand is less than the average day demand, water storage tanks would be filled to provide weekend reserves. The average day demand is used to establish the water supply required from on- or off-site sources.

Water Facilities

The following discusses preliminary water supply, water treatment, water storage, and pumping requirements to supply the proposed development.

Groundwater Wells

The California Department of Water Resources has records for 259 water production wells within 2 miles of the Madera Site. The wells range in depth from approximately 120 feet to over 700 feet. The new on-site well(s) would be drilled to a depth of at least 600 feet. Groundwater quality is generally good, but manganese levels tend to increase with depth in the vicinity of the Madera site. As stated in Section 3.9.1, manganese does not create a health hazard.

City of Madera Domestic Water Service

The City of Madera's nearest water well is well No. 26, located at Airport Drive. This well is approximately 600 feet deep and has a capacity of approximately 1,300 gpm. The City uses this well for standby and fire flow demands. Municipal Well No. 25, approximately a half-mile southeast of the airport, supplies the airport's water and has a production capacity of approximately 2,200 gpm. Connection to the City's water supply would require a looped system to the well, utilizing a new on-site well for primary and continuous water supply. Well No. 26 would continue to be used for redundancy and fire flow capacity in the looped system. An on-site storage tank may also be required to supplement redundancy and fire flow.

Water Storage and Pump Station

An on-site water storage tank would be required to store water produced by any on-site wells. The anticipated capacity requirements of the tank are summarized in **Table 4.9-3** below. The tank would be made of welded steel construction, meeting all American Water Works Association (AWWA) specifications for welded steel tanks. The tank would be cylindrical and could be partially or completely constructed below grade.

TABLE 4.9-3
DOMESTIC WATER STORAGE REQUIREMENTS WITH RECYCLED WATER
– ALTERNATIVE A

Site Layout Alternative	Alternative A
Domestic Water Storage (gallons) ¹	650,000
Fire Suppression (gallons) ²	360,000
Domestic Water Storage Tank Capacity (gallons) ³	1,010,000
Recommended Approximate Domestic Water Storage Tank Capacity (gallons) ⁴	1,100,000

NOTES: ¹ 2.0 times the weekend day water demand if water is recycled.

² Based on Type 1 construction with a full automatic sprinkler system, per the Madera Fire Marshall, fire flow required is 1,500 gpm for 4 hours, resulting in storage requirement of 360,000 gallons.

³ Domestic water storage plus fire suppression.

⁴ Rounded up to the nearest common tank size increment.

Water demands rounded up to the nearest 1,000 gal.

SOURCE: HSE, 2008; AES, 2008.

Because the Madera site is relatively flat, construction of a pump station would be required to maintain appropriate water pressure throughout the on-site distribution system and convey water from the storage tank to project facilities. Flow requirements would be satisfied by two fixed-speed high-service pumps that would each pump half the capacity of the project flow requirements.

Effects to Public Water Utilities

As noted above, water to supply Alternative A would be provided by on-site well water. Development of a City of Madera looped system would require the construction of water conveyance infrastructure from the City's nearest facilities. During operation of the casino, it is expected that 278 gpm, without recycled water, and 190 gpm with recycled water, would be required to adequately meet the water demands of Alternative A. Since water supply for Alternative A would be supplied either wholly from on-site wells or from an on-site well in combination with City Well No. 26 (used solely during maintenance of the primary on-site well or for fire flow), a reduction in available capacity of the City's water facilities would not occur. In addition, the Tribe would be required to pay for the cost of constructing the piping and related facilities required to create a looped system with the City. Therefore, Alternative A's effect on public water utilities would be less than significant.

WASTEWATER

Tables 4.9-4 and 4.9-5 provide estimated wastewater flows and resulting wastewater treatment plant (WWTP) design capacity for Alternative A. The use of recycled water would reduce the overall treated effluent disposal requirements, however use of recycled water would only be

possible with use of an on-site WWTP. The following discussion evaluates impacts to public services from wastewater treatment and disposal options. The on-site options include sprayfield disposal, leachfield disposal, combination sprayfield/leachfield disposal, surface water discharge, and water reuse and are described in **Section 2.2.7**. These options would have no effect on local public service providers because they would be fully paid for and operated by the Tribe on-site. Off-site disposal options include connection to the City of Madera WWTP.

TABLE 4.9-4
ESTIMATED WASTEWATER FLOWS FOR ALTERNATIVE A

	Area (ft ²)	Unit (gpd/ft ²)	Base Flow (gpd)	Typical Weekday Flows (gpd) ¹	Typical Weekend Flows (gpd) ¹	Average Day Flows (gpd) ²
Casino	121,630	1.25	151,700	87,200	128,900	99,100
Back of House	50,000	1.37	68,500	27,400	41,400	31,400
Retail	1,185	0.01	12	5	9	8
Food and Beverage	67,365	1.56	105,200	50,700	89,500	61,800
Entertainment/Lounge	7,000	0.54	3,780	1,500	2,400	1,800
Hotel	207,680	0.16	32,700	16,100	31,600	20,500
Pool and Spa	16,850	0.35	4,320	1,800	3,700	2,400
Central Plant/Cooling Towers	21,300	3.10	66,000	49,500	49,500	49,500
Total³	493,000	-	432,000	230,000	350,000	270,000

NOTES: ¹ Used for calculation purposes only.

² Average day Flows = 5/7 weekday + 2/7 weekend.

³ Wastewater flows rounded to the nearest 10,000 gpd.

SOURCE: HSE, 2006; AES, 2006.

TABLE 4.9-5
DESIGN WASTEWATER TREATMENT PLANT FLOWS
– ALTERNATIVE A

Site Layout Alternative	Alternative A Flows (GPD)
Weekday Day	230,000
Weekend Day	350,000
Average Day ¹	270,000
Recycled Water Demand	107,000
Average Day Disposal Flows ²	163,000

NOTES: ¹ 5/7 weekday + 2/7 weekend day.

² Wastewater flow minus recycled water.

Wastewater flows rounded to the nearest 100 gpd.

Estimated from similar facilities.

SOURCE: HSE, 2006; AES, 2006.

Development of an on-site wastewater treatment plant would produce treated effluent meeting NPDES requirements and Title 22 disinfected tertiary recycled water treatment standards.

Additionally, wastewater would be treated to ensure compliance with all applicable discharge limitations of a NPDES permit for surface discharge of treated effluent to waters of the U.S. On-site wastewater treatment and disposal options would not impact public services. Given the high quality of effluent that would be discharged from an on-site WWTP, no significant water quality degradation would occur (see **Section 4.3.1**) and thus indirect effects to downstream public water users and dischargers would be less than significant.

The 10.1-MGD capacity City WWTP currently has an average demand of 5.8 MGD. The recent expansion provides the City with sufficient capacity until 2023. Alternative A would require approximately 0.27 MGD of treatment capacity. While the City has available capacity to accept wastewater from the casino-hotel, obtaining City of Madera sewer service would require connection to the City sewer lines. An additional sewer line would be needed as well as potential expansion of existing lift stations (see **Section 2.2.7** and **Appendix BB**). This impact would be significant and mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

SOLID WASTE

Construction

Construction of Alternative A would result in a temporary increase in waste generation. Potential solid waste streams from construction would include the following:

- Paper, wood, glass, and plastics from packing materials, waste lumber, insulation, and empty non-hazardous chemical containers;
- Excess concrete; and
- Excess metal, including steel from welding/cutting operations, packing materials, and empty non-hazardous chemical containers, and aluminum from packing materials and electrical wiring.

Waste that cannot be recycled would be disposed of at the Fairmead Landfill, which accepts construction/demolition materials. This impact would be temporary and not significant. Nonetheless an additional mitigation measure as discussed in **Section 5.2.8** would further reduce effects to the landfill.

Operation

The California Integrated Waste Management Board has estimated waste disposal rates for the operation of various business types and residences. The business rates are expressed as tons per employee per year. The waste generation resulting from Alternative A's various components is estimated to be 7.6 tons per day (**Table 4.9-6**).

Solid waste services are expected to be provided by the City or County of Madera, which are subject to the state's recycling requirements. The development would not affect City or County diversion goals as waste from Tribal land is classified as out-of-state waste and is not calculated in local waste diversion statistics. The Alternative A development's solid waste generation would represent approximately 1.5% of the Fairmead Landfill's remaining daily capacity, which is well within capacity and is therefore less than significant. Mitigation is provided in **Section 5.2.8** to further ensure a reduction in the amount of waste that is landfilled.

TABLE 4.9-6
SOLID WASTE DISPOSAL ESTIMATE – ALTERNATIVE A

Employment Category	Number of Jobs	Business Type	Rate (Tons/Employee/Year)	Tons per Year	Tons per Day
Gaming	405	38 ¹	0.9	364.5	1.0
Hotel	72	32 ²	2.1	151.2	0.41
Food and Beverage	502	29 ³	3.1	1556.2	4.3
Other Dept.	144	33 ⁴	1.7	244.8	0.67
Entertainment	6	33	1.7	93.5	0.26
Administrative	55	33	1.7	95.2	0.26
Marketing	56	33	1.7	10.2	0.028
Maintenance	105	33	1.7	178.5	0.49
Security	90	38	0.9	81	1.22
Total	1435			2775.1	7.6

NOTES: ¹ Includes SIC code 79 Amusement and Recreation Services.

² Includes SIC code 70 Hotels.

³ Includes SIC code 58 Eating and Drinking Places.

⁴ Includes SIC code 73 Business Services.

SOURCE: CIWMB, 2005; AES, 2005.

ELECTRIC AND NATURAL GAS SERVICES

PG&E is the electricity and natural gas provider in the vicinity of the Madera site. The Madera site would be served from the existing overhead electric facilities extending east/west along Avenue 17. Additionally, PG&E could provide natural gas service via the distribution pressure gas lines stepped down from the transmission gas facilities that extend north/south between Golden State Boulevard and Highway 99, located adjacent to the Madera site. PG&E has adequate facilities and is willing to serve the Madera site (Barrow, pers. comm., 2005), thus the impact to electric facilities is less than significant.

TELECOMMUNICATIONS

AT&T has facilities located along Avenue 18 on the south side of the street and Road 23 on the east side of the street. -AT&T also has a cable along Golden State Boulevard north of Avenue 17. AT&T is responsible for providing service connection to the property line, most likely two 4-inch diameter conduits. The developer is responsible for any on-site infrastructure required to meet the AT&T connection at the property boundary (Olivo, pers. comm., 2005). There are no

capacity issues with telecommunications services in the area; thus, the impact would be less than significant.

PUBLIC HEALTH AND SAFETY

Law Enforcement

Development of Alternative A would increase calls for service to law enforcement agencies due to the new resident population created by new employees moving to Madera County and the City of Madera. Operations of Alternative A would also increase calls for service due to the increased patron/employee population at the Madera site.

New Residents

The new resident population is estimated to be 836 new residents. Those residents residing in the City of Madera would increase demands on the City of Madera Police Department. Revenues to the City exceed costs to the City as shown in **Section 4.7**. Thus, this impact would be less than significant.

New residents residing in unincorporated areas of Madera County would increase demands on the Madera County Sheriff's Department. As shown in **Section 4.7**, costs to the County would exceed revenues. Thus, this impact would be significant. Mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

Operational

The Madera site is currently within the jurisdiction of the Madera County Sheriff's Department, which would serve the Alternative A development. Alternative A would increase calls for service due to the development of the site and the new presence of employees and patrons at the site. Research suggests that an increase in crime from the project would result from an increased population at the site and not from casino gambling itself. Data examining the link between casino gambling and crime, including the results of the study by the National Opinion Research Center, is presented in **Section 4.7**. The increased calls for service associated with Alternative A have the potential to increase response times and decrease the level of service provided by the Madera County Sheriff's Department.

As discussed in **Section 2**, the Tribe has agreed in the MOU to supplement the County's budget for law enforcement with an annual contribution of \$415,000 or contribute an amount equal to the costs of the salary and benefits of one-half a sergeant position and five deputy positions. These additional positions would ensure 24-hour public safety coverage 365 days a year at the proposed casino and hotel, and provide adequate coverage during vacation time, sick time and time off of public safety staff. With the construction of the casino, the department will consider deployment options, including an on-site service office. The Tribe would employ security personnel to

provide surveillance of the casino, parking areas, and surrounding grounds. Security guards would carry two-way radios to request and respond to back up or emergency calls. As funding in the MOU would fund Sheriff's Department expectations of increased demands and on-site security would be provided, the impact would be less than significant.

Judicial and Correctional Services

Increased calls for law enforcement services from Alternative A would impact judicial and correctional services. As outlined in **Section 4.7**, costs to the County would exceed revenues. Thus, this impact would be significant. Mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

Fire Protection/Emergency Medical Services

Development of Alternative A would increase calls for service to fire protection services due to the new resident population created by new employees moving to Madera County and the City of Madera. Operations of Alternative A would also increase calls for service due to the increased patron/employee population at the Madera site.

New Residents

As discussed under law enforcement services, development of Alternative A would result in 836 new residents. Those residents residing in the City of Madera would increase demands on the City of Madera Fire Department. Revenues to the City exceed costs to the City as shown in **Section 4.7**. Thus, this impact would be less than significant.

New residents residing in unincorporated areas of Madera County would increase demands on the Madera County Fire Department. As shown in **Section 4.7**, costs to the County would exceed revenues. Thus, this impact would be significant. Mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

Construction Effects

Construction may introduce potential sources of fire to the Madera site. During construction, equipment and vehicles may come in contact with wildland areas and accidentally spark and ignite vegetation. Equipment used during grading and construction activities may also create sparks which could ignite dry grass on the site. This risk, which is similar to those that are found at other construction sites, would pose potentially significant impact to nearby fire departments that could be called to respond. Mitigation measures are described in **Section 5.2.8** that would reduce this potential impact to a less than significant level.

Operation Effects

As the site is currently undeveloped, there are few calls for service for fire protection and emergency medical services from the site. Currently the Madera County Fire Department, administered and staffed by the California Department of Forestry and Fire Protection (CAL FIRE), serves the Madera site. Development of Alternative A would increase calls for service to the County Fire Department, due to an increased population of employees and patrons on site.

Fire protection features, including sprinkler systems and fire-resistant construction, would be incorporated into Alternative A and are discussed in **Section 2.2.2**. As shown in **Section 4.7**, costs to the County would exceed revenues. Thus, this impact would be significant. Mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

Food and Water Safety

Once land is taken into trust, state and local laws and ordinances pertaining to food and water safety for employees and customers would not be applicable to activities on the Madera site. Therefore, there is a concern that food and water safety would be neglected, impacting the health and safety of customers and employees.

All recent (1999 – present) Tribal-State Compacts have required that tribes “adopt and comply with standards no less stringent than state public health standards for food and beverage handling.” The Compacts have required further that tribes “allow inspection of food and beverage services by state or county health inspectors, during normal hours of operation, to assess compliance with these standards, unless inspections are routinely made by an agency of the United States government to ensure compliance with equivalent standards of the United States Public Health Service.” The recent Compacts have also have required compliance with “standards no less stringent than federal water quality and safe drinking water standards applicable in California.” As with food safety, the Compacts have required that tribes “allow for inspection and testing of water quality by state or county health inspectors, as applicable, during normal hours of operation, to assess compliance with these standards, unless inspections and testing are made by an agency of the United States pursuant to, or by the Tribe under express authorization of, federal law, to ensure compliance with federal water quality and safe drinking water standards.” Violations of these food, beverage, and water quality standards are treated as violations of the Compact. It is assumed that similar standards will be included in the Tribal-State Compact (or procedures issued by the Secretary of the Interior in lieu of a Compact) with the North Fork Tribe.

The Tribe has additionally assured Madera County in its MOU with the County that it would adopt the food and beverage handling provisions and the safe drinking water standards from the 1999 model State compact in the unexpected event that such provisions are not included in the

Compact between the North Fork Tribe and the State. As expected, the Compact between the Tribe and the State, which has been signed by the Governor, but not yet ratified by the legislature, requires compliance with State public health standards for food and beverage handling. The Compact also requires compliance with federal water quality and safe drinking water standards applicable in California (see **Section 2.2.11** and **Appendix X**).

Finally, it should be noted that the federal Safe Drinking Water Act (SDWA) (in addition to other federal laws) is applicable on trust land. Water quality standards set by the SDWA would be applied to the public water supply at the casino/hotel resort to ensure public safety is protected. The drinking water system in the casino/hotel resort would be regulated as a Non-Transient/Non-Community (NTNC) public water system under the SDWA.

The USEPA has been consulted regarding the proposed NTNC public water system for the casino/hotel resort. After drilling the on-site wells but prior to use of the wells, the USEPA would require schematics of the system showing the well location, storage, any treatment (including disinfection), well construction details and drilling logs, anticipated visitor and employee population numbers, flow rate, and storage capacities. Typically the USEPA will visit the site at least once and perform a walk-through of the entire facility.

Baseline monitoring would be submitted to the USEPA before the public uses the water. Similar NTNC systems have requirements for monthly coliform testing, quarterly lead and copper testing and more extensive testing that is conducted annually. Monitoring requirements for the Alternative A system would likely be similar, but would be determined by the USEPA based on the size of the facility, the anticipated population, and other factors specific to the project. The USEPA would assign a Public Water System Identification Number to the drinking water system and would require the submittal of a monitoring plan for compliance with SDWA standards.

Given that the Tribal-State Compact (or Secretarial procedures) would require compliance with state food and beverage handling standards and that the SDWA would apply to trust land, a significant effect to public health and safety due to inadequate food and water safety precautions would not occur.

SCHOOLS

Operation of Alternative A would increase traffic primarily on the roads surrounding the Madera Site and Highway 99. There are no schools within a mile of the project or along Highway 99 where project traffic would be concentrated. As discussed in **Section 4.8.2** with the traffic mitigation measures all affected roads would operate at an acceptable level. The impact of traffic on school children's safety would be less than significant as schools are located away from the primary areas of project-generated traffic and mitigation measures for traffic would ensure that roads and intersections operate at an acceptable service level.

Alternative A would result in a population increase of 836 people with approximately 175 new students. As noted in **Section 4.7.1**, existing school facilities would be able to absorb the new student population. Therefore, the impact to school services would be less than significant.

4.9.2 ALTERNATIVE B – REDUCED INTENSITY ALTERNATIVE

WATER SUPPLY

The methodology used to establish potable water demand for Alternative A was used to establish potable water demand for Alternative B. Please refer to **Section 4.9.1** for a description of the methodology. **Table 4.9-7** and **Table 4.9-8** show the water demand with and without recycled water for Alternative B.

TABLE 4.9-7
ESTIMATED WATER DEMANDS WITHOUT RECYCLED WATER
– ALTERNATIVE B (GPD)

Water Demands	Alternative B
Weekday Day ¹	211,000
Weekend Day ¹	280,000
Average Day Demand ¹	231,000
Average Day Landscape Irrigation ²	20,000
Recommended Water Supply³	251,000

NOTES: ¹ Water demands = wastewater flows/0.95.

² Estimated at average daily demand of 5,000 gpd/acre landscaping. Type and acreage of landscaping assumed.

³ Recommended water supply = average day demand plus landscape irrigation.

SOURCE: HSE, 2006; AES, 2006.

TABLE 4.9-8
ESTIMATED WATER DEMANDS WITH RECYCLED WATER
– ALTERNATIVE B (GPD)

Site Layout Alternative	Alternative B
Average Day Water Demand ¹	251,000
Recycled Water Demand	85,000
Recommended Domestic Water Supply ²	166,000

NOTES: ¹ 5/7 * week day + 2/7 * weekend day.

² Recommended supply = average day domestic water minus recycled water.

Water demands rounded to the nearest 100 gpd.

Recycled water demand includes toilet flushing and process water.

SOURCE: HSE, 2006; AES, 2006.

Water Facilities

The water supply for Alternative B would be provided by an on-site groundwater well, as described under Alternative A. 800,000 gallons of domestic water storage would be provided to store water produced by on-site well(s) (may not be necessary if a looped system with the City is utilized). The water storage tank would be made of welded steel construction, meeting all American Water Works Association (AWWA) specifications for welded steel tanks. The tank would be cylindrical and could be partially or completely constructed below grade.

Because the Madera site is relatively flat, construction of a pump station would be required to maintain appropriate water pressure throughout the on-site distribution system and convey water from the storage tank to project facilities. Flow requirements would be satisfied by two fixed-speed high-service pumps that would each pump half the capacity of the project flow requirements.

Effects to Public Water Utilities

As noted above, water to supply Alternative B would be provided by on-site well water. Development of a City of Madera looped system would require the construction of water conveyance infrastructure from the City's nearest facilities. During operation of the casino, it is expected that 174 gpm without recycled water, or 116 gpm, with recycled water, would be required to adequately meet the water demands of Alternative B. Since water supply for Alternative B would be supplied either wholly from on-site wells or from an on-site well in combination with City Well No. 26 (used solely during maintenance of the primary on-site well or for fire flow), a reduction in available capacity of the City's water facilities would not occur. In addition, the Tribe would be required to pay for the cost of constructing the piping and related facilities required to create a looped system with the City. Therefore, Alternative B's effect on public water utilities would be less than significant.

WASTEWATER

Tables 4.9-9 and 4.9-10 provide estimated wastewater flows and resulting WWTP design capacity for Alternative B. The use of recycled water would reduce the overall treated effluent disposal requirements, however use of recycled water would only be possible with use of an on-site WWTP. The following discussion evaluates impacts to public services from wastewater treatment and disposal options. The on-site options include sprayfield disposal, leachfield disposal, combination sprayfield/leachfield disposal, surface water discharge, and water reuse and are described in **Section 2.3.6**. These options would have no effect on local public service providers because they would be fully paid for and operated by the Tribe on-site. Off-site disposal options include connection to the City of Madera WWTP.

TABLE 4.9-9
ESTIMATED WASTEWATER FLOWS FOR ALTERNATIVE B

	Area (ft ²)	Unit (gpd/ft ²)	Base Flow (gpd)	Typical Weekday Flows (gpd) ¹	Typical Weekend Flows (gpd) ¹	Average Day Flows (gpd) ²
Casino	90,255	1.02	91,820	52,800	78,100	60,000
Back of House	37,825	1.39	52,420	21,000	31,600	24,000
Retail	1,185	0.01	12	5	9	6
Food and Beverage	53,725	1.46	78,640	37,900	66,800	46,100
Entertainment/Lounge	7,000	0.54	3,7800	1,500	2,400	1,800
Central Plant/Cooling Towers	9,000	4.44	40,000	30,000	30,000	30,000
Total ³	199,000		270,000	140,000	210,000	160,000

NOTES: ¹ Used for calculation purposes only.

² Average Day Flows = 5/7 Weekday + 2/7 Weekend.

³ Wastewater flows rounded to the nearest 10,000 gpd.

SOURCE: HSE, 2006; AES, 2006.

Development of an on-site wastewater treatment plant would produce treated effluent meeting NPDES requirements and Title 22 disinfected tertiary recycled water treatment standards. Additionally, wastewater would be treated to ensure compliance with all applicable discharge limitations of a NPDES permit for surface discharge of treated effluent to waters of the U.S. On-site wastewater treatment and disposal options would not impact public services. In addition, given the high quality of effluent that would be discharged from an on-site WWTP, no significant water quality degradation would occur (see **Section 4.3.2**) and thus indirect effects to downstream public water users and dischargers would be less than significant.

Obtaining City of Madera sewer service would require connection to the City sewer lines located approximately five miles southwest of the Madera site. The 10.1-MGD capacity City WWTP currently has an average demand of 5.8 MGD. The recent expansion provides the City with sufficient capacity until 2023. Alternative B would require approximately 0.16 MGD of treatment capacity. While the City has available capacity to accept wastewater from the casino-hotel, obtaining City of Madera sewer service would require connection to the City sewer lines. An additional sewer line would be needed as well as potential expansion of existing lift stations (see **Section 2.3.6** and **Appendix BB**). This impact would be significant and mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

TABLE 4.9-10
DESIGN WASTEWATER TREATMENT PLANT FLOWS
– ALTERNATIVE B

Site Layout Alternative	Alternative B Flows (GPD)
Weekday Day	140,000
Weekend Day	210,000
Average Day ¹	160,000
Recycled Water Demand	65,000
Average Day Disposal Flows	105,000
NOTES: ¹ 5/7 * week day + 2/7 * weekend day.	
² Wastewater flow minus recycled water.	
Wastewater flows rounded to the nearest 100 gpd.	
Estimated from similar facilities.	
SOURCE: HSE, 2006; AES, 2006.	

SOLID WASTE

Construction waste from Alternative B would consist of the same materials as those listed under Alternative A. Waste would be disposed of at the Fairmead Landfill. This impact is temporary and not significant.

Based on the number and job types of employees it is estimated that Alternative B would generate 5.2 tons per day of solid waste (**Table 4.9-11**). Solid waste services are expected to be provided by the City or County of Madera, which are subject to the state's recycling requirements. The development would not affect City or County diversion goals as waste from Tribal land is classified as out-of-state waste and is not calculated in local waste diversion statistics. The Alternative B development's solid waste generation would represent approximately 1.04% of the Fairmead Landfill's remaining daily capacity, which is well within capacity and is therefore less than significant. Mitigation is provided in **Section 5.2.8** to further ensure a reduction in the amount of waste that is landfilled.

ELECTRIC AND NATURAL GAS SERVICES

As with Alternative A, the Madera site would be served from the existing overhead electric facilities extending east/west along Avenue 17. Additionally, PG&E could provide natural gas service via the distribution pressure gas lines stepped down from the transmission gas facilities that extend north/south between Golden State Boulevard and Highway 99, located adjacent to the Madera site. PG&E has adequate facilities and is willing to serve the Madera site (Barrow, pers. comm., 2005), thus the impact to electric facilities is less than significant.

TABLE 4.9-11
SOLID WASTE DISPOSAL ESTIMATE – ALTERNATIVE B

Employment Category	Number of Jobs	Business Type	Rate (Tons/Employee/Year)	Tons per Year	Tons per Day
Gaming	319	38	0.9	287.1	0.8
Food and Beverage	349	29	3.1	1,081.9	3.0
Other Dept.	101	33	1.7	171.7	0.5
Administrative	50	33	1.7	85	0.2
Marketing	51	33	1.7	86.7	0.2
Entertainment	6	33	1.7	10.2	0.03
Maintenance	74	33	1.7	125.8	0.3
Security	68	38	0.9	61.2	0.2
Total	1,018			1,909.6	5.2

SOURCE: CIWMB, 2005; AES, 2005.

TELECOMMUNICATIONS

Alternative B would be served from the same AT&T facilities as Alternative A. Depending on final design, Alternative B may require an extension of lines to meet at the Madera site. AT&T is responsible for providing service connection to the property line, most likely two 4-inch diameter conduits. The developer is responsible for any on-site infrastructure required to meet the AT&T connection at the property boundary (Olivo, pers. comm., 2005). There are no capacity issues with telecommunications services in the area; thus the impact would be less than significant.

PUBLIC HEALTH AND SAFETY

Law Enforcement

As with Alternative A, development of Alternative B would increase calls for service to law enforcement agencies due to the new resident population and operation of Alternative B facilities.

New Residents

The new resident population would be 534 new residents. Those residents residing in the City of Madera would increase demands on the City of Madera Police Department. Annual costs to the City would exceed revenues as shown in **Section 4.7**. Thus, this impact would be significant. Mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

New residents residing in unincorporated areas of Madera County would increase demands on the Madera County Sheriff's Department. Annual costs to the County would exceed revenues as shown in **Section 4.7**. Thus, this impact would be significant. Mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

Operational

As with Alternative A, the Madera site is within the jurisdiction of the Sheriff's Department. Alternative B would require the hiring of five deputies and one-half sergeant (**Section 4.7.1**). This is based on the similar size and operations when compared to Alternative A. Hiring standards and ratios are described under Alternative A. The Tribe does not currently have an agreement to pay for these services under Alternative B. As with Alternative A, the Tribe would employ security personnel for surveillance and patrol on-site; however, even with on-site security there would be increased demands on the Sheriff's Department. This impact would be significant and mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

Judicial and Correctional Services

As with Alternative A, increased calls for law enforcement services would impact judicial and correctional services. As outlined in **Section 4.7**, annual costs to the County exceed the revenues from taxes. This impact would be significant and mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

Fire Protection/Emergency Medical Services

As with Alternative A, Alternative B would increase calls for service to fire protection services due to the new resident population, construction of facilities, and operation of Alternative B.

New Residents

As discussed under law enforcement services, development of Alternative B would result in 534 new residents. Costs to the City would exceed revenues from the project, as shown in **Section 4.7**. This would be significant and mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

New residents residing in unincorporated areas of Madera County would increase demands on the Madera County Fire Department. Costs to the County exceed revenues from the project, as shown in **Section 4.7**. This impact would be significant and mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

Construction Effects

Construction of Alternative B may introduce potential sources of fire to the Madera site as described under Alternative A, but smaller in scale due to less developed acreage. This risk of fire, which is similar to those that are found at other construction sites, would pose potentially significant impacts to nearby fire departments that could be called to respond. Mitigation measures that would reduce the risk of construction fires to a less than significant level are listed in **Section 5.2.8**.

Operation Effects

Development of Alternative B would increase calls for service to the County Fire Department, due to an increased population of employees and patrons on site. Fire protection features, including sprinkler systems and fire-resistant construction, would be incorporated into Alternative B and are discussed in **Section 2.0**. Nonetheless, additional local fire protection resources would be required to serve Alternative B. Costs to the County exceed revenues from the project, as shown in **Section 4.7**. This impact would be significant and mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

Food and Water Safety

Once land is taken into trust, state and local laws and ordinances pertaining to food and water safety for employees and customers would not be applicable to activities on the Madera site. Therefore, there is a concern that food and water safety would be neglected, impacting the health and safety of customers and employees.

Although the terms of the County MOU would not apply, any renegotiated MOU with the County is expected to contain the food and beverage handling and safe drinking water provisions noted under Alternative A. Even if such provisions are not included, given that the Tribal-State Compact (or Secretarial procedures) would require compliance with state food and beverage handling standards and that the SDWA would apply to trust land (as analyzed in more detail under Alternative A), a significant effect to public health and safety due to inadequate food and water safety precautions would not occur.

SCHOOLS

As discussed for Alternative A, the impact of traffic on school children's safety would be less than significant as schools are located away from the primary areas of project-generated traffic and mitigation measures for traffic would ensure that roads and intersections operate at an acceptable service level.

Alternative B would result in a population increase of 534 people with approximately 112 new students. Most students would enter the Madera Unified School District (**Appendix R**). This is a 0.6% increase over the current number of students, compared to the normal growth of 2.9% per year (500 students). This growth rate is not substantially larger than current expected growth, thus the development of a new school would not be warranted (also see **Section 4.7.1**). Costs to the County, including the cost for educational services, exceed revenues from Alternative B, as shown in **Section 4.7.1**. Thus, this impact is considered significant and mitigation is provided in **Section 5.2.8** that would reduce the impact to a less than significant level.

4.9.3 ALTERNATIVE C – RETAIL ALTERNATIVE

WATER SUPPLY

The methodology used to establish the potable water demand for Alternative A was also used to establish potable water demand for Alternative C. Refer to **Section 4.9.1** for a description of the methodology. **Table 4.9-12** and **Table 4.9-13** show the water demand with and without recycled water for Alternative C.

TABLE 4.9-12
ESTIMATED WATER DEMANDS WITHOUT RECYCLED WATER
– ALTERNATIVE C (GPD)

Water Demands	Alternative C
Weekday Day	15,000
Weekend Day	25,000
Average Day Demand ¹	18,000
Average Day Landscape Irrigation ²	5,000
Recommended Water Supply³	23,000

NOTES: ¹ Water demands = wastewater flows/0.95.

² Estimated at average daily demand of 5,000 gpd/acre landscaping. Type and acreage of landscaping assumed.

³ Recommended water supply = average day demand plus landscape irrigation.

SOURCE: HSE, 2006; AES, 2006.

TABLE 4.9-13
ESTIMATED WATER DEMANDS WITH RECYCLED WATER
– ALTERNATIVE C (GPD)

Site Layout Alternative	Alternative C
Average Day Water Demand ¹	23,000
Recycled Water Demand	12,000
Recommended Domestic Water Supply ²	11,000

NOTES: ¹ 5/7 * week day + 2/7 * weekend day.

² Recommended supply = average day domestic water minus recycled water.

Water demands rounded to the nearest 100 gpd.

Recycled water demand includes toilet flushing and process water.

SOURCE: HSE, 2006; AES, 2006.

Water Facilities

The water supply for Alternative C would be provided by an on-site groundwater well, as described under Alternative A. One 600,000-gallon domestic water storage tank would be provided to store water produced by on-site well(s) (may not be necessary if a looped system with the City is utilized). The tank would be made of welded steel construction, meeting all AWWA

specifications for welded steel tanks. The tank would be cylindrical and could be partially or completely constructed below grade.

Because the Madera site is relatively flat, construction of a pump station would be required to maintain appropriate water pressure throughout the on-site distribution system and convey water from the storage tank to project facilities. Flow requirements would be satisfied by two fixed-speed high-service pumps that would each pump half the capacity of the project flow requirements.

Effects to Public Water Utilities

As noted above, water to supply Alternative C would be provided by on-site well water. Development of a City of Madera looped system would require the construction of water conveyance infrastructure from the City's nearest facilities. During operation of the casino, it is expected that 16 gpm without recycled water, or 8 gpm, with recycled water, would be required to adequately meet the water demands of Alternative C. Since water supply for Alternative C would be supplied either wholly from on-site wells or from an on-site well in combination with City Well No. 26 (used solely during maintenance of the primary on-site well or for fire flow), a reduction in available capacity of the City's water facilities would not occur. In addition, the Tribe would be required to pay for the cost of constructing the piping and related facilities required to create a looped system with the City. Therefore, Alternative C's effect on public water utilities would be less than significant.

WASTEWATER

Tables 4.9-14 and 4.9-15 provide estimated wastewater flows and resulting WWTP design capacity for Alternative C. The use of recycled water would reduce the overall treated effluent disposal requirements, however use of recycled water would only be possible with use of an on-site WWTP. The following discussion evaluates impacts to public services from wastewater treatment and disposal options. The on-site options include sprayfield disposal, leachfield disposal, combination sprayfield/leachfield disposal, surface water discharge, and water reuse and are described in **Section 2.4.6**. These options would have no effect on local public service providers because they would be fully paid for and operated by the Tribe on-site. Off-site disposal options include connection to the City of Madera WWTP.

TABLE 4.9-14
ESTIMATED WASTEWATER FLOWS FOR ALTERNATIVE C

	Area (ft ²)	Unit (gpd/ft ²)	Base Flow (gpd)	Typical Weekday Flows (gpd) ¹	Typical Weekend Flows (gpd) ¹	Average Day Flows (gpd) ²
Retail	225,000	0.12	27,700	11,100	17,300	12,900
Food and Beverage	12,000	0.63	7,500	3,600	6,400	4,400
Total³	237,000		35,000	15,000	24,000	17,000

NOTES: ¹ Used for calculation purposes only.

² Average day flows = 5/7 Weekday + 2/7 Weekend.

³ Wastewater flows rounded to the nearest 10,000 gpd.

SOURCE: HSE, 2006; AES, 2006.

TABLE 4.9-15
DESIGN WASTEWATER TREATMENT PLANT FLOWS
– ALTERNATIVE C

Site Layout Alternative	Alternative C Flows (GPD)
Weekday Day	15,000
Weekend Day	24,000
Average Day ¹	17,000
Recycled Water Demand	5,000
Average Day Disposal Flows ²	12,000

NOTES: ¹ 5/7 weekday + 2/7 weekend day.

² Wastewater flow minus recycled water.

Wastewater flows rounded to the nearest 100 gpd.

Estimated from similar facilities.

SOURCE: HSE, 2006; AES, 2006.

Development of an on-site wastewater treatment plant would produce treated effluent meeting NPDES requirements and Title 22 disinfected tertiary recycled water treatment standards. Additionally, wastewater would be treated to ensure compliance with all applicable discharge limitations of a NPDES permit for surface discharge of treated effluent to waters of the U.S. On-site wastewater treatment and disposal options would not impact public services. In addition, given the high quality of effluent that would be discharged from an on-site WWTP, no significant water quality degradation would occur (see **Section 4.3.3**) and thus indirect effects to downstream public water users and dischargers would be less than significant.

Obtaining City of Madera sewer service would require connection to the City sewer lines located approximately five miles southwest of the Madera site. The 10.1-MGD capacity City WWTP currently has an average demand of 5.8 MGD. The recent expansion provides the City with sufficient capacity until 2023. Alternative C would require approximately 0.017 MGD of treatment capacity. While the City has available capacity to accept wastewater from the casino-

hotel, obtaining City of Madera sewer service would require connection to the City sewer lines. An additional sewer line would be needed as well as potential expansion of existing lift stations (see **Section 2.4.6** and **Appendix BB**). This impact would be significant and mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

SOLID WASTE

Construction waste from Alternative C would consist of the same materials as those listed under Alternative A. Waste would be disposed of at the Fairmead Landfill. This impact is temporary and not significant.

Based on the number and job types of employees, it is estimated that Alternative C would generate 1.3 tons per day of solid waste (**Table 4.9-16**). Solid waste services are expected to be provided by the City or County of Madera, which are subject to the state's recycling requirements. The development would not affect City or County diversion goals as waste from Tribal land is classified as out-of-state waste and is not calculated in local waste diversion statistics. The Alternative C development's solid waste generation would represent approximately 0.26% of the Fairmead Landfill's remaining daily capacity, which is well within capacity and is therefore less than significant. Mitigation is provided in **Section 5.2.8** to further ensure a reduction in the amount of waste that is landfilled.

TABLE 4.9-16
SOLID WASTE DISPOSAL ESTIMATE – ALTERNATIVE C

Employment Category	Number of Jobs	Business Type	Rate (Tons/Employee/Year)	Tons per Year	Tons per Day
Retail	695	26 ¹	0.3	208.5	0.6
Food and Beverage	80	29 ²	3.1	248	0.7
Total	775			456.5	1.3

NOTES: ¹ Includes SIC code 26 Retail Trade – General Merchandise Stores.

² Includes SIC code 58 Eating and Drinking Places.

SOURCE: AES, 2006; CIWMB, 2005.

ELECTRIC AND NATURAL GAS SERVICES

As with Alternative A, the Madera site would be served from the existing overhead electric facilities extending east/west along Avenue 17. Additionally, PG&E could provide natural gas service via the distribution pressure gas lines stepped down from the transmission gas facilities that extend north/south between Golden State Boulevard and Highway 99, located adjacent to the Madera site. PG&E has adequate facilities and is willing to serve the Madera site (Barrow, pers. comm., 2005), thus the impact to electric facilities is less than significant.

TELECOMMUNICATIONS

Alternative C would be served from the same AT&T facilities as Alternative A. Depending on final design, Alternative C may require an extension of lines to meet at the Madera site. AT&T is responsible for providing service connection to the property line, most likely two 4-inch diameter conduits to the street. The developer is responsible for any on-site infrastructure required to meet the AT&T connection at the property boundary (Olivo, pers. comm., 2005). There are no capacity issues with telecommunications services in the area; thus the impact would be less than significant. Exact on-site infrastructure for Alternative C will be determined upon approval of the final construction plans.

PUBLIC HEALTH AND SAFETY

Law Enforcement

Development of Alternative C would increase calls for service to law enforcement agencies due to the new resident population and operation of Alternative C facilities.

New Residents

The new resident population is estimated to be 388 new residents (**Section 4.7.1**). Those residents residing in the City of Madera would increase demands on the City of Madera Police Department. Annual costs to the City would exceed revenues as shown in **Section 4.7.1**. Thus, this impact would be significant. Mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

New residents residing in unincorporated areas of Madera County would increase demands on the Madera County Sheriff's Department. Annual costs to the County would exceed revenues as shown in **Section 4.7**. Thus, this impact would be significant. Mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

Operation

Under Public Law 280, the State of California and other local law enforcement agencies have enforcement authority over criminal activities on Tribal land. The Madera County Sheriff's Department would provide law enforcement services to Alternative C. Alternative C would result in fewer calls for service for public safety-related incidences than the other alternatives. This reduction is due to the fact that fewer visitors would access the facility and the hours of operation would be reduced. However, calls for service and the need for law enforcement presence would still increase on the property due to the development of land currently undeveloped. In other retail centers, often a deputy is staffed on a full-time basis to handle events on the property including car theft, shoplifting, disorderly conduct, and emergency situations. It is estimated that operation of Alternative C would require the hiring of as many as five deputies and one-half sergeant (**Section 4.7.1**). Hiring standards and ratios are described under Alternative A. As there

is no agreement for funding of these services, the impact to the department would be significant. Mitigation measures have been included in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

Judicial and Correctional Services

Increased calls for law enforcement services would impact judicial and correctional services. As the level of criminal activity would be lower than for Alternative A due to size, and the types of crimes would not expected to be particularly complex, less work is projected under this alternative for the judicial system. As outlined in **Section 4.7**, annual costs to the County exceed the revenues from taxes. This impact would be significant and mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

Fire Protection/Emergency Medical Services

Alternative C would increase calls for service to fire protection services due to new resident population, construction of facilities, and operation of Alternative C.

New Residents

As discussed under law enforcement services, development of Alternative C would result in 288 new residents. Costs to the City exceed revenues from the project, as shown in **Section 4.7**. This impact would be significant and mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

New residents residing in unincorporated areas of Madera County would increase demands on the Madera County Fire Department. Costs to the County exceed revenues from the project as shown in **Section 4.7**. This impact would be significant and mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

Construction Effects

Construction of Alternative C would introduce potential sources of fire to the Madera site that are similar to those described under Alternative A, but smaller in scale due to less developed acreage. This risk of fire, which is similar to those that are found at other construction sites, would pose potentially significant impacts to nearby fire departments that could be called to respond. Mitigation measures that would reduce the risk of construction fires to a less than significant level are listed in **Section 5.2.8**.

Operation Effects

As a large retail facility, Alternative C would have a reduced demand on fire protection services when compared with the other development alternatives. Alternative C would result in fewer calls for service for medical-related and fire-related incidences than the other alternatives. This

reduction is due to fewer visitors to the facility and shorter hours of operation. There is currently no fire station that can respond within the County's response goal of 4 minutes.

As there is no current agreement for providing fire protection services under Alternative C, the impact would be significant. Mitigation measures that would fund these services are listed in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

Food and Water Safety

Once land is taken into trust, state and local laws and ordinances pertaining to food and water safety for employees and customers would not be applicable to activities on the Madera site. Therefore, there is a concern that food and water safety would be neglected, impacting the health and safety of customers and employees. Given that the SDWA would apply to trust land (as analyzed in more detail under Alternative A), a significant impact to public health and safety due to inadequate water safety precautions would not occur.

Although the terms of the County MOU would not apply, any renegotiated MOU with the County is expected to contain the food and beverage handling and safe drinking water provisions noted under Alternative A. However, if such terms were not included in a renegotiated MOU or the MOU was not renegotiated, a potentially significant effect to public health could occur if Tribal food and beverage handling standards were inadequate. Mitigation measures contained in **Section 5.2.8** would ensure this effect is mitigated to a less than significant level.

SCHOOLS

As discussed for Alternative A, the impact of traffic on school children's safety would be less than significant as schools are located away from the primary areas of project-generated traffic and mitigation measures for traffic would ensure that roads and intersections operate at an acceptable service level.

Alternative C would result in a population increase of 388 people with approximately 81 new students entering the Madera Unified School District. This is a 0.5% increase over the current number of students and normal growth is 2.9% per year (500 students). This growth rate is not substantially larger than current expected growth, thus the development of a new school would not be warranted (also see **Section 4.7.1**). Costs to the County, including the cost for educational services, exceed revenues from Alternative C, as shown in **Section 4.7.1**. Thus, this impact is considered significant and mitigation is provided in **Section 5.2.8** that would reduce the impact to a less than significant level.

4.9.4 ALTERNATIVE D – NORTH FORK LOCATION

WATER SUPPLY

The methodology used to establish potable water demand for Alternative A was used to establish potable water demand for Alternative D. Refer to **Section 4.9.1** for a description of the methodology. **Table 4.9-17** and **Table 4.9-18** show the water demand with and without recycled water for Alternative D.

Water Facilities

The water supply for Alternative D would be provided by groundwater wells or be supplied from the Madera County Maintenance District 8A. The County of Madera assessed the groundwater conditions in eastern Madera County (County of Madera, 2002). The study found that the overall water balance and current water demands in the foothill region suggest that a sufficient quantity of water is available on a regional basis to meet current demands and support some future development. The study included a detailed review 1,492 well log records in the foothill region. The median well yield is 8.5 gpm and average well yield is 22 gpm. These well yields are based on drillers initial airlift tests, so actual production may be lower. Well yields should be confirmed by means of a 72-hour pumping test.

TABLE 4.9-17
ESTIMATED WATER DEMANDS WITHOUT RECYCLED WATER
– ALTERNATIVE D (GPD)

Water Demands	Alternative D
Weekday Day	19,000
Weekend Day	30,000
Average Day Demand ¹	22,000
Average Day Landscape Irrigation ²	5,000
Recommended Water Supply³	27,000
NOTES: ¹ Water demands = wastewater flows/0.95.	
² Estimated at average daily demand of 5,000 gpd/acre landscaping. Type and acreage of landscaping assumed.	
³ Recommended water supply = average day demand plus landscape irrigation.	
SOURCE: HSE, 2006; AES, 2006.	

Should water supply be provided by the District or through on-site supplies, a 400,000-gallon domestic water storage tank would be provided, primarily for fire suppression needs. Because the topography of the North Fork site varies, it may be necessary to construct a pump station if the proposed storage tank cannot be placed in a location suitable to provide pressurized flow.

TABLE 4.9-18
ESTIMATED WATER DEMANDS WITH RECYCLED WATER
– ALTERNATIVE D (GPD)

Site Layout Alternative	Alternative D
Average Day Water Demand ¹	27,000
Recycled Water Demand	13,000
Recommended Domestic Water Supply ²	14,000

NOTES: ¹ 5/7 * week day + 2/7 * weekend day.
² Recommended supply = average day domestic water minus recycled water.
Water demands rounded to the nearest 100 gpd.
Recycled water demand includes toilet flushing and process water.
SOURCE: HSE, 2006; AES, 2006.

Effects to Public Water Facilities

Water to supply Alternative D could be provided by either well water or the Madera County Maintenance District 8A. Development of an off-site water supply source would require the construction of water conveyance infrastructure from the North Fork site to the nearest County facilities. During operation of the casino, it is expected that 19 gpm without recycled water, and 10 gpm with recycled water, would be required to be extracted from on-site water wells. While the District has capacity to serve the project, the addition of Alternative D would introduce an unplanned water demand to the overall water supply system. Because adequate water is available from the County, and the Tribe would pay for all infrastructure upgrades required to serve the site, there would be no significant impact to water supply services.

WASTEWATER

Tables 4.9-19 and 4.9-20 provide estimated wastewater flows and resulting WWTP design capacity for Alternative D. The use of recycled water would reduce the overall treated effluent disposal requirements, however use of recycled water would only be possible with use of an on-site WWTP. The following discussion evaluates impacts to public services from wastewater treatment and disposal options. The on-site options include sprayfield disposal, leachfield disposal, combination sprayfield/leachfield disposal, surface water discharge, and water reuse and are described in **Section 2.5.6**. These options would have no effect on local public service providers because they would be fully paid for and operated by the Tribe on-site.

Development of an on-site wastewater treatment plant would produce treated effluent meeting NPDES requirements and Title 22 disinfected tertiary recycled water treatment standards. Additionally, wastewater would be treated to ensure compliance with all applicable discharge limitations of a NPDES permit for surface discharge of treated effluent to waters of the U.S. On-site wastewater treatment and disposal options would not impact public services. In addition, given the high quality of effluent that would be discharged from an on-site WWTP, no significant

water quality degradation would occur (see **Section 4.3.4**) and thus indirect effects to downstream public water users and dischargers would be less than significant.

TABLE 4.9-19
ESTIMATED WASTEWATER FLOWS FOR ALTERNATIVE D

	Area (ft ²)	Unit (gpd/ft ²)	Base Flow (gpd)	Typical Weekday Flows (gpd) ¹	Typical Weekend Flows (gpd) ¹	Average Day Flows (gpd) ²
Casino	15,451	1.00	15,500	8,900	13,180	10,130
Back of House	6,000	1.18	7,050	2,820	4,260	3,230
Food and Beverage	4,550	2.87	13,050	6,280	11,090	7,660
Total³	26,000		36,000	18,000	29,000	21,000

NOTES: ¹ Used for calculation purposes only.

² Average day flows = 5/7 weekday + 2/7 weekend.

³ Wastewater flows rounded to the nearest 10,000 gpd.

SOURCE: HSE, 2006; AES, 2006.

TABLE 4.9-20
DESIGN WASTEWATER TREATMENT PLANT FLOWS
– ALTERNATIVE D

Site Layout Alternative	Alternative D Flows (GPD)
Weekday Day	18,000
Weekend Day	29,000
Average Day ¹	21,000
Recycled Water Demand	8,000
Average Day Disposal Flows ²	13,000

NOTES: ¹ 5/7 weekday + 2/7 weekend day.

² Wastewater flow minus recycled water.

Wastewater flows rounded to the nearest 100 gpd.

Estimated from similar facilities.

SOURCE: HSE, 2006; AES, 2006.

Off-site disposal options include connection to the Madera County WWTP for the community of North Fork. Obtaining County sewer service would require connection to the County sewer lines located approximately one mile northwest of the North Fork site. The 31,000 gpd capacity WWTP plant is currently near maximum capacity and is undergoing an expansion to 60,000 gpd of capacity. By adding the Alternative D wastewater flows to the expanded WWTP, the plant would be near capacity. This impact would be significant and mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

SOLID WASTE

Construction waste from Alternative D would consist of the same materials as those listed under Alternative A. Waste would be disposed of at the Fairmead Landfill. This impact is temporary and not significant.

Based on the number and job types of employees it is estimated that Alternative D would generate 0.79 tons per day of solid waste (**Table 4.9-21**). Solid waste services are expected to be provided by the City or County of Madera, which are subject to the state's recycling requirements. The development would not affect City or County diversion goals as waste from Tribal land is classified as out-of-state waste and is not calculated in local waste diversion statistics. The Alternative D development's solid waste generation would represent approximately 0.16% of the Fairmead Landfill's remaining daily capacity, which is well within capacity and is therefore less than significant. Mitigation is provided in **Section 5.2.8** to further ensure a reduction in the amount of waste that is landfilled.

ELECTRIC AND NATURAL GAS SERVICES

PG&E is the company that provides electricity service in the vicinity of the North Fork site. PG&E has an existing overhead electric 12-kilovolt line near Road 225 and Rainbow Road. PG&E has indicated that they would provide service to the site upon acceptance of application and the required site plans. The service would be installed under PG&E's existing tariffs, Rules 15 and 16, on file with the Public Utilities Commission (Barrow, pers. comm., 2005). PG&E has

TABLE 4.9-21
SOLID WASTE DISPOSAL ESTIMATE – ALTERNATIVE D

Employment Category	Number of Jobs	Business Type	Rate (Tons/Employee/Year)	Tons per Year	Tons per Day
Gaming	62	38 ¹	0.9	55.8	0.15
Food and Beverage	49	29 ²	3.1	151.9	0.42
Other Dept	12	33	1.7	20.4	0.06
Administrative	16	33	1.7	27.2	0.07
Marketing	4	33	1.7	6.8	0.02
Maintenance	9	33	1.7	15.3	0.04
Security	10	38	0.9	9	0.03
Total	162			286.4	0.79

NOTES: ¹ Business Type 38 Includes SIC code 73 Business Services.

² Business Type 29 Includes SIC code 58 Eating and Drinking Places.

SOURCE: CIWMB, 2005; AES, 2006.

adequate facilities and is willing to serve the North Fork site (Barrow, pers. comm., 2005), thus the impact to electric facilities is less than significant.

There are no natural gas facilities in the vicinity of the North Fork site (Barrow, pers. comm., 2005). The project would utilize solely electric appliances or propane. Implementation of

Alternative D is expected to result in a less than significant effect to electric and natural gas services.

TELECOMMUNICATIONS

In order for the Ponderosa Telephone Company to provide telecommunication service to the North Fork site, an extension would be necessary to extend fiber cable from Road 225 along Rainbow Drive. Infrastructure would include fiber cable from Road 225 plus a cabinet on site (Westfall, pers. comm., 2005). Ponderosa Telephone Company could provide service and the Tribe would be required to fund the extension of the cable, so the impact is less than significant.

PUBLIC HEALTH AND SAFETY

Law Enforcement

Development of Alternative D would increase calls for service to law enforcement agencies due to the new resident population and operation of Alternative D facilities.

New Residents

The new resident population would be 32 new residents (**Section 4.7.1**). Those residents residing in the City of Madera would increase demands on the City of Madera Police Department. Annual costs to the City would exceed revenues as shown in **Section 4.7**. Thus, this impact would be significant. Mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

New residents residing in unincorporated areas of Madera County would increase demands on the Madera County Sheriff's Department. Annual costs to the County would exceed revenues as shown in **Section 4.7**. Thus, this impact would be significant. Mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

Operational

The North Fork site is within the jurisdiction of the Sheriff's Department. Assuming that the rate of calls is proportional to the size of the facility, Alternative D would result in fewer calls for sheriff assistance than Alternative A. Fewer calls would require fewer officers to respond to those calls. Hiring standards and ratios are described under Alternative A. The Tribe would employ security personnel for surveillance and patrol on-site; however, even with on-site security there would be increased demands on the Sheriff's Department. The Tribe does not currently have an agreement to pay for Sheriff services under Alternative D. Thus, this impact would be significant and mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

Judicial and Correctional Services

As with Alternative A, increased calls for law enforcement services would impact judicial and correctional services. As outlined in **Section 4.7**, annual costs to the County exceed the revenues from taxes. This impact would therefore be significant and mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

Fire Protection/Emergency Medical Services

As with Alternative A, Alternative D would increase calls for service to fire protection services due to the new resident population, construction of facilities, and operation of Alternative D.

New Residents

As discussed under law enforcement services, development of Alternative D would result in 32 new residents. Costs to the City exceed revenues from the project, as shown in **Section 4.7**. This impact would be significant and mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

New residents residing in unincorporated areas of Madera County would increase demands on the Madera County Fire Department. Costs to the County exceed revenues from the project, as shown in **Section 4.7**. This impact would be significant and mitigation is provided in **Section 5.2.8**. Implementation of mitigation measures would reduce impacts to less than significant.

Construction Effects

Construction and operation of Alternative D may introduce potential sources of fire to the North Fork site. Although construction would be shorter in duration and take place over a smaller area than Alternative A, the risk of a serious wildfire would be greater due to the density of vegetation and rural residential developments surrounding the North Fork site. This risk of fire, which is similar to those that are found at other construction sites in the Sierra Nevada foothills, would pose a potentially significant impact to nearby fire departments that could be called to respond. Mitigation measures that would reduce the risk of construction fires to a less than significant level are listed in **Section 5.2.8**.

Operation Effects

Development of Alternative D would increase calls for service to the County Fire Department, due to an increased population of employees and patrons on site.

Development of Alternative D would increase the calls for service and may decrease the response times in the area. The response times in the vicinity of the North Fork site range from 10 to 15 minutes. It is difficult to quantify the precise affect the increase in calls would have on response times from the station, but qualitatively the increase could be a potentially significant impact. As

discussed in **Section 2**, a Tribal security force would provide daily public safety needs of the casino. Mitigation measures listed in **Section 5.2.8** would further reduce the effects from Alternative D on fire protection services in Madera County to a less than significant level.

Food and Water Safety

Given that the North Fork is already held in trust, state and local laws and ordinances pertaining to food and water safety for employees and customers would not apply to activities on the site. Therefore, there is a concern that food and water safety would be neglected, impacting the health and safety of customers and employees.

Although the terms of the County MOU would not apply, any renegotiated MOU with the County is expected to contain the food and beverage handling and safe drinking water provisions noted under Alternative A. Even if such provisions are not included, given that the Tribal-State Compact (or Secretarial procedures) would require compliance with state food and beverage handling standards and that the SDWA applies to trust land (as analyzed in more detail under Alternative A), a significant effect to public health and safety due to inadequate food and water safety precautions would not occur.

SCHOOLS

Operation of Alternative D would increase traffic in the vicinity of the North Fork site including roads near North Fork Elementary School. Three intersections within a mile of the school were analyzed in the traffic study for increased traffic due to development of Alternative D. These intersections are 1) Malum Ridge Road and Road 225, 2) Road 225 and Cascadel Road, and 3) North Fork Road and Auberry Road. These three intersections would continue to operate at the same service levels (TPG Consulting, 2005). As intersections would operate at the same service levels, the impact to school children from increased traffic would be less than significant.

Alternative D would result in a population increase of 32 people with approximately 7 new students. Due to the smaller number of students generated, a new school would not be warranted. Additional costs, described in **Section 4.7.1**, would be incurred to hire teachers and for other incidental costs of the new students. Costs to the County, including the cost for educational services, exceed revenues from Alternative D, as shown in **Table 4.7-56** of **Section 4.7.1**. Thus, this impact is considered significant and mitigation is provided in **Section 5.2.8** that would reduce the impact to a less than significant level.

4.9.5 ALTERNATIVE E – NO ACTION ALTERNATIVE

Note that none of the contributions or requirements described in the Memoranda of Understanding or Tribal-State Compact (see **Section 2.0**) would be applicable to Alternative E.

WATER SUPPLY

Under the No Action Alternative, water supply to the Madera site would not be necessary. No development would take place. Thus, no effect to water supply services would result from the No Action Alternative.

WASTEWATER

No wastewater treatment or discharge would be necessary under the No Action Alternative. Thus, no effect to wastewater services would result.

SOLID WASTE

No development would take place under this alternative. Thus, the No Action Alternative would not result in solid waste production. Thus, no effect to solid waste services would result from the No Action Alternative.

ELECTRIC AND NATURAL GAS SERVICES

No development would take place under this alternative. Thus, the No Action Alternative would not result in effects to electric or natural gas services. The Tribe would not contribute to the expansion of utility service in and around the Madera or North Fork site.

TELECOMMUNICATIONS

No development would take place under this alternative. Thus, the No Action Alternative would not result in effects to telecommunication services. The Tribe would not contribute to the expansion of utility service in and around the Madera or North Fork site.

PUBLIC HEALTH AND SAFETY

Law Enforcement

No development would take place under this alternative. Thus, the No Action Alternative would not result in effects to law enforcement.

Fire Protection/Emergency Medical Service

No development would take place under this alternative. Thus, an increased need for fire protection and emergency medical services would not result. Thus, no effects to fire protection or emergency medical services would result from the No Action Alternative.

Schools

No development would take place under this alternative. There would be no increased traffic related hazards to school children. An increased demand on school services would not occur. Thus, no effect to school services would result from the No Action Alternative.

4.10 OTHER VALUES

4.10.1 ALTERNATIVE A – PROPOSED PROJECT

NOISE

Overview

The project has the potential to affect the existing ambient noise environment in the immediate project vicinity as follows:

- Construction activities associated with the development of Alternative A would cause short-term increases in the ambient noise environment.
- Mechanical equipment associated with the heating, ventilating, air conditioning (HVAC), cold food storage and wastewater treatment systems could cause an appreciable permanent increase in ambient noise levels in the immediate project vicinity.
- Truck deliveries/loading dock activities associated with the ongoing operation of the facility would result in intermittent increases in ambient noise in the immediate vicinity of loading dock areas.
- On-site traffic flow and parking lot activities associated with Alternative A would cause increases in the ambient noise environment.
- Increases in traffic volumes on the local roadway network as a result of the operation of Alternative A would result in increases in traffic noise levels along roadways that serve the Madera site.

Methodology

To evaluate changes in the ambient noise environment resulting from development of Alternative A, a combination of noise surveys, use of existing acoustical literature and studies, and application of accepted noise prediction methodologies was employed. Absolute noise levels generated by the on-site noise sources described above were compared against the Federal Highway Administration (FHWA) exterior noise abatement criteria of 67 dB to evaluate the consequences of on-site noise sources relative to existing noise-sensitive uses (residential) located in the project vicinity.

Changes in off-site traffic noise levels which would result from the project alternatives were compared against the Federal Interagency Commission on Noise (FICON) existing ambient noise level significance criteria (**Table 4.10-1**) to evaluate traffic noise consequences at existing sensitive receptors located along the roadway network which would serve the project site.

A more specific description of the methodology employed in the evaluation of environmental consequences for each of these project components follows.

Federal Interagency Committee on Noise

Some guidance as to the significance of changes in ambient noise levels is provided by the 1992 findings of FICON, which assessed the annoyance effects of changes in ambient noise levels resulting from aircraft operations. The FICON recommendations are based upon studies that relate aircraft and traffic noise levels to the percentage of persons highly annoyed by the noise. 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.

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 Ldn. The changes in noise exposure that are shown in **Table 4.10-1** are expected to result in equal changes in annoyance at sensitive land uses. Although the FICON recommendations were specifically developed to address aircraft noise impacts, they are used in this analysis for traffic noise described in terms of Ldn. For non-transportation noise sources affecting noise-sensitive land uses, an increase in ambient noise levels of 5 dB is considered to be potentially significant.

TABLE 4.10-1
MEASURES OF SUBSTANTIAL INCREASE FOR TRANSPORTATION NOISE EXPOSURE

Ambient Noise Level Without Project (L_{dn})	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	+1.5 dB or more

SOURCE: FICON, 1992.

Federal Noise Abatement Criteria

The Federal Highway Administration (FHWA) establishes Noise Abatement Criteria (NAC) for various land uses, which have been categorized, based upon activity and sensitivity to noise, as indicated in **Table 4.10-2**. The **Table 4.10-2** standards that are applicable to this project are 67 dB L_{eq} exterior noise level standard for Residences and Motels (Category B), and the 52 dB interior noise level standard applied to those same uses under Category E.

Construction Noise Evaluation Methodology

During the construction phase of the project, noise from construction would dominate the noise environment in the immediate area. Equipment used for construction generates noise levels as indicated in **Table 4.10-3**. Maximum noise levels from different types of equipment under different operating conditions could range from 85 dB to 88 dB at a distance of 50 feet. Construction activities are usually temporary in nature, typically occurring during normal working hours. Construction noise impacts could be significant if nighttime operations or use of unusually noisy equipment resulted in annoyance or sleep disruption for nearby residents.

TABLE 4.10-2
FHWA NOISE ABATEMENT CRITERIA

Activity Category	L _{eq} (h), dBA	Activity Category Description
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need, and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	---	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

NOTE: Hourly A-weighted sound level, decibels (dBA).

SOURCE: Federal Highway Administration, 2000.

TABLE 4.10-3
TYPICAL CONSTRUCTION EQUIPMENT NOISE LEVELS

Type of Equipment	Maximum Noise Level, dBA at 50 feet
Scrapers	88
Bulldozers	87
Heavy Trucks	88
Backhoe	85
Pneumatic Tools	85

SOURCE: Bolt, Beranek, and Newman, 1971.

Noise would also be generated during the construction phase by increased truck traffic on area roadways. Project-generated noise sources would be truck traffic associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

Mechanical Equipment Noise Evaluation Methodology

Although information pertaining to specific equipment types, sizes, location, and sound output is unavailable, it is likely that a combination of chillers, compressors, fans, condensers, pumps, blowers, and cooling towers would be needed to meet the project's refrigeration, HVAC, and water/wastewater treatment requirements. While specific noise levels at nearby residential uses cannot be accurately quantified at this time, recognition of the noise-generation of such equipment has been included in the assessment of potential environmental noise consequences.

Truck Deliveries and Loading Dock Activity Noise Evaluation Methodology

Truck deliveries are an integral part of commercial activities, as the delivery of food and/or merchandise to such facilities is a routine occurrence. To determine typical loading dock noise levels, noise level data collected at a typical loading dock were utilized. This level of activity is estimated to represent a reasonable worst-case hour of loading dock activity. Existing data indicates that during a busy hour of loading dock operations, the measured hourly average (L_{eq}) noise level was 60 dB at a distance of 50 feet from the loading dock (AES, 2003).

On-Site Traffic and Parking Lot Noise Evaluation Methodology

Parking lot noise can be an annoyance to adjacent sensitive receptors. Estimates of the maximum noise levels associated with some parking lot activities are presented in **Table 4.10-4**.

Conversations in parking areas may also be an annoyance to adjacent sensitive receptors. Sound levels of speech typically range from 33 dB at 50 feet for normal speech to 50 dB at 50 feet for very loud speech.

TABLE 4.10-4
NOISE LEVELS GENERATED BY PARKING LOT NOISE ACTIVITIES

Noise Source	Maximum Noise Levels (dBA)
Car Door Slamming	63
Car Starting	60
Car Accelerating	55
Car Idling	65
People Shouting, Laughing	61

SOURCE: VRPA Technologies, 2008.

Off-Site Traffic Noise Evaluation Methodology

To evaluate noise levels due to traffic, Sound 2000, the Caltrans version of the FHWA STAMINA 2.0/OPTIMA Traffic Noise Prediction Program, was used. The model allows the use of either the California reference energy mean emission levels (Calveno curves) or the National reference energy mean emission levels for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. **Appendix O** contains the noise study and noise model input data. The traffic noise prediction model results are provided in **Table 4.10-5** for Alternative A. As shown in the following table, projected noise increases are well below the 5 dB FICON significance criteria. Existing and future noise level data for the nearest sensitive receptor is also provided in **Table 4.10-5**.

TABLE 4.10-5
ALTERNATIVE A - PREDICTED NOISE LEVELS
FOR YEAR 2010 (dBA)

Receptor	2010 No Project Leq	2010 Plus Project Leq	2010 No Project vs. 2010 Plus Project (Difference)
Madera Site	55.8	55.9	0.1
Residential Receptor	63.3	64.8	1.5

SOURCE: VRPA Technologies, 2008.

Noise Effects

Construction Noise Effects

Construction activities will result in short-term increases in the local ambient noise environment in excess of the FHWA 67 dB threshold of significance. It is conservatively assumed that construction activities will take place on the entire Madera site, with the closest sensitive receptor (rural residence) from the property line of the Madera site located approximately 200 feet away. While air absorbs noise at the rate of 3 dB to 6 dB per doubling of distance, noise generated by construction activities would attenuate between 9 dB and 18 dB, and may exceed the FHWA 67 dB threshold of significance (ONCC, 2000). Mitigation measures identified in **Section 5.0** will reduce this impact to a less than significant level.

Mechanical Equipment Noise Effects

Due to the considerable distance between the proposed development and the nearest sensitive receptors (~1800 feet from proposed developed area and nearest rural residence), mechanical equipment noise associated with the operation of Alternative A is not expected to approach significant noise levels in those areas. Nonetheless, because mechanical equipment noise levels can be highly variable, it is assumed that noise levels from this equipment may exceed the significance criteria, and the noise levels are therefore considered to be significant. Mitigation measures identified in **Section 5.0** will reduce this impact to a less than significant level.

Truck Delivery/Loading Dock Noise Effects

As noted above, noise measurements taken at a typical loading dock were observed to be 60 dB at a distance of 50 feet from the noise source (AES, 2003). Because this observed noise level is well below the FHWA 67 dB exterior noise standard for sensitive receptors and the nearest sensitive receptors are located at least 1,800 feet from the proposed loading dock facilities, no significant noise effects associated with truck delivery and loading dock noise are anticipated.

On-Site Traffic Flow and Parking Lot Noise Effects

Parking lot activities, including vehicles arriving and departing, engines starting and stopping, car doors opening and closing, and busses idling, are predicted to generate noise levels of approximately 55 to 65 dB L_{eq} at a distance of 50 feet from the noise source (**Table 4.10-1**). The proposed parking areas are located approximately 1,800 feet from the nearest sensitive receptor located south of the Madera site. Because air absorbs noise at the rate of 3 to 6 dB per doubling of distance, noise generated within the parking lot would attenuate at least 18 dB to 36 dB before reaching the nearest off-site receptor (ONCC, 2000). As a result, noise from on-site traffic flow and parking activities is considered less than significant.

Off-Site Traffic Noise Effects

Development of Alternative A would result in changes in traffic noise levels as identified in **Table 4.10-5**. According to this table, project-related traffic noise is predicted to increase an average of 0.1 dB over existing conditions. Additionally, an analysis of the closest sensitive receptor to the south on Golden State Boulevard shows that project-related traffic will result in an increase of 1.5 dB at this location. Both of these estimated noise increases are below FICON significance criteria. Off-site traffic noise effects would therefore be less than significant.

HAZARDOUS MATERIALS*Existing Sources*

Analytical Environmental Services conducted a Phase I Environmental Site Assessment (ESA) for the Madera site in May 2005 (**Appendix P**). An update to the Phase I ESA was conducted in July 2007 and November 2008 (**Appendix P**). All Recognized Environmental Conditions (RECs) that were identified in the Phase I update were addressed as noted in **Section 3.10**. After the RECs were addressed a subsequent Limited Phase II Soil Investigation was conducted in November 2008. Soil samples were analyzed for total petroleum hydrocarbons as gasoline (TPH-g) diesel fuel (TPH-d), motor/waste oil (TPH-mo), benzene, toluene, ethylbenzene, xylenes (BTEX), and chlorinated pesticides. Limited sampling for polychlorinated biphenyls (PCBs) was conducted next to several pole mounted transformer located on the site. As noted in **Section 3.10**, soil sampling data from samples collected from the Madera site indicate non detectable levels of chlorinated pesticides, polychlorinated biphenyls (PCBs), diesel, gasoline, and gasoline constituents. Several detections of motor oils were found, however, these detections are limited in extent and do not pose a threat to human health. Therefore, a less than significant impact would occur. Nonetheless, excavation and disposal of stained soils is included in **Section 5.2.9** as mitigation.

Construction

The possibility exists that undiscovered contaminated soil and/or groundwater exists on the Madera site. This possibility is slight given past uses of the Madera site have been limited to

agricultural uses. This risk is further reduced given no detections of hazardous materials in soils as summarized **Section 3.10** and documented in the Limited Phase II Soil Assessment (**Appendix X**). Although not anticipated, construction personnel could encounter contamination during construction-related earth moving activities. This could pose a risk to human health and/or the environment. The unanticipated discovery of contaminated soil and/or groundwater could have a potentially significant effect on construction workers or to the public.

During grading and construction the use of hazardous materials would include substances such as gasoline, diesel fuel, motor oil, hydraulic fluid, solvents, cleaners, sealants, welding flux, various lubricants, paint, and paint thinner. These materials would be used for the operation and maintenance of equipment, and directly in the construction of the facilities. Fueling and oiling of construction equipment would be performed daily. The most likely possible hazardous materials releases would involve the dripping of fuels, oil, and grease from construction equipment. The small quantities of fuel, oil, and grease that may drip from properly maintained vehicles would occur in relatively low toxicity and concentration. No long-term effects to the soil or groundwater would occur. Typical construction management practices limit and often eliminate the effect of such accidental releases including the use of storage areas that are not exposed to rainwater. An accident involving a service or refueling truck would present the worst-case scenario for the release of a hazardous substance. Depending on the relative hazard of the hazardous material, if a spill of significant quantity were to occur, the accidental release could pose a hazard to construction employees as well as to the environment. This impact is potentially significant. The U.S. Environmental Protection Agency (USEPA) National Pollutant Discharge Elimination System (NPDES) storm water program would require coverage under the Phase II General Permit for Storm Water Discharges from Construction Activities (Construction General Permit). The USEPA requires the preparation of a Stormwater Pollution Prevention Plan (SWPPP) whenever more than five acres are disturbed during construction activities. The SWPPP is a requirement that ensures overall Clean Water Act (CWA) compliance for both hazardous materials and sediment laden stormwater that could potentially affect the environmental quality of the site. Surface water impacts are discussed further in the Water Quality Section (**Section 4.3**). Mitigation measures intended to reduce potential surface water quality impacts are provided in **Section 5.2.2** including the preparation of a Spill Prevention Control and Countermeasure Plan (SPCC). Through the preparation of a SWPPP, the Tribe would ensure potential hazardous materials impacts from construction activity are reduced to less than significant levels. Additional hazardous materials mitigation is included in **Section 5.2.9** to reduce potential impacts to less than significant levels.

Operation

Should on-site wastewater treatment occur, the wastewater treatment plant would require the delivery, storage, and use of hazardous materials, particularly the use of sodium hypochlorite (bleach) and citric acid (HydroScience, 1999, in AES, 2002). Sodium hypochlorite is used in

wastewater treatment, in household laundry detergents, and in photochemical and pulp and paper industries. Sodium hypochlorite ingestion can cause severe gastrointestinal corrosion; inhalation can cause pulmonary edema. Citric acid is used in hair products, household cleaners, and in electroplating, printing, and machinery manufacturing industries. For the proposed wastewater treatment plant, a weak (5% strength) solution of sodium hypochlorite would be used to clean or inhibit biogrowth in the immersed membranes used to filter out solids. Sodium hypochlorite would be stored in a 55-gallon drum, within a chemical spill containment area inside the wastewater treatment plant building. A citric acid solution is periodically used to remove buildup of inorganic materials. Citric acid is purchased in dry form in 40-pound sacks. A 50-gallon mixing tank inside the wastewater treatment plant would be used to prepare the liquid citric acid solution. Both the sodium hypochlorite and the citric acid are pumped directly to a chemical dip tank when required for use.

The storage and use of swimming pool chemicals would be necessary for operation of the hotel swimming pool facility. Generally, liquid chlorine and liquid muriatic or dry granular sodium bisulfate are the primary pool chemicals that would be utilized. These chemicals would be transported to the hotel facility by a licensed transporter, contained within their approved containers, and would not be delivered in bulk form. These chemicals would be similar in form and amounts that would be used at a residential neighborhood. The pool chemicals would be contained within one gallon plastic bottles, or if granular products are used, 55-gallon drums. The materials would be stored within a locked, secured building and only used by qualified personnel, minimizing injury to human health and the environment. As such, no significant impacts resulting from the use, storage, and transportation of swimming pool chemicals are anticipated.

Project related use, transport, and storage of landscape chemicals (fertilizers and weed killer), would be limited to infrequent transport for use onsite. Although the transport of these materials would occur in relatively small amounts, their transport would be governed by federal and State laws to ensure proper transport occurs, thus minimizing injury to human health and the environment. Nevertheless, if not managed properly, the presence of landscape chemicals could pose a risk to employees and casino patrons.

Diesel fuel storage tanks will be needed for the operation of emergency generators provided for the casino, one emergency generator and one fire pump provided for the hotel, and one emergency generator provided for the wastewater treatment facility and human resources building. The generators will be operated according to the manufacturer's operating procedures. The transport of diesel fuel would not be routine and would thus not present a significant hazard to the public. Improper storage of diesel fuels could create a potentially significant risk of soil and groundwater contamination.

During operation of the facilities included under Alternative A, the majority of waste produced would be non-hazardous. The small quantities of hazardous materials that would be utilized would include motor oil, hydraulic fluid, solvents, cleaners, lubricants, paint, and paint thinner. These materials would be utilized for the operation and maintenance of the casino, emergency generators, and other project facilities. The amount and type of hazardous materials that would be generated are common to commercial sites and do not pose unusual storage, handling or disposal issues. A hazardous materials release could occur that would pose a hazard to human health or the environment if these materials are not stored, handled, or disposed of according to State, Federal, and manufacturer's guidelines. Such impacts can be mitigated through the use of less toxic alternatives capable of achieving the intended result as well as management techniques that ensures the lowest volume possible are stored onsite at any given time.

The amount and types of hazardous materials that would be stored, used, and generated during the operation of Alternative A could have a potentially significant impact to the environment and public if not managed properly. Mitigation is included in **Section 5.2.9** to reduce potential impacts to less than significant from the operation of Alternative A.

VISUAL RESOURCES

An area of urban development amidst the primarily undeveloped agricultural lands of the Madera site would represent a change to the viewshed and be visible from several public vantage points, including Road 23, Avenue 18, Golden State Boulevard, and State Route 99. Development in the area includes a gas station, a fast food restaurant, and a hotel development at the intersection of State Route 99 and Avenue 18½; a large commercial greenhouse and a large auto salvage facility adjacent to the northwest corner of the site; and the Madera Municipal Airport and various commercial and light industrial facilities about a mile to the south of the site. Thus, although agricultural and rural residential uses are prevalent in the area surrounding the Madera site, commercial uses and industrial development are present in the vicinity of the site. The existing commercial/industrial development would serve to reduce the intensity of the casino/hotel resort's visual impact on the area.

The casino/hotel resort has also been designed to reduce visual effects. An architectural rendition of the casino/hotel resort is shown in **Figure 2-2**. The proposed casino/hotel resort has been designed to avoid architectural features, such as the use of neon, which may be especially incompatible with a non-urban setting. Instead, the use of earth tones in paints and coatings, and native building materials such as stone have been utilized extensively in the project design. Architectural treatment incorporated into the various structures also serves to break up and soften the massing of the proposed buildings. In addition, landscape amenities have been incorporated into the project design to complement buildings and parking areas, including raised landscaped areas and plantings of trees and shrubs. Finally, no local or State-designated scenic corridors

would be affected by the implementation of Alternative A. Thus, effects to visual resources would be less than significant.

4.10.2 ALTERNATIVE B – REDUCED INTENSITY

NOISE

The Overview and Methodology presented in Alternative A apply to the noise discussion for Alternative B.

Construction Noise Effects

As with Alternative A, construction activities may result in short-term increases in the local ambient noise environment in excess of the FHWA 67 dB threshold of significance. While construction activities will be reduced in scale and likely occur during a shorter construction duration, noise generated by construction activities may be as loud as 88 dB. Although noise would attenuate between 9 dB and 18 dB, this may exceed the FHWA 67 dB threshold of significance. This is considered a significant effect. Mitigation measures identified in **Section 5.0** will reduce this impact to a less than significant level.

Mechanical Equipment Noise Effects

The building layout for Alternative B is similar to that of Alternative A but on a reduced scale. While there is considerable distance between the proposed development and the nearest sensitive receptors, mechanical equipment noise is highly variable and may exceed the FHWA significance criteria of 67 dB. Mitigation measures identified in **Section 5.0** will reduce this impact to a less than significant level.

Truck Delivery/Loading Dock Noise Effects

The building layout for Alternative B is similar to that of Alternative A but on a reduced scale. As noted above, the observed noise levels for typical loading dock activities are well below the FHWA 67 dB exterior noise standard for sensitive receptors and sensitive receptors are located at least 1,800 feet from the proposed facilities. Therefore, no significant noise consequences are identified for this aspect of the project.

On-Site Traffic Flow and Parking Lot Noise Effects

The proposed parking layout proposed for Alternative B is similar to that of Alternative A but on a reduced scale. As with Alternative A, parking lot noise from Alternative B would attenuate at least 18 dB to 36 dB before reaching the nearest off-site receptor (ONCC, 2000). As a result, on-site traffic flow and parking lot noise effects would be less than significant.

Off-Site Traffic Noise Effects

Development of Alternative B would result in changes to traffic noise levels similar to those of Alternative A. It is estimated that project-related traffic noise would result in a slight increase (less than 0.1dB) over existing conditions. Additionally, an analysis of the closest sensitive receptor on Golden State Boulevard shows that worst case project-related traffic would result in an increase of no more than 1.5 dB at this location (**Table 4.10-6**). Both of these estimated noise increases are below FICON significance criteria. Off-site traffic noise effects would therefore be less than significant.

TABLE 4.10-6
ALTERNATIVE B PREDICTED NOISE LEVELS
FOR YEAR 2010 (dBA)

Receptor	2010 No Project Leq	2010 Plus Project Leq	2010 No Project vs. 2010 Plus Project (Difference)
Madera Site	55.2	55.2	0.0
Residential Receptor	63.3	64.8	1.5

SOURCE: VRPA Technologies, 2008.

HAZARDOUS MATERIALS

Existing Sources

Refer to **Section 3.10.2** for existing conditions and **Section 4.10.1** above for on-site sources, as it pertains to hazardous materials. As noted in **Section 4.10.1**, a less than significant impact would result. Nonetheless, excavation and disposal of stained soils is included in **Section 5.2.9** as mitigation.

Construction

Potentially significant impacts resulting from Alternative B are similar to those described under Alternative A. However, potentially significant impacts from construction activities would be on a smaller scale due to the reduced size of Alternative B. Mitigation to reduce threats to water quality from construction related hazardous materials is included within **Section 5.2.2**.

Additional hazardous materials mitigation is included in **Section 5.2.9**. The mitigation measures are intended to reduce potential impacts to a less than significant level.

Operation

The amount and type of hazardous materials that would be stored, used, and generated during operation of Alternative B would be the similar to those of Alternative A. This could have a potentially significant impact to the environment and public, although on a smaller scale than Alternative A. Refer to **Section 4.10.1** for a discussion of hazardous materials that would be

stored, used, and generated during operation of Alternative B. Mitigation has been included within **Section 5.2.10** to reduce potential impacts to a less than significant level.

VISUAL RESOURCES

The impacts on the viewshed by Alternative B would be similar, although lessened due to the reduced intensity program and absence of a hotel, when compared with Alternative A. The removal of the hotel, in particular, would lessen the visual impact of the developments when viewed from a distance, since the Alternative A hotel is proposed to be much higher in elevation than the casino. This is a less than significant impact.

4.10.3 ALTERNATIVE C – NON-GAMING USE

NOISE

The Overview and Methodology presented in Alternative A apply to the noise discussion for Alternative C.

Construction Noise Effects

Similar to Alternative A, construction activities may result in short-term increases in the local ambient noise environment in excess of the FHWA 67 dB threshold of significance. While construction activities will be reduced in scale and would likely occur during a shorter construction duration, noise levels may be as loud as 88 dB. Although noise generated by construction activities would attenuate between 9 dB and 18 dB, this may exceed the FHWA 67 dB threshold of significance. This is considered a significant effect. Mitigation measures identified in **Section 5.2.9** will reduce this impact to a less than significant level.

Mechanical Equipment Noise Effects

The location of the proposed development on the Madera site for Alternative C is similar to that of Alternative A but with a different layout and reduced development footprint. As a result, the distance from on-site mechanical equipment to the nearest off-site sensitive receptor would be similar to that of Alternative A. While there is considerable distance between the proposed development and the nearest sensitive receptors, mechanical equipment noise is highly variable and may exceed the FHWA significance criteria of 67 dB. Mitigation measures identified in **Section 5.0** will reduce this impact to a less than significant level.

Truck Delivery/Loading Dock Noise Effects

The location of the proposed development on the Madera site for Alternative C is similar to that of Alternative A but with a different layout and reduced development footprint. As a result, truck delivery and loading dock noise effects would be similar to those described under Alternative A. As noted above, the observed noise levels for typical loading dock activities are well below the FHWA 67 dB exterior noise standard and sensitive receptors are located at least 1,800 feet from

the proposed facilities. Therefore, no significant noise consequences are identified for this aspect of the project.

On-Site Traffic Flow and Parking Lot Noise Effects

The parking areas proposed for Alternative C are in a similar location to those described under Alternative A. As with Alternative A, parking lot noise from Alternative C would attenuate approximately 18 dB to 36 dB before reaching the nearest off-site receptor approximately 1800 feet away. As a result, on-site traffic flow and parking lot noise effects are considered to be less than significant.

Off-Site Traffic Noise Effects

Development of Alternative C would result in changes in traffic noise levels similar, but lower than those of Alternative A. It is estimated that project-related traffic noise would result in an increase of 0.7 dB over existing conditions. Additionally, an analysis of the closest sensitive receptor on Golden State Boulevard shows that worst case project-related traffic would result in an increase of no more than 1.7 dB at this location (**Table 4.10-7**). Both of these estimated noise

TABLE 4.10-7
ALTERNATIVE C - PREDICTED NOISE
LEVELS FOR YEAR 2010 (dBA)

Receptor	2010 No Project L_{eq}	2010 Plus Project L_{eq}	2010 No Project vs. 2010 Plus Project (Difference)
Madera Site	58.2	58.9	0.7
Residential Receptor	63.3	64.8	1.5

SOURCE: VRPA Technologies, 2008.

increases are below FICON significance criteria. Off-site traffic noise effects would therefore be less than significant.

HAZARDOUS MATERIALS

Existing Sources

All RECs identified in the Phase I ESA were corrected and no hazardous materials remain on-site. Additionally, the Phase II found no evidence of residual levels of contamination (**Appendix X**). Refer to **Section 3.10.2** for existing conditions that were identified in the Phase I ESA and Phase II. Refer to the hazardous materials discussion in **Section 4.10.1** for existing sources, as it pertains to hazardous materials. As noted in **Section 4.10.1**, a less than significant impact would result. Nonetheless, excavation and disposal of stained soils is included in **Section 5.2.9** as mitigation.

Construction

Potentially significant impacts resulting from Alternative C are similar to those described under Alternative A. However, potentially significant impacts would be on a smaller scale due to the reduced size of Alternative C. Mitigation has been included within **Section 5.2.9** to reduce the impacts to less than significant level.

Operation

The amount and type of hazardous materials that would be stored, used, and generated during operation of Alternative C would be the similar to those of Alternative A. This could have a potentially significant impact to the environment and public, although on a smaller scale than Alternative A. Refer to **Section 4.10.1** for a discussion of hazardous materials that would be stored, used, and generated during operation of Alternative C. Mitigation has been included within **Section 5.2.10** to reduce potential impacts to a less than significant level.

VISUAL RESOURCES

The impacts on the viewshed by Alternative C would be similar, but lessened when compared with Alternative A due largely to the absence of a hotel. The design of the commercial developments would be attractive but probably less architecturally elaborate when compared with that of Alternative A. This is a less than significant impact.

4.10.4 ALTERNATIVE D – NORTH FORK LOCATION

NOISE

The Overview and Methodology presented in Alternative A apply to the noise discussion for Alternative D.

Construction Noise Effects

Construction activities may result in short-term increases in the local ambient noise environment in excess of the FHWA 67 dB threshold of significance. While construction activities will be reduced in scale and likely occur during a shorter construction duration when compared to those of Alternatives A through C, noise generated by construction activities would be as loud as 88 dB and exceed the FHWA 67 dB threshold of significance. This is considered a significant effect. Mitigation measures identified in **Section 5.0** will reduce this impact to a less than significant level.

Mechanical Equipment Noise Effects

Mechanical equipment noise levels can be highly variable and it is assumed that noise levels from this equipment will exceed the significance criteria for the sensitive receptors located on the

North Fork site. This is considered a significant effect. Mitigation measures identified in **Section 5.0** will reduce this impact to a less than significant level.

Truck Delivery/Loading Dock Noise Effects

As noted above, noise measurements taken at a typical loading dock were observed to be 60 dB at a distance of 50 feet from the loading dock (AES, 2003). Because this observed noise level is well below the FHWA 67 dB exterior noise standard for sensitive receptors, no significant noise consequences are identified for this aspect of the project.

On-Site Traffic Flow and Parking Lot Noise Effects

Parking lot activities, including vehicles arriving and departing, engines starting and stopping, car doors opening and closing, and busses idling, are predicted to generate noise levels of approximately 55 to 65 dB L_{eq} at a distance of 50 feet from the noise source (**Table 4.10-4**). The proposed parking areas would be located within 100 feet of the nearest on-site sensitive receptor. However, because this observed noise level is well below the FHWA 67 dB exterior noise standard for sensitive receptors, no significant noise consequences are identified for this aspect of the project. As a result, on-site traffic flow and parking lot noise effects would be less than significant.

Off-Site Traffic Noise Effects

Development of Alternative D would result in changes in traffic noise levels as identified in **Table 4.10-8**. According to this table, project-related traffic noise level increases are predicted to increase an average of 4.5 dB over existing conditions. This estimated noise increase is below FICON significance criteria. Off-site traffic noise effects would therefore be less than significant.

TABLE 4.10-8
ALTERNATIVE D PREDICTED NOISE LEVELS
FOR YEAR 2010 (dBA)

Receptor	2010 No Project L_{eq}	2010 Plus Project L_{eq}	2010 No Project vs. 2010 Plus Project (Difference)
North Fork Site	38.7	43.2	4.5

SOURCE: VRPA Technologies, 2008.

HAZARDOUS MATERIALS

Existing Sources

Analytical Environmental Services conducted a Phase I Environmental Site Assessment (ESA) for the North Fork site in September 2005 (**Appendix P**). The Phase I ESA identified one site near the North Fork site that was listed on several regulatory agency databases for hazardous

materials releases. The site is located down gradient with respect to the anticipated groundwater flow direction from the North Fork Rancheria. No hazardous materials contamination was found on the North Fork site. Implementation of this Alternative will not cause the environment or public to be affected by known hazardous materials currently on the North Fork site. Refer to **Section 3.10.2** for existing conditions, as it pertains to hazardous materials on the North Fork site.

Water from one of domestic wells on the North Fork site has been reported to have an unpleasant taste and odor and a visible oily sheen on the surface that could signify an existing environmental condition on the North Fork site. Although this sheen has not been recently verified, it could be a sign of a existing source of contamination, which could result in a potentially significant effect either during construction or operation. Mitigation is included in **Section 5.2.9** to reduce this potentially significant impact to a less than significant level.

Construction

Under Alternative D, substantially less construction would take place than for the other development alternatives, and the potential for impacts to workers would therefore be lessened. Nonetheless, a potentially significant impact would remain due to the risk of disturbing unknown hazardous materials during construction. Mitigation has been included within **Section 5.2.9** to reduce the impact to a less than significant level.

Operation

The amount and type of hazardous materials that would be stored, used, and generated during operation of Alternative D would be the similar to those of Alternative A. This could have a potentially significant impact to the environment and public, although on a smaller scale than Alternative A. Refer to **Section 4.10.1** for a discussion of hazardous materials that would be stored, used, and generated during operation of Alternative D. Mitigation has been included within **Section 5.2.10** to reduce potential impacts to a less than significant level.

VISUAL RESOURCES

An area of urban development in the otherwise undeveloped rural residential lands of the North Fork site would represent a change to the viewshed, but would not be visible from any public vantage points. In addition, no local or State-designated scenic corridors would be affected by the implementation of Alternative D. Thus, effects to visual resources would be less than significant.

4.10.5 ALTERNATIVE E – NO ACTION

NOISE

The No Action Alternative would result in a continuation of existing uses on the Madera and North Fork sites. As such, the No Action Alternative would not increase the ambient noise

environment through construction or operation of facilities. No new significant effect would result under the No Action Alternative.

HAZARDOUS MATERIALS

There is no reportable hazardous materials contamination in or near the Madera or North Fork sites. Existing uses on the Madera and North Fork sites would continue under the No Action Alternative. No effects from hazardous materials would result from the No Action Alternative.

VISUAL RESOURCES

No urban transformation of the Madera site or North Fork site would take place under Alternative E. Existing land uses would continue into the foreseeable future. No visual effects would result.

4.11 CUMULATIVE EFFECTS

4.11.1 INTRODUCTION

This cumulative effects analysis broadens the scope of analysis to include effects beyond those solely attributable to the direct effects of the alternatives. Cumulative effects are defined as the effects:

(O)n the environment which result from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions regardless what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time (40 CFR Sec. 1508.7).

The analysis in this section expands the geographic and temporal borders to include the effects on specific resources, ecosystems, and human communities that occur incrementally in conjunction with other actions, projects and trends. The purpose of cumulative effects analysis, as stated by the Council on Environmental Quality (CEQ) “is to ensure that federal decisions consider the full range of consequences” (CEQ, 1997:3).

The cumulative analysis begins with: 1) identifying past, present, and future actions and projects in association with the status of the resources, ecosystems, and human communities that may be affected, and 2) defining geographic borders and time frame of the analysis.

The status of affected resources is based upon the information provided in **Section 3.0** of this document, from specific resource studies that have been undertaken for the alternatives, and from additional review and analysis.

The geographic boundaries of the cumulative effects zone have been determined by the nature of the resources affected and the distance that effects may travel. As an example, increased sedimentation of waterways that result from a project is limited to the watershed in which they occur. As a result, it is only necessary to examine incremental effects within that watershed. Air quality emissions from a project, however, travel over far greater distances and therefore necessitate analysis on a county, air basin, or regional level. For this analysis, the geographic boundary of the cumulative effects zone is generally that of Madera County, although with many resources (water, biological etc.) smaller boundaries are used.

The time frame of the cumulative effects analysis extends to 2030. For many resources, information is unavailable to extend meaningful analysis to 2030; however, attempts have been made to provide all relevant information. The year 2030 was selected as the year for cumulative analysis based on a request from Caltrans to analyze cumulative effects to this time period. AES consulted with Madera

County, the City of Madera, and the City of Chowchilla during preparation of the traffic study for this EIS specifically with respect to the scope of cumulative analysis.

As recommended by CEQ's *Considering Cumulative Effects*, not all potential cumulative effects issues have been included in this EIS; only those that are considered to be relevant or consequential have been discussed in depth (CEQ, 1997:12).

PROJECTED GROWTH

The Madera County Transportation Commission (MCTC) traffic model projects growth according to traffic analysis zones (TAZs). **Figure 4.11-1** presents the TAZs in close proximity to both the Madera site and the North Fork site. **Table 4.11-1** presents the corresponding growth projections for the associated TAZs for each general employment sector for the Madera site while **Table 4.11-2** presents this information for the North Fork site. The MCTC traffic model projects to the year 2025. Therefore, the projected number of employees is calculated based on square footage and the acreage of a parcel of land through 2025 to maximize accuracy. Based on that calculation, the projected number of employees is presented in **Tables 4.11-1** and **4.11-2**. Traffic volume projections were further calculated to 2030 based on the 2025 model volumes and expected trends at the request of Caltrans.

LIST OF OTHER ACTIONS AND PROJECTS

Transportation Projects

Several major projects are planned in the future that may affect traffic conditions near the Madera site. These projects would be completed regardless of the EIS alternatives.

Caltrans has two freeway improvement projects in process on SR-99 in the vicinity of the Madera site. These improvements are as follows:

- Avenue 16 to Avenue 17 – four-lane freeway expanded to six-lane freeway and relocation of Avenue 16 Interchange
- Avenue 17 to Avenue 21 - four-lane freeway expanded to six-lane freeway

The City of Madera has one roadway improvement project along Airport Drive between Avenue 17 and Yeager Road that would re-stripe the roadway to form four lanes.

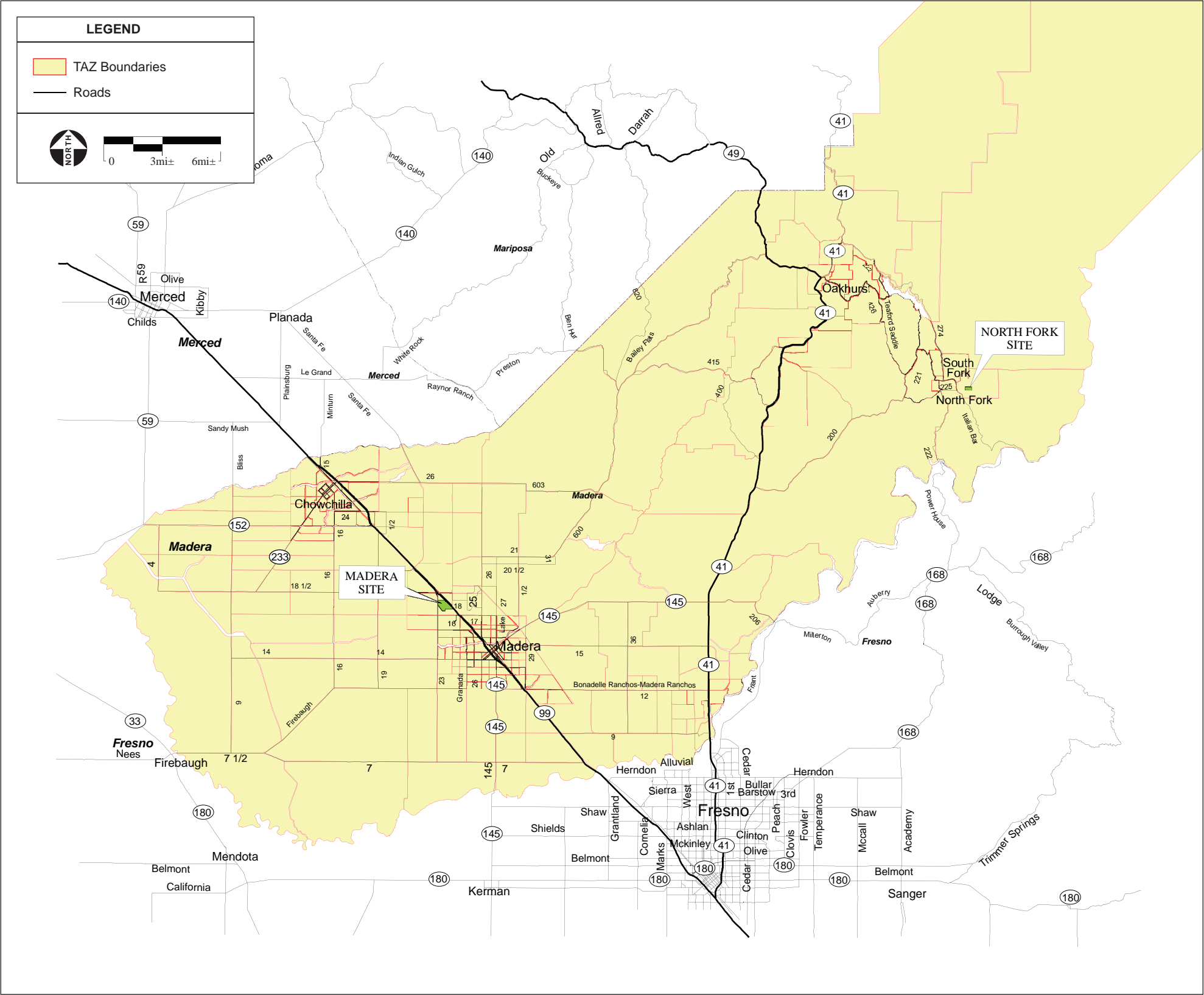
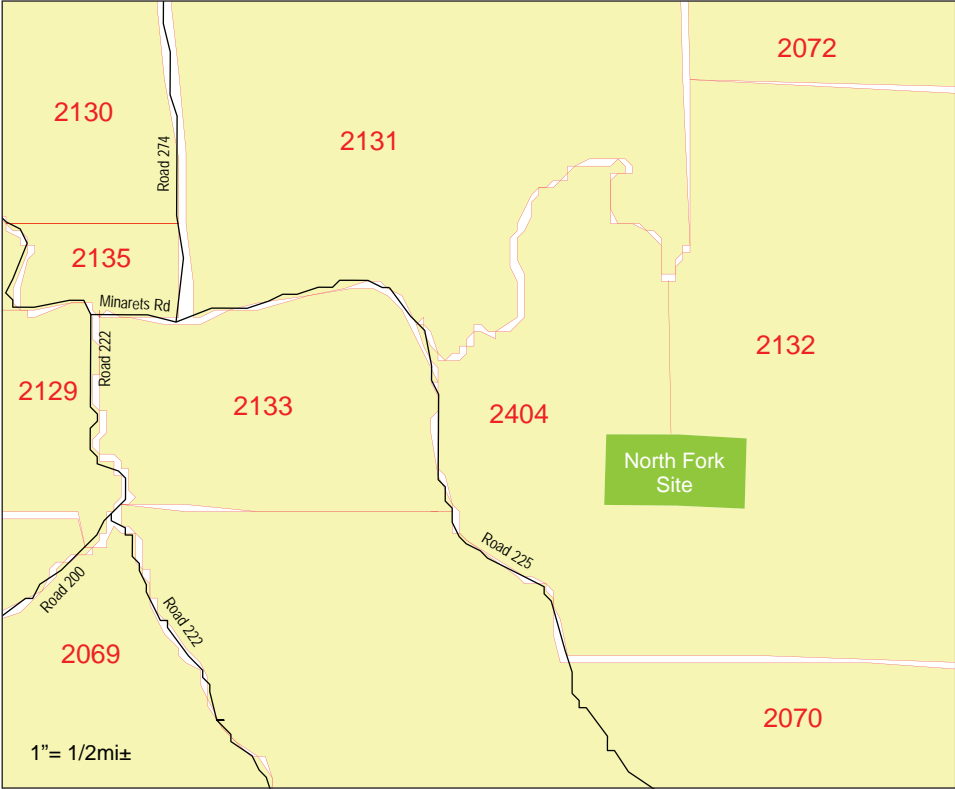
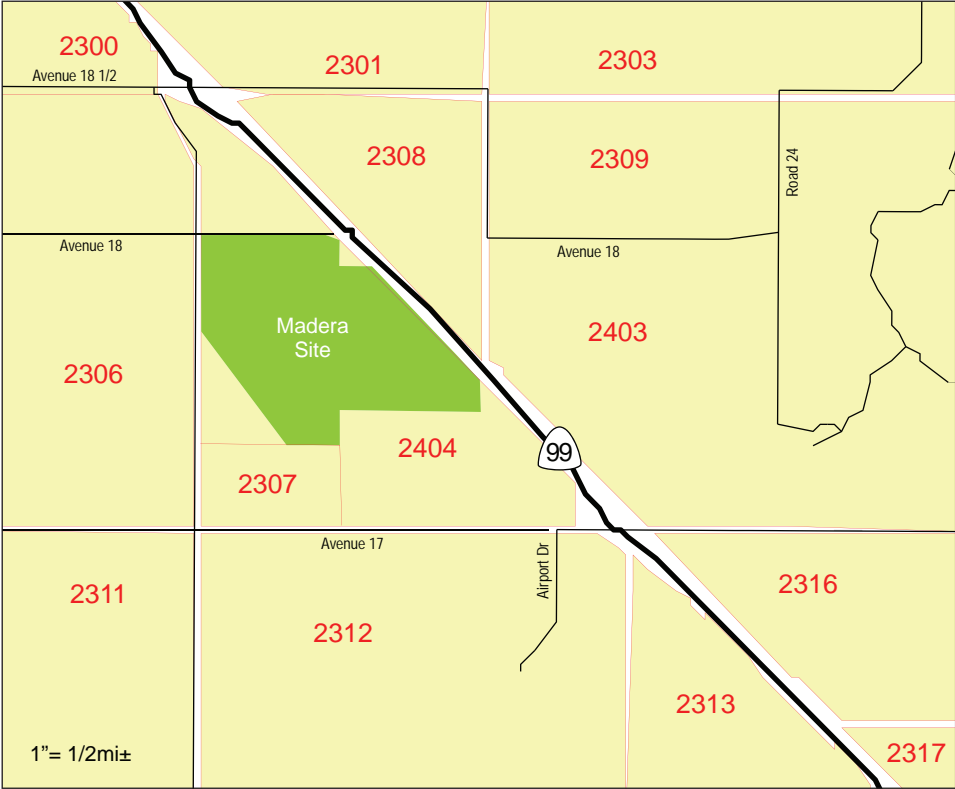


Figure 4.11-1
Project Area Traffic Analysis Zones

TABLE 4.11-1
PROJECTED GROWTH SURROUNDING THE MADERA SITE

TAZ	Year	Type of Employees								Total
		SFDU	MFDU	RETEMP	OFFEMP	MANEMP	OTHEMP	GOVEMP	EDUEMP	
20550	2000	10	0	0	0	0	0	0	0	10
	2025	10	0	0	0	0	0	0	0	10
	Diff + (-)	0	0	0	0	0	0	0	0	0
2300	2000	55	52	20	0	40	110	0	0	277
	2025	55	52	20	0	40	200	0	0	367
	Diff + (-)	0	0	0	0	0	90	0	0	90
2301	2000	18	0	0	0	110	15	0	0	143
	2025	18	0	0	0	110	75	0	0	203
	Diff + (-)	0	0	0	0	0	60	0	0	60
2303	2000	161	0	0	0	0	5	0	0	166
	2025	161	0	0	0	0	55	0	0	216
	Diff + (-)	0	0	0	0	0	50	0	0	50
2306	2000	23	0	5	0	0	10	0	0	38
	2025	23	0	5	0	0	60	0	0	88
	Diff + (-)	0	0	0	0	0	50	0	0	50
2307	2000	19	0	5	0	0	65	0	0	89
	2025	19	0	55	0	0	110	0	0	184
	Diff + (-)	0	0	50	0	0	45	0	0	95
2308	2000	2	0	0	0	95	180	0	0	277
	2025	2	0	0	0	95	280	0	0	377
	Diff + (-)	0	0	0	0	0	100	0	0	100
2309	2000	861	0	10	15	0	40	0	0	926
	2025	861	0	10	10	200	100	0	0	1,181
	Diff + (-)	0	0	0	(5)	200	60	0	0	255
2311	2000	1	4	0	0	0	20	0	0	25
	2025	1	4	0	0	0	70	0	0	75
	Diff + (-)	0	0	0	0	0	50	0	0	50
2312	2000	0	0	5	25	110	80	10	0	230
	2025	0	0	105	270	610	180	160	0	1,325
	Diff + (-)	0	0	100	245	500	100	150	0	1,095
2313	2000	26	48	175	25	450	450	0	0	1,174
	2025	26	698	390	270	650	650	200	0	2,884
	Diff + (-)	0	650	215	245	200	200	200	0	1,710
2316	2000	269	4	25	15	0	190	0	0	503
	2025	269	4	75	10	0	290	0	0	648
	Diff + (-)	0	0	50	(5)	0	100	0	0	145
2317	2000	33	0	0	0	0	0	0	0	33
	2025	280	0	85	500	0	46	0	0	911
	Diff + (-)	247	0	85	500	0	46	0	0	878
2403	2000	0	0	0	0	0	0	0	0	0
	2025	0	0	1198	0	0	358	0	0	1,556
	Diff + (-)	0	0	1198	0	0	358	0	0	1556

NOTES: The Madera Site is located in TAZ 2307.

SFDU = single-family dwelling unit, MFDU = multi-family dwelling unit, RETEMP = retail employee, OFFEMP = office employee, MANEMP = manufacturing employee, OTHEMP = other employee, GOVEMP = government employee, and EDUEMP = education employee.

Employee counts are based on the square footage or acreage.

Diff + (-) = the difference in employee numbers between the year 2000 and 2025

SOURCE: TPG Consulting, 2006; AES, 2006.

TABLE 4.11-2
PROJECTED GROWTH SURROUNDING THE NORTH FORK SITE

TAZ	Year	Type of Employee								Total
		SFDU	MFDU	RETEMP	OFFEMP	MANEMP	OTHEMP	GOVEMP	EDUEMP	
2069	2000	270	6	5	0	10	0	120	0	411
	2025	435	80	5	0	20	20	125	0	685
	Diff + (-)	165	74	0	0	10	20	5	0	274
2070	2000	153	0	5	0	0	0	0	0	158
	2025	175	0	0	0	0	0	0	0	175
	Diff + (-)	22	0	(5)	0	0	0	0	0	17
2072	2000	128	22	5	0	0	0	0	0	155
	2025	130	25	5	0	0	20	0	0	180
	Diff + (-)	2	3	0	0	0	20	0	0	25
2129	2000	270	4	5	10	25	40	0	0	354
	2025	450	125	10	10	75	100	50	0	820
	Diff + (-)	180	121	5	0	50	60	50	0	466
2310	2000	21	0	0	0	0	0	15	0	36
	2025	50	0	0	0	0	25	100	0	175
	Diff + (-)	29	0	0	0	0	25	85	0	139
2131	2000	52	2	5	0	20	20	5	0	104
	2025	701	0	20	5	60	150	100	0	1,036
	Diff + (-)	649	(2)	15	5	40	130	95	0	932
2132	2000	168	0	0	0	10	35	0	0	213
	2025	300	0	10	0	10	100	0	0	420
	Diff + (-)	132	0	10	0	0	65	0	0	207
2133	2000	78	50	25	10	15	10	0	100	288
	2025	120	30	45	10	15	50	0	120	390
	Diff + (-)	42	(20)	20	0	0	40	0	20	80
2134	2000	28	0	10	15	0	10	20	0	83
	2025	40	5	50	15	0	50	0	0	165
	Diff + (-)	12	5	40	0	0	40	(20)	0	77
2135	2000	5	0	20	10	0	0	75	20	130
	2025	10	0	40	10	0	0	4	20	84
	Diff + (-)	5	0	20	0	0	0	(71)	0	(46)

NOTES: The North Fork site is located in TAZ 2132.

SFDU = single-family dwelling unit, MFDU = multi-family dwelling unit, RETEMP = retail employee, OFFEMP = office employee, MANEMP = manufacturing employee, OTHEMP = other employee, GOVEMP = government employee, and EDUEMP = education employee.

Employee counts are based on the square footage or acreage.

Diff + (-) = the difference in employee numbers between the year 2000 and 2025.

SOURCE: TPG Consulting, 2006; AES, 2006.

Development Projects

The proposed developments discussed below are included in projected growth discussed in the following section and in the projected cumulative traffic volumes.

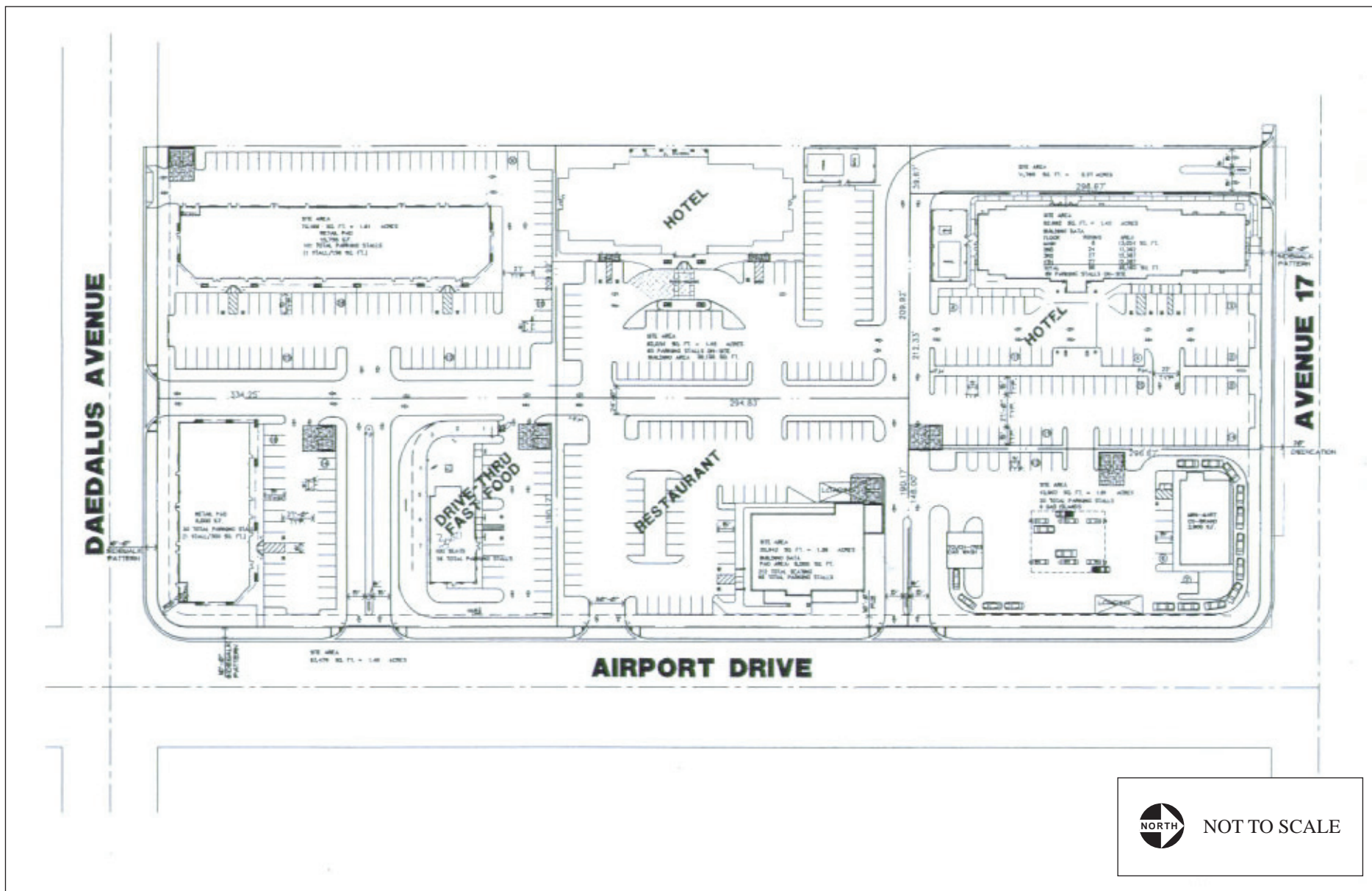
Commercial Development

Bratton Project. As shown in **Figure 4.11-2**, the recently approved development proposes a 3000 sf fast-food restaurant with drive-thru, an 8000 sf high-turnover sit-down restaurant, 24,755 sf of specialty retail, two 86-room hotels, and a 12-fueling position service station with a convenience market and car wash. The development is planned to be located south of Avenue 17 and to the west of Airport Drive.

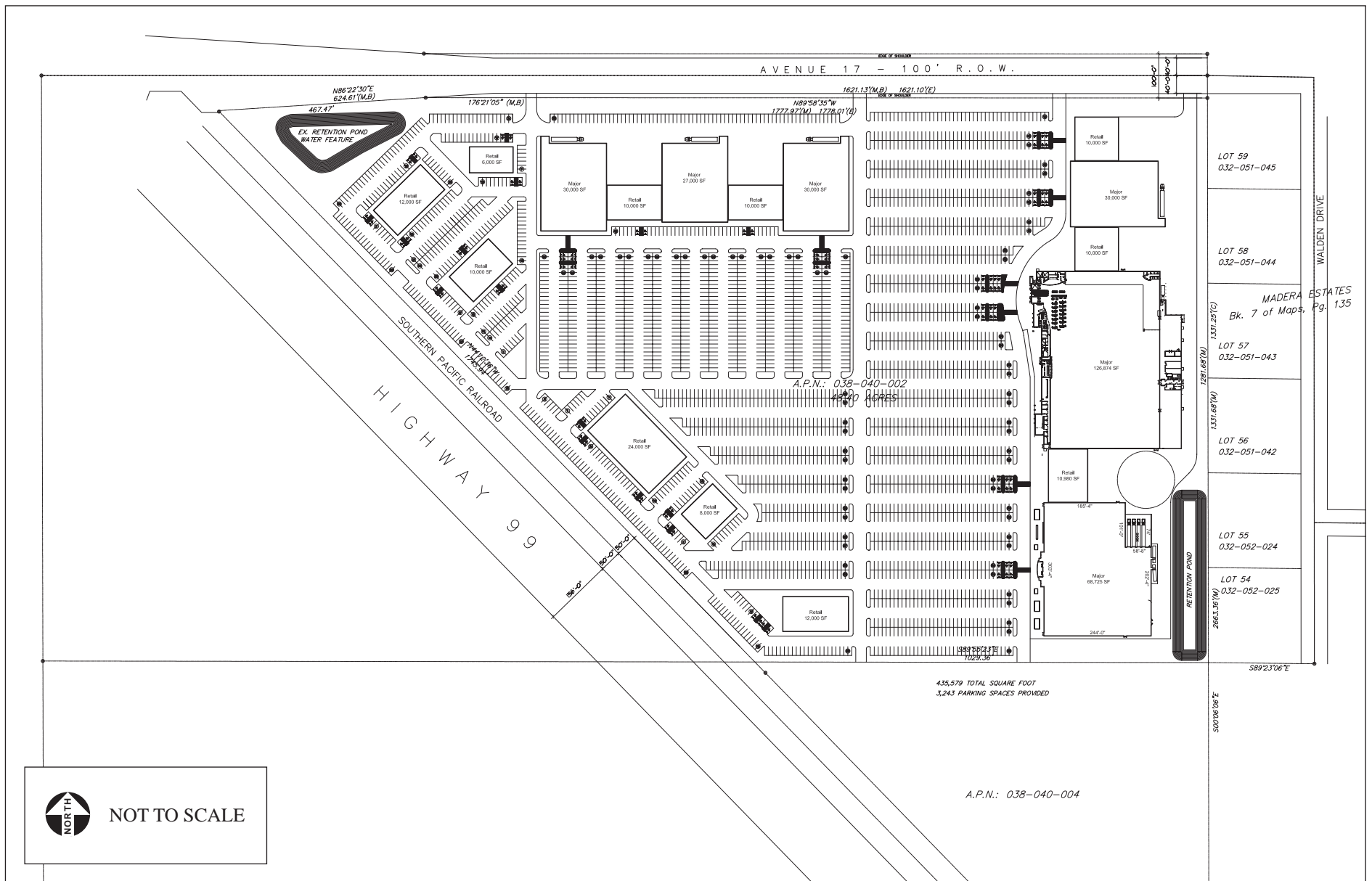
Madera Outlet Mall. An application for a general plan and specific plan amendment and rezoning has been filed for an approximately 100-acre site located north of Avenue 17 to the west of Airport Drive and Golden State Boulevard. The application filed with the City of Madera requests to revise the current general plan designation from Industrial to Commercial, expand the boundaries of Specific Plan Number 1 to include the property and to prezone the property for commercial use for the purpose of annexing and developing the property. According to the application, the property has the potential for approximately 500,000 to 600,000 square feet of commercial space. As shown in **Figure 4.11-3**, the property is currently planned for a 750,000 sf factory outlet center.

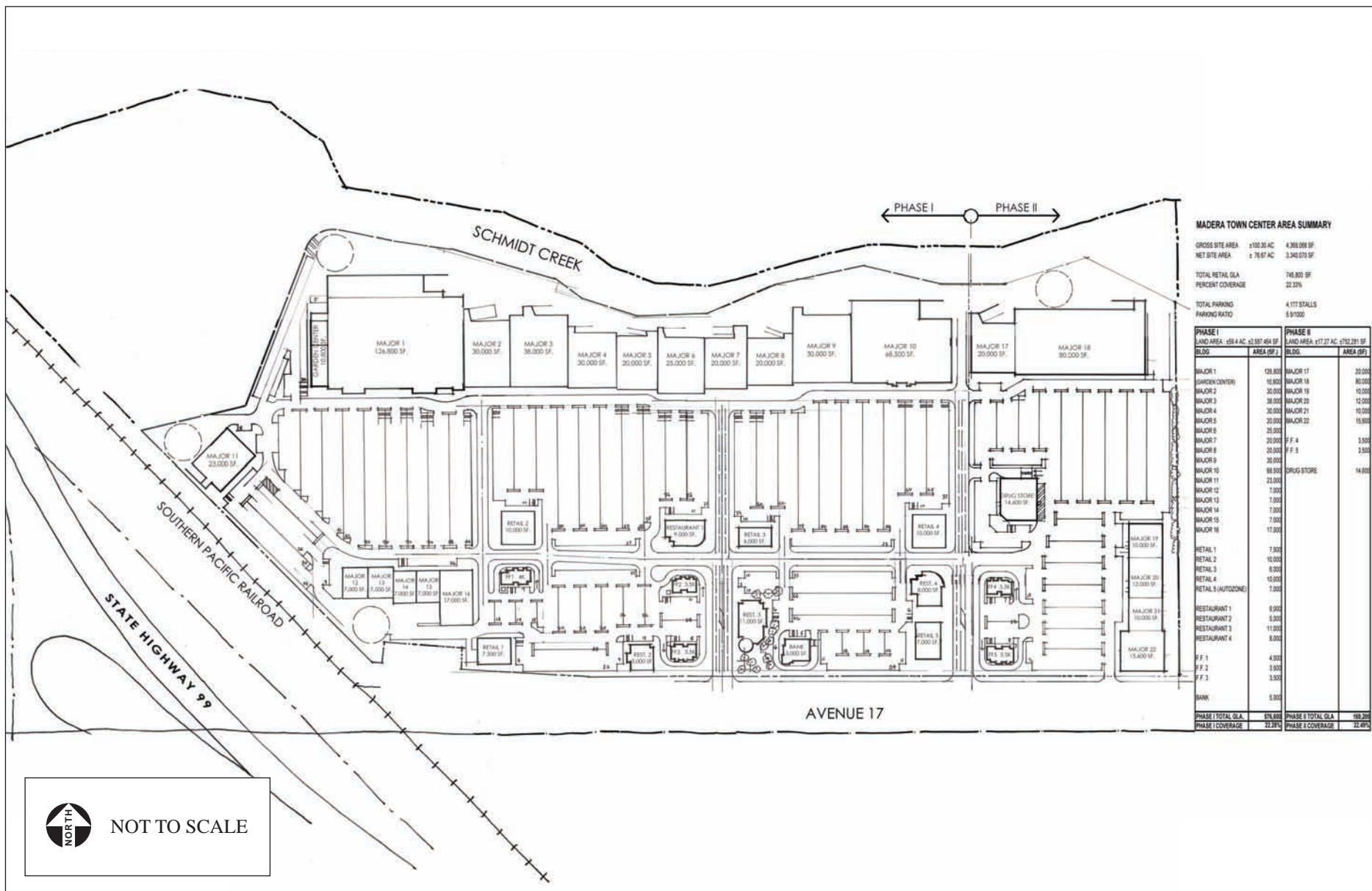
48-Acre Commercial Development. An application for a specific plan amendment and rezoning has been filed for an approximately 48-acre site located south of Avenue 17 to the east of SR-99 (**Figure 4.11-4**). The application filed with the City of Madera requests to expand the boundaries of Specific Plan Number 1 to include the property and to prezone the property for commercial development for the purpose of annexing and development. The property is located outside the City limits but has a general plan designation for service commercial uses. While no preliminary plans have been submitted or potential uses or clients identified, indications show that approximately 250,000 square feet of retail floor area can possibly be developed. The project is located in a key location at the extension point of public utilities with access and circulation to the Madera site from the south to Avenue 17.

Madera Town Center. As shown in **Figure 4.11-5**, the development entitled Madera Town Center is identified as a retail „power center’ with approximately 746,000 square feet of retail floor area planned for development. An amendment to the general plan, specific plan and rezoning has been approved for an approximately 100-acre site located north of Avenue 17 to the east of SR-99. According to the application filed with the City of Madera, the boundaries of the general and Specific Plan Number 1 would be expanded to include the project for commercial use development and annexation.









Feland/Zilkin Project. The approved development proposes to construct a 14-building, 221,000 sf multi-tenant shopping center located south of Avenue 16 and Home Depot Center, between North Schnoor and SR-99. The assumed completion date is 2008.

Madera Fairgrounds Commercial Project. The development proposes a 307,279 sf multi-tenant shopping center located south of West Cleveland Avenue, between Schnoor Avenue and SR-99 (**Figure 4.11-6**). The planned completion date is 2008.

Residential and Industrial Development

An extensive list of planned residential development projects was obtained from the City of Madera (City of Madera, 2008). These developments are included in the projected cumulative traffic volumes. **Figure 4.11-7** presents the location of the planned residential developments in the general vicinity of the Madera site. **Table 4.11-3** presents the planned residential developments in the City of Madera and their current development status. Many of these projects are under construction. The difference between the number of approved units and the number of building permits obtained is that amount of additional growth that may occur in future phases of development (Gonzales, 2005).

Table 4.11-4 presents the future planned residential developments in unincorporated Madera County and their current development status. These developments are currently undergoing review by the County. After receiving final map approval, the developer is able to obtain any permits necessary to construct the subdivision.

Madera Municipal Airport

Sam Scheider, Airport Operations Manager, was contacted in January 2006, regarding potential future growth projections for the Airport. AES was informed that their main emphasis is on improving their instrument approach capabilities and possibly an extension of the east/west runway by 500 feet but there are no general growth plans projected. The last runway expansion occurred in 1999 with an extension of the north/south runway (Scheider, 2008).

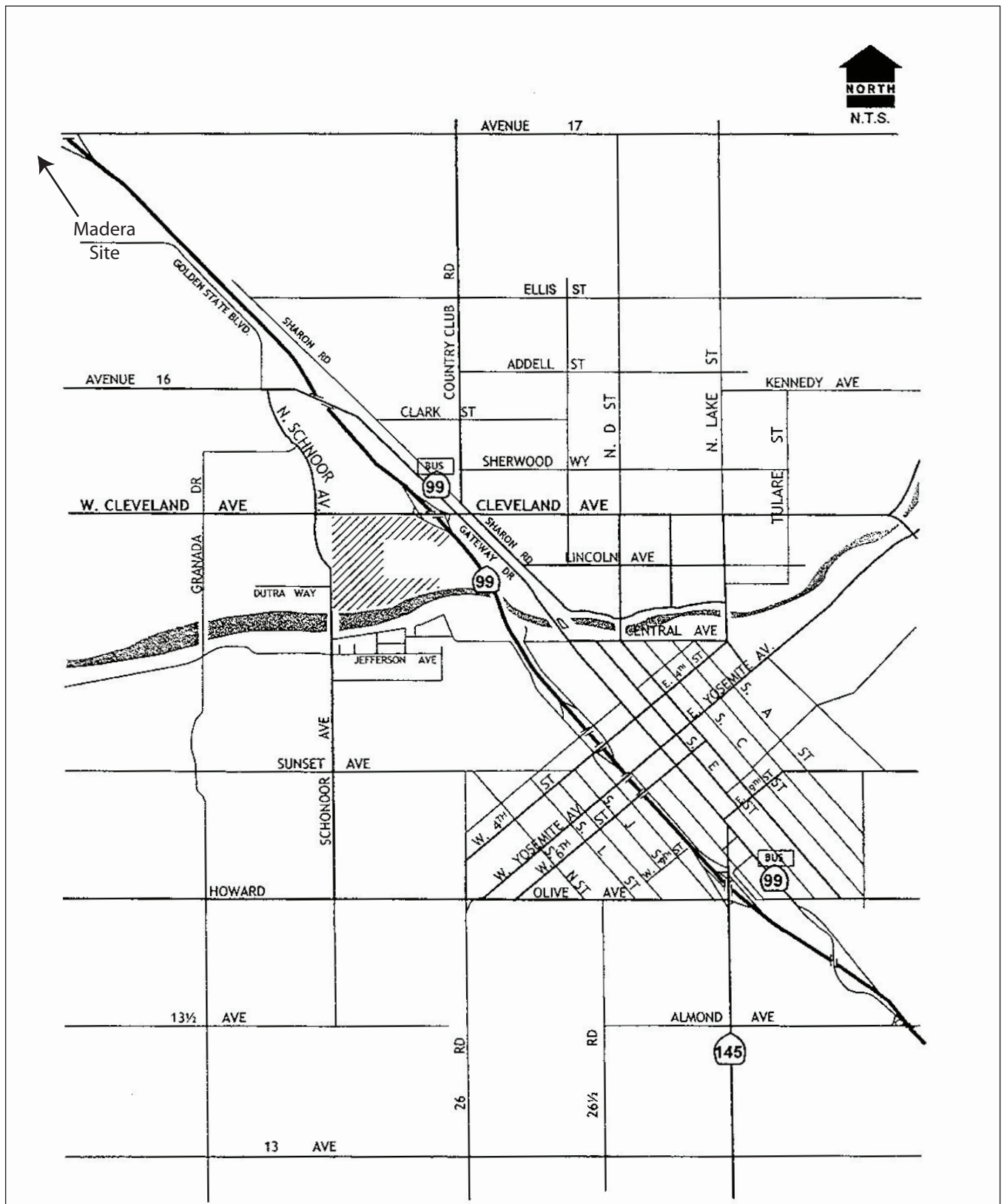
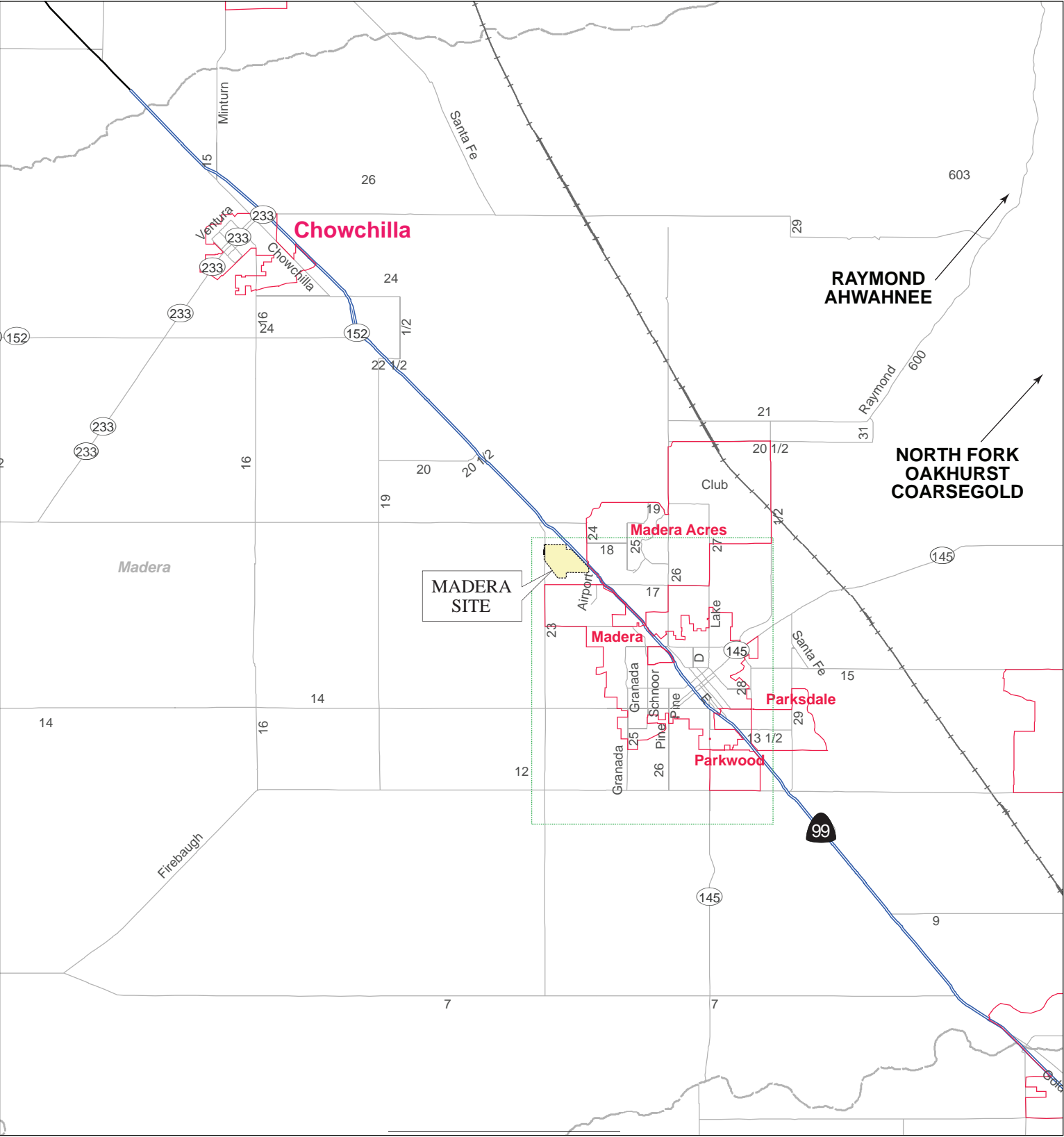
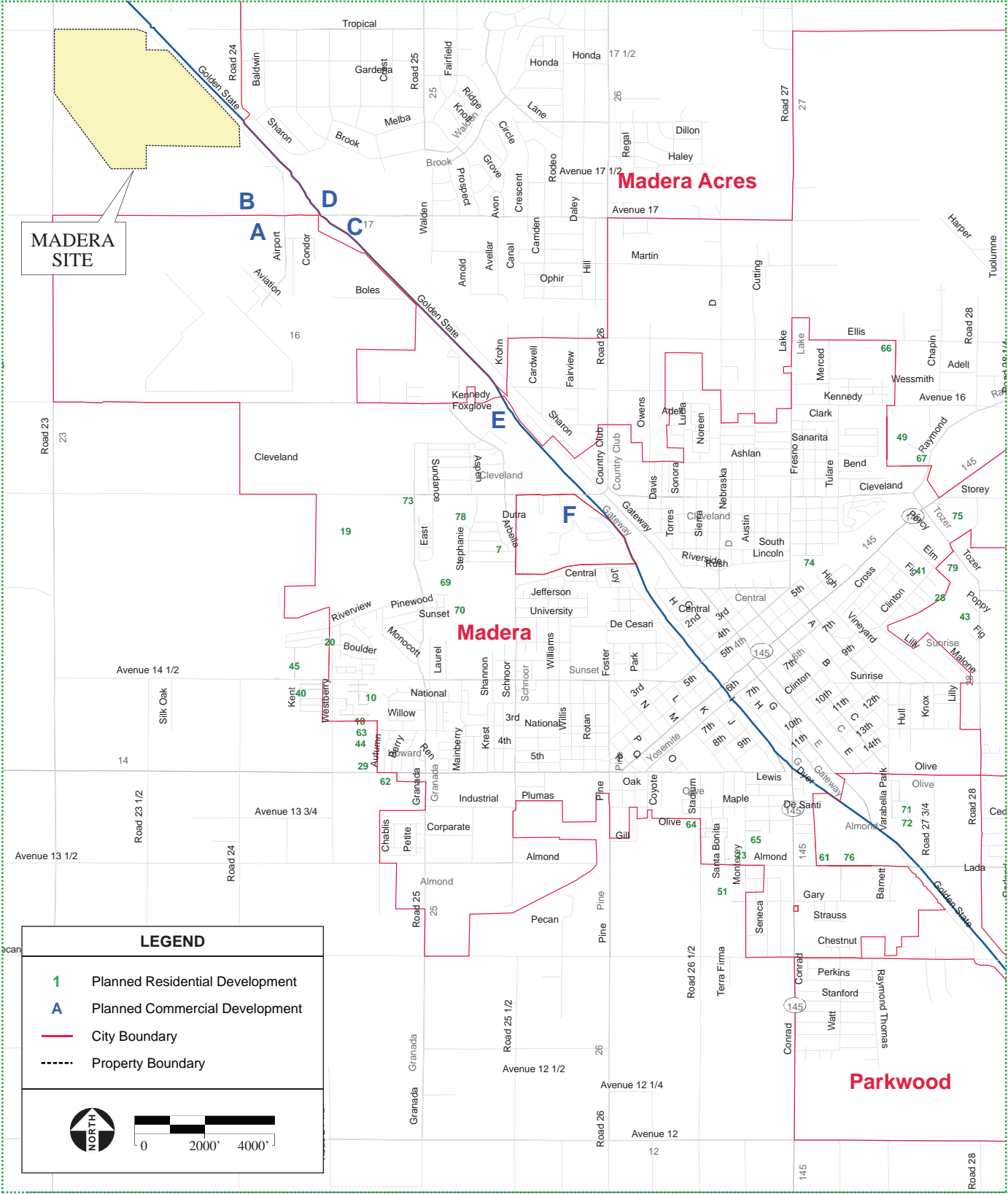


Figure 4.11-6
Madera Fairgrounds Commercial Project Location

MADERA COUNTY



CITY OF MADERA



SOURCE: ESRI Data, 2004; AES, 2008

Figure 4.11-7
Planned Development in Madera County and the City of Madera

TABLE 4.11-3
PLANNED RESIDENTIAL DEVELOPMENT WITHIN THE CITY OF MADERA

Name of Development	Approved	Recorded	Map No.	No. of Units	No. of Bldg. Permits
Almond Village	07/12/05	05/16/07	61	104	0
Calvin Taylor Estates	06/08/04	03/17/06	78	17	0
Capistrano X	2/8/2000	8/9/2000	29	162	154
Capistrano XI	12/08/01	06/07/02	44	42	42
Capistrano XV	05/11/04	02/22/06	62	77	71
Capistrano XVII	05/09/06	12/28/06	63	102	23
Carmel Homes 3	05/11/04	12/05/05	64	82	33
Chateau at Vineyards	5/13/2003	12/1/2003	51	161	141
Chateau at the Vineyards East	09/14/04	06/23/05	65	23	0
Clinton Elm III (RDA)	9/25/2001	4/23/2003	43	133	0
Cordova Estates	12/10/2002	4/3/2003	49	190	190
Country Meadows	9/11/1990	9/15/1996	14	145	122
Crystal Heights	04/10/90	06/05/91	8	87	87
Eagle Meadow Estates	04/12/05	12/10/07	66	60	16
El Coronado	06/14/05	05/18/06	67	206	8
Forest Hill (Basila)	03/09/93	09/23/93	18	71	71
French Cove	07/12/95	06/19/96	20	80	80
Home Ranch	10/11/1994	1/11/2002	19	341	229
Kennedy Estates	10/14/2003	4/21/2005	54	203	154
La Jolla Estates North	3/9/2004	11/19/2004	60	87	87
Mansionette Estates	11/14/89	09/13/94	7	159	159
Mariposa Estates	06/08/04	06/23/05	69	133	102
Mariposa Estates II	12/14/04	12/22/05	70	10	0
Olive Avenue Estates	06/08/04	06/23/05	71	42	42
Orchard Pointe	07/12/05	03/16/06	72	289	99
Pond Place	10/12/04	12/27/05	73	22	2
River Pointe Terrace	11/09/99	09/10/01	36	40	40
Riverside Villas	04/11/06	01/31/07	74	28	0
Riverview Apt.	7/11/2000	NA	39	184	98
Santa Barbara Estates	1/13/2004	5/27/2005	57	90	45
Sienna Estates	01/11/05	05/11/06	75	138	33
Sierra Vista Homes II	8/8/1995	5/10/1999	33	15	11
Tierra Vista Estates	03/09/05	05/10/06	76	78	16
Town and County	04/11/89	11/24/92	3	132	132
Tuscan Village	6/8/2004	2/18/2005	68	23	17
Villa Palmilla	06/08/04	02/14/06	77	44	0
Villa Piamonte	7/11/2000	4/13/2001	40	31	25
Vineyards West	1/8/2002	7/23/2003	45	200	93
Westgate Northwest	09/13/88	12/21/90	1	257	257
Woodlands	05/08/90	09/23/93	10	52	52
Yosemite Estates	7/9/2003	6/17/2004	23	26	26
<i>Total</i>				4,526	2,848

SOURCE: City of Madera, 2008a; AES, 2008.

TABLE 4.11-4
PLANNED RESIDENTIAL DEVELOPMENT WITHIN MADERA COUNTY

Name of Development	Acres	Residential Units	Status
North Shore at Millerton Lake	2,238	2,522	Final EIR in Progress
Gateway Village	2,392	6,455	Project Approved at BOS in Sept. 2007
Gunner West	1,135	3,014	New Specific Plan Pending
Tesoro Viejo -McCaffery	1,574	4,600	Draft EIR Published
Tra Vigne	162	432	EIR to Begin
Total	7,501	17,023	

SOURCE: Innovation Group, 2008; AES, 2008.

4.11.2 ALTERNATIVE A – PROPOSED PROJECT

LAND RESOURCES

The geographic area for the analysis of cumulative impacts to land resources is the San Joaquin Valley. The principal effects to Land Resources associated with countywide development would be localized topographical changes and soil attrition, both of which are evaluated in terms of runoff characteristics, sedimentation and flow under permitting authorities and criteria relevant to ***Water Resources***, below. Local permitting requirements for construction would address regional stormwater, geotechnical, seismic and mining hazards; therefore, no cumulative impacts related to Land Resources would occur as a result of Alternative A.

WATER RESOURCES

The geographic boundary of the cumulative water resources analysis is defined as the San Joaquin Valley. This boundary has been selected because the Madera site is within the San Joaquin River watershed.

Cumulative effects related to development of an on-site water supply source could occur in the project area as the result of reduced water supply from the underlying groundwater aquifer when combined with regional groundwater level declines from cumulative development's use of the aquifer.

Development of on-site groundwater resources could affect groundwater levels in the project vicinity. Adjacent groundwater wells may also be dewatered (interference drawdown) and the saturated interval (well depth minus depth to water) may be significantly lowered due to interference drawdowns. As described in **Section 4.3**, all of the known off-site wells located within a two-mile radius of the Madera site would experience minor drawdown effects from proposed pumping on the site. These effects would be exacerbated in the future, from cumulative development in the area

(Komex, 2008 – **Appendix L**). However, Alternative A would not result in a significant incremental contribution to the regional groundwater overdraft situation because the Tribe has signed a Memorandum of Understanding (MOU) with the Madera Irrigation District (MID) under which the Tribe agrees to purchase 450 acre feet per year of water from MID to be utilized for off-site aquifer recharge. Alternative A is expected to utilize 448 acre-feet of water per year if reclaimed water is not available and 305 acre-feet of water per year if reclaimed water is available. Thus, under either option Alternative A's regional impact would be fully mitigated. The Tribe further agrees in the MID MOU to monitor water usage and, should water usage rise above 450 acre feet in a particular year, to ensure that the aquifer is recharged by the amount of water utilized above 450 acre feet. Thus, significant cumulative impacts to groundwater would not occur.

Cumulative effects to water quality may take place as the result of future developments in combination with Alternative A. Examples of effects include:

- increased sedimentation,
- increased pollution, and
- increased stormwater flows.

Stormwater discharges from residential and industrial areas are of concern in managing surface water quality. Pollutants that accumulate in the dry summer months such as oil and grease, asbestos, pesticides, and herbicides, create water quality problems due to their presence in high concentrations during the first major autumn storm event (RWQCB, 1998).

Affected water bodies within the project area include Dry Creek and Fresno River, located just west and south of the Madera site. Schmidt Creek and Dry Creek originate in the northeastern area of Madera County and eventually flow into the Fresno River and thence the San Joaquin River. These two creeks act as flood control channels as well as regional drainage channels. These waters are currently not listed as impaired on the 303(d) list.

A watershed's runoff characteristics are altered when impervious surfaces replace natural vegetation or agricultural lands. Runoff charges may increase stream volumes, increase stream velocities, increase peak discharges, shorten the time to peak flows, and lessen groundwater contributions to stream base-flows during non-precipitation periods. Urban areas also have significant sources of non-point source pollution that can affect regional water quality when examining the entire watershed contribution to receiving waters. Transportation developments and other planned developments within the San Joaquin Valley would gradually increase urban areas, thereby increasing the potential for increased runoff volumes, velocities, and pollution. Impacts to water resources from planned cumulative developments could also increase runoff volumes and pollution when cumulatively evaluated along with Alternative A.

Alternative A could contribute to changes in runoff characteristics (volume, velocity, and hydrograph) and water quality located near the Madera site as a result of project development.

However, the Tribe has made appropriate design allowances which would reduce the project's contribution to cumulative effects to a less than significant level. These include:

- Surface water detention basins that will limit post-construction runoff peak volumes to pre-construction levels.
- Sediment/grease traps to control and reduce the Total Suspended Solids (TSS) and other potentially environmentally polluting minerals or materials such as oils and greases, nutrients and metals by approximately 80%.
- Where feasible, all areas outside of buildings and roads will be kept as permeable surfaces, either as vegetation or high infiltration cover such as mulch, or gravel, or turf block.
- Rooftops will drain to either embedded cisterns or vegetated driplines to maximize infiltration prior to concentrating runoff.
- Pedestrian pathways will use a permeable surface where possible, such as crushed aggregate or stone with sufficient permeable joints.
- In accordance with the requirements of the NPDES Phase II General Permit for Storm Water Discharges from Construction Activities, the Tribe will prepare a Stormwater Pollution Prevention Plan (SWPPP) to control discharge of pollutants in stormwater.

Other development projects will incorporate similar or identical measures as required by local regulations and Federal law. With the incorporation of these features, Alternative A would not result in a significant contribution to a cumulative water quality effect.

AIR QUALITY

Ozone and PM Emissions

Ozone and PM are pollutants that affect the region as a whole, in particular Madera County (see **Section 3.4.1**). Therefore, cumulative air quality effects are assessed by comparing the incremental emissions associated with Alternative A to Countywide emissions forecasted by the California Air Resources Board (CARB) for long-term cumulative conditions. Since the farthest planning horizon for countywide emission forecasts is the year 2020, in order to have consistency, estimated emissions for the project and its alternatives were reevaluated to the year 2020 and are presented in **Table 4.11-7**.

Madera County's and the San Joaquin Valley's emissions trends from 1975 to 2020 are presented in **Table 4.11-5** (CARB, 2005). For NO_x, Madera County trends mirror those of the San Joaquin Valley Air Basin (SJVAB). There was a slight increase in emissions from 1975 to 1980 and then a reasonable decline in emissions every year since. For ROG, the similarities are not so predominant. Whereas both Madera and the SJVAB show a slight decline from 1995 to 2005 and starting to level off in future years, their past is not so similar. Madera County saw a significant decrease in ROG emissions between 1975 and 1980 and the SJVAB saw an increase in the same time period and whereas the SJVAB saw a significant decrease between 1980 and 1995, Madera County saw almost no change.

In general, ozone precursor emissions from mobile sources tend to decrease over time because emissions standards have become stricter and engine technologies have improved. For instance, the percentage of hybrid vehicles on the road is increasing every year, and this trend is expected to continue. As newer vehicles, which meet stricter emission standards and are built with the latest technology, are introduced into the vehicle fleet, they replace older, higher polluting vehicles. The decrease in emissions per vehicle was substantial enough to compensate for increases in the amount of travel. The San Joaquin Valley has a substantial motor vehicle population, and the implementation of stricter motor vehicle emissions controls has resulted in large emissions reductions for ozone precursors.

Although the long-term ambient trends indicate improving ozone levels, since 1994 the peak ozone indicators have been somewhat elevated. It is not yet clear whether these data represent a change in the overall trend. Stationary source emissions of ROG in the San Joaquin Valley have declined over the last 20 years due to new controls for oilfield emissions and new rules for control of ROG from various industrial coatings and solvent operations.

Direct emissions of PM₁₀ increased in the SJVAB and Madera County between 1975 and 2000 and are projected to continue increasing through 2020. This increase is due to the growth in emissions from area-wide sources, primarily paved road dust (CARB, 2005).

TABLE 4.11-5
REGIONAL EMISSIONS TRENDS

	1975	1980	1985	1990	1995	2000	2005	2010	2015	2020
NO_x										
Madera County	30.0	35.7	32.8	35.8	32.5	30.6	29.8	26.8	24.1	21.8
San Joaquin Valley Air Basin	688	853	853	822	688	582	489	410	345	305
ROG										
Madera County	80.7	64.2	62.3	62.4	60.0	57.8	56.6	55.5	54.9	54.9
San Joaquin Valley Air Basin	1,411	1,470	1,295	876	720	683	621	599	593	595
PM₁₀										
Madera County	17.6	19.4	17.7	18.8	18.9	19.4	20.8	22.0	23.0	24.3
San Joaquin Valley Air Basin	387	377	378	386	350	398	394	410	420	432

NOTES: Amounts of emissions are in tons per day.

SOURCE: California Air Resources Board, 2005; AES, 2005.

The 2020 emissions estimates include the effects of projected growth in the County associated with an increase in population and construction of new residential/commercial/industrial developments. Thus, the 2020 regional inventory emission levels include the effects from the related projects discussed above in **Section 4.11.2**.

For 2020, in addition to Countywide emissions, incremental Alternative A generated emissions are also compared with the San Joaquin Valley Air Pollution Control District (SJVAPCD) significance thresholds discussed in **Section 4.4.2**. The SJVAPCD's thresholds are:

- 10 tons per year (tpy) of ROG, and
- 10 tpy of NO_x emissions.

As noted in **Section 4.4.2**, these thresholds are meant to assure compliance with the State and Federal Clean Air Acts. The SJVAPCD is projecting improved ozone levels for the San Joaquin Valley in 2020 and beyond (SJVAPCD, 2004). A plan to attain the Federal 8-hour ozone standard has not yet been adopted. Thus, it is assumed that the San Joaquin Valley Air Basin will remain in non-attainment for the Federal 8-hour ozone standard and that similar emissions thresholds for ROG and NO_x will continue to indicate a significant air quality effect for NO_x in 2020 and 2030.

In **Table 4.11-6** long-term 2020 operational emissions associated with Alternative A (and the other alternatives for ease of comparison) are compared to countywide emissions forecasts for 2020. In 2020, unmitigated operation of Alternative A is estimated to result in:

- 8.73 tons per year (tpy) of ROG,
- 10.64 tpy of NO_x, and
- 19.07 tpy of PM₁₀ emissions.

As shown in **Table 4.11-6**, Alternative A generated only 0.134% of the Countywide total NO_x in 2020 and only generated 0.044% of ROG. The PM₁₀ contribution for Alternative A is a little more with 0.220% in 2020. The incremental effect of Alternative A is a relatively minor portion of the Countywide total for one project for ROG, NO_x, and PM₁₀. Alternative A, along with other cumulative development would exacerbate the regional trend towards higher PM₁₀ emissions but to a less than significant level, because of dust control measures being successfully implemented throughout the air basin.

TABLE 4.11-6
LONG TERM EMISSIONS IN TONS PER DAY AS A PERCENT OF COUNTY 2020 TOTAL

Project Alternative	Reactive Organic Gases (ROG)			Nitrogen Oxide Gases (NO _x)			Inhalable Particulates (PM ₁₀)		
	Project-Related Emissions	Madera County Total	% of Total	Project-Related Emissions	Madera County Total	% of Total	Project-Related Emissions	Madera County Total	% of Total
Alternative A	0.024	54.9	0.044	0.029	21.8	0.134	0.052	24.3	0.220
Alternative B	0.017	54.9	0.031	0.209	21.8	0.094	0.038	24.3	0.157
Alternative C	0.022	54.9	0.041	0.024	21.8	0.112	0.043	24.3	0.178
Alternative D	0.002	54.9	0.004	0.003	21.8	0.013	0.005	24.3	0.021

NOTES: Amounts of emissions are in tons per day.

SOURCE: California Air Resources Board, 2005; AES, 2008.

Table 4.11-7 presents a comparison of unmitigated operational and area source emissions for Alternative A (and the other alternatives for ease of comparison) to SJVAPCD emissions criteria. In 2020, NO_x unmitigated emissions generated by Alternative A would still exceed the 10-tpy significance thresholds.

Reductions in ROG and NO_x emissions would occur through the implementation of mitigation measures detailed in **Section 5.2.3**. However, the full extent of the emission reductions that could be attributed to these mitigations cannot be fully represented by the URBEMIS program. The current, District recommended, version of URBEMIS (version 9.2.4) allows the user to take advantage of environmental factors such as local serving retail and pedestrian and transit amenities in the area, but it does not allow the user to apply mitigations that are changes in the project that can mitigate the pollution. However, mitigations described in **Section 5.2.3** can be quantified to reduce the cumulative effects of Alternative A to less than significant level; therefore cumulative operation air quality impacts would be considered less than significant.

Carbon Monoxide Concentrations

As described in the traffic study of the project alternatives, traffic operations at signalized study intersections would be LOS D or better with Alternative A under 2030 long-term future cumulative background conditions and traffic mitigation measures. Based on criteria presented in the University of California Davis Institute of Transportation Studies document *Transportation Project-Level Carbon Monoxide Protocol* (Garza, *et al.*, 1997), intersections operating at LOS D or better typically do not result in CO concentrations that exceed State or Federal standards. Therefore, Alternative A with traffic mitigation measures, in combination with increased traffic from cumulative development would have a less-than-significant impact on CO air quality.

TABLE 4.11-7
2020 UNMITIGATED EMISSIONS IN TONS PER YEAR
COMPARED TO SJVAPCD THRESHOLDS

PROJECT ALTERNATIVE	EMISSIONS IN TONS PER YEAR	
	ROG	NO _x
ALTERNATIVE A	8.73	10.64
<i>Significant Cumulative Effect?</i>	<i>No</i>	<i>Yes</i>
ALTERNATIVE B	6.20	7.55
<i>Significant Cumulative Effect?</i>	<i>No</i>	<i>No</i>
ALTERNATIVE C	7.87	8.55
<i>Significant Cumulative Effect?</i>	<i>No</i>	<i>No</i>
ALTERNATIVE D	0.86	1.03
<i>Significant Cumulative Effect?</i>	<i>No</i>	<i>No</i>

NOTE: Emissions shown are for mobile sources and area sources. Significance threshold amount is 10 tpy for ROG and NO_x.

SOURCE: URBEMIS 9.2.4.

Odor Effects

Several commercial centers are planned in the area around the intersection of Avenue 17 and State Route 99. The SJVAPCD's list of common types of facilities that have been known to produce odors in the SJV occur mostly in manufacturing/industrial zones and no industrial areas are projected for the area, therefore Alternative A (which would not result in significant odors after the implementation of mitigation measures contained in **Section 5.2.3**), in combination with cumulative development, would have a less than significant odor effect.

Toxic Air Contaminants

Alternative A and other projects, when considered cumulatively, could result in potentially significant impacts from toxic air contaminants. Several commercial centers are planned in the area around the intersection of Avenue 17 and State Route 99. Potential toxic air contaminant sources such as gasoline dispensing facilities and dry cleaners could be located in these commercial areas. The SJVAPCD permit process, City permitting processes, and future environmental review processes (applied to future development) will combine to ensure that Alternative A, in combination with cumulative development, would have a less than significant effect from toxic air contaminants.

*Climate Change**Methodology*

Two recent federal court decisions (Massachusetts v. Environmental Protection Agency, U.S., 1275 S.Ct. 1438, 1462 [2007] and Center for Biological Diversity v. National Highway Safety Administration, 508 F.3d 508 [9th Cir. 2007]), the passage of California Assembly Bill 32 (AB 32), and slowly increasing scientific consensus have resulted in general guidance regarding appropriate GHG analysis (Section 3.4).

The California Governor's Office of Planning and Research (OPR) has provided guidance on how lead agency can develop strategies to analyze climate change impacts. The following methodology for assessing impacts of the Proposed Project is consistent with the OPR's guidance. The approach was developed using several approaches outlined in white papers provided by the OPR Technical Advisory, the California Air Pollution Control Officers Association (CAPCOA, 2008), the consulting firm of Jones and Stokes (2007), and the Association of Environmental Professionals (AEP, 2007). The approach used herein involves a combination of quantitative and qualitative analysis focusing on the project's impact on California's efforts to reduce cumulative statewide GHG emissions. GHG mitigation measures are included as part of this analyses.

As noted in **Section 3.4**, global warming is a global issue that is not being caused by any single development project, but by global increases in atmospheric GHG concentrations. Thus, global warming is most effectively addressed on a global or regional level. California's global warming policies and legislation (most notably Executive Order S-3-05 and AB 32) are intended to be regional

approaches to ensure that statewide emissions are reduced substantially in the future (to levels much lower than existing levels).

The CARB and the Climate Action Team (CAT) have recently identified approximately 126 strategies and measures that may be utilized for by the state to meet its emissions reduction targets in 2010, 2020, and 2050 (see **Appendix W**). Most of these measures focus on statewide action meant to curb emissions by changes in statewide planning or policies rather than changes to individual development projects. However, some of the measures may be directly applicable to specific industries or individual commercial developments. Should a development alternative comply with all directly applicable measures, the alternative would support the State's efforts to significantly reduce its cumulative contribution to global climate change (to levels recommended by the International Panel on Climate Change (IPCC)) and the associated impacts. Thus, for the purposes of this analysis, cumulative contributions associated with a development alternative would be less than significant if the project complies with the strategies currently identified by CARB or CAT to comply with Executive Order S-3-05 or AB 32, provided that the strategies can be applied to proposed development alternatives.

Carbon Dioxide Equivalent

Carbon dioxide equivalent (CO₂e) is a method by which GHGs values other than CO₂ are converted to a CO₂-like emissions value based on a heat-capturing ratio. As shown in **Table 4.11-8**, CO₂ is used as the base and is given a value of one. CH₄ has the ability to capture 21 times more heat than CO₂; therefore, CH₄ is given a CO₂e value of 21. Emissions are multiplied by the CO₂e value to achieve one GHG emission value. By providing a common measurement, CO₂e provides a means for presenting the relative overall effectiveness of emission reduction measures for various GHGs in reducing project contributions to global climate change.

TABLE 4.11-8
GREENHOUSE GAS CO₂ EQUIVALENT

Gas	CO ₂ e Value
CO ₂	1
CH ₄	21
N ₂ O	310
HFCs/PFCs	6,500
SF ₆	23,900

Source: BAAQMD, 2006.

Strategies and Emission Estimates

As shown in **Table 4.11-9**, the EPA and CARB approved URBEMIS 2007 emissions modeling software estimates that Alternative A would result in the emission of approximately 1,279 tons per year of CO₂ during construction, which is expected to last 12 months. During operation, Alternative A would result in the mobile and area emissions of 26,678 tpy of CO₂. Based on emission factors from the Climate Change Action Registry, Alternative A would result in the emission of CH₄ and

N₂O equivalent to 816 tpy of CO₂e. Indirect emissions of CO₂, CH₄, and N₂O would be the equivalent 7 tpy of CO₂e. Total annual emissions during operation would be equivalent to 24,502 tpy of CO₂e. Annual Alternative A GHG emissions would be approximately 0.0057 percent of California's predicted contribution to global GHG emissions in 2020 (see **Table 3.4-5**). Alternative A contributions to the annual global GHG emissions in 2020 would be approximately 0.0000039 percent. While Alternative A's contributions to statewide and global emissions are miniscule, a potentially significant contribution to cumulative global emissions cannot be ruled out solely on the basis of a small percentage contribution. This is due to the potentially serious impacts of climate change and the potential for even relatively minimal concentrations to lead to a "tipping point" beyond which impacts will be irreversible.

TABLE 4.11-9
ESTIMATED ALTERNATIVE A OPERATIONAL GHG EMISSIONS

CO ₂ Emissions ¹					
Mobile Sources		Area Sources			Total CO ₂ e
tons per year		tons per year			tons per year
22,966		712			23,678
CH ₄ and N ₂ O Emission from Mobile Sources ²					
Emission Factor (CO ₂ /CH ₄ /N ₂ O)	Miles Traveled	CH ₄	N ₂ O	Total CO ₂ e	
g/mile	miles/day	tons per year		tons per year	
552.08/0.05/0.05	122,594	52	765	816	
Indirect GHG emissions ²					
Emission Factor (Kg of CO ₂ /CH ₄ /N ₂ O)	Estimated kW-h Usage ³	CO ₂	CH ₄	N ₂ O	Indirect CO ₂ e
lb/MW-h	MW-h/year	tons per year			
804.54/0.006/0.0037	40	7	0	0	7
Total Operation CO ₂ e tons per year					24,502

¹ Estimated from EPA and CARB approved URBEMIS air quality program (**Appendix S**)

² Emission factors from Climate Change Action Registry

³ Estimated using 4,500 kilowatts-hours/month of power used.

Source: URBEMIS, 2007; Climate Change Action Registry, 2007.

As discussed above and in **Section 3.4**, California's strategies and measures would result in a reduction of statewide emissions, including emissions resulting from Alternative A, to levels below current background levels. Of the approximately 126 strategies and measures that would ensure a statewide reduction in GHG emissions, only three were determined to apply to Alternative A (see **Table 4.11-10**). The other strategies do not apply because they either apply to state entities, such as CARB and/or are planning-level measures, or they apply to particular industries, such as the auto repair industry. As shown in **Table 4.11-10**, Alternative A would not be in compliance with one of the three applicable state climate change strategies, resulting in a potentially significant cumulative

impact based on the methodology explained above. Measures in **Section 5.2.3** would ensure compliance with all applicable strategies, resulting in a less than significant cumulative impact.

TABLE 4.11-10
COMPLIANCE WITH STATE EMISSIONS REDUCTION STRATEGIES

CAT Strategies and Early Action Measures	Alternative A Compliance
Diesel Anti-Idling: In July 2004, the CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling.	Development would be located on trust lands and thus not subject to CARB restrictions on on-site diesel-fueled commercial vehicle idling.
Achieve 50 percent statewide Recycling Goal: Achieving the State's 50 percent waste diversion mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. A diversion rate of 48 percent has been achieved on a statewide basis. Therefore, a 2 percent additional reduction is needed.	Solid waste services are expected to be provided by the City or County of Madera, which are subject to the state's recycling requirements. The development would not affect City or County diversion goals as waste from tribal land is classified as out-of-state waste and is not calculated in local waste diversion statistics.
Water Use Efficiency: Approximately 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce greenhouse gas emissions	As discussed in Section 2.0 , Alternative A would include substantial water conservation, including the extensive use of recycled water, thus complying with the strategy to use water efficiently.

Source: State of California, Environmental Protection Agency, and Climate Action Team, 2006; AES, 2008.

BIOLOGICAL RESOURCES

This section analyzes the potential effects of Alternative A in conjunction with other projects on biological resources, including wildlife and habitats, Federally listed species, migratory birds, and jurisdictional waters of the U.S.

Wildlife and Habitats

Alternative A would not result in significant direct or indirect effects to wildlife and habitats, including state listed species. However, disturbance to habitats and increases in human activity within the vicinity from other proposed projects, including the Caltrans SR-99 freeway improvement projects and local planned development projects, could incrementally contribute to past, present and future effects to wildlife and habitats. The habitat on the Madera site that would be disturbed by Alternative A is presently disturbed agricultural land, which is of relatively little biological value. In addition, sensitive wetland habitat on the Madera site would be avoided. Thus, Alternative A's contribution to the cumulative effects to wildlife and habitats in the region would be less than significant.

State Listed Species

Alternative A would result in significant indirect effects to the state listed Swainson's hawk. Those effects will be reduced to less than significant levels by implementation of the mitigation measures identified in **Section 5.2.4**. Disturbance to habitats and increases in human activity within the vicinity from other proposed projects, including the Caltrans SR-99 freeway improvement projects and local planned development projects, could incrementally contribute to past, present and future effects to the Swainson's hawk. Other projects in the area will comply with local and State laws regulating state listed threatened and/or endangered species to avoid impacts to this species, and unavoidable impacts will be adequately mitigated through the CDFG. Therefore, a less than significant cumulative effect to State listed species would result.

Federally Listed Species

Alternative A would not result in significant cumulative effects to Federally listed species. However, disturbance to vernal pools, San Joaquin pocket mouse habitat, San Joaquin kit fox habitat, and California tiger salamander habitat, and increases in human activity within the vicinity from other proposed projects, including the Caltrans SR-99 freeway improvement projects and local planned development projects, could cumulatively affect Federally listed species. This is a potentially significant cumulative impact to threatened and/or endangered species. Other projects in the area will comply with local and Federal laws regulating threatened and/or endangered species to avoid impacts to such species, and unavoidable impacts will be adequately mitigated through the US Fish and Wildlife Service (USFWS). Therefore, a less than significant cumulative effect to Federally listed species would result. Nonetheless, mitigation is discussed in **Section 5.2.4**.

Migratory Birds

Alternative A and other projects, when considered cumulatively, could result in potentially significant impacts to nesting migratory birds. Other projects in the area will avoid and/or adequately mitigate for migratory birds by following the regulations set forth in the Migratory Bird Treaty Act. Potential significant direct effects to migratory birds and other special status species will be avoided or minimized by implementation of the mitigation measures identified in **Section 5.2.4**.

Waters of the U.S.

Alternative A would not directly affect any waters of the U.S. Any adverse indirect effects to waters of the U.S. would be avoided by the implementation of project features designed to prevent increased erosion and sedimentation and increase flood storage on the site. Other projects in the area will follow the provisions set forth in the Clean Water Act to reduce project impacts to a less than significant level. Therefore, Alternative A, in combination with other development projects, would not result in significant cumulative effects to waters of the U.S.

CULTURAL RESOURCES

Cumulative effects to cultural resources typically occur when sites that contain cultural features or artifacts are disturbed by development. As these resources are destroyed or displaced, important information is lost and connections to past events, people and cultures is diminished. As the City of Madera and Madera County continue to grow, resources, including historic buildings and archaeological sites, may be lost. Madera County contains extensive cultural resources, including Mono Indian sites and historical sites associated with early ranching, homesteads, and mining. Sites in Madera County include Native American archaeological sites with bedrock mortars, village sites, and dance houses or roundhouses; and historic sites, including historic mines, homes, and churches. Impacts to these cultural resources are likely to occur as residential and commercial growth occurs in Madera County, including near the community of Madera and its surrounding cities.

No significant cultural resources were identified within or adjacent to Alternative A. However, the records search and archival research indicate that the study area is in a region sensitive for both prehistoric/pre-contact resources and historic-period resources. Prehistoric archaeological sites recorded in the general vicinity of the project area include rock alignments, human cremations, habitation areas, trails, and lithic scatters. Known historic-period archaeological sites in the general area include wagon roads, trails, homesteads and ranches. Based on this sensitivity, Alternative A may impact previously unknown buried archaeological resources, as archaeological sites may be buried with no surface manifestation. Significant cumulative impacts to cultural resources could occur if sites continued to be lost, damaged, or destroyed without appropriate recordation, preservation, or data recovery. Mitigation for potential cumulative impacts to unknown cultural resources has been specified in **Section 5.2.5**. Implementation of these mitigation measures would reduce impacts to less than significant.

SOCIOECONOMIC CONDITIONS

Cumulative socioeconomic effects could occur in the project area (in this case, Madera County) as the result of developments that affect the lifestyle and economic well being of residents. Examples of cumulative socioeconomic impacts might include urban blight, increased crime, changes in a community's tax base, and changes in the ability to access private property.

Future Conditions

Madera County's population is projected to increase rapidly to approximately 219,832 by 2030 (a 77 percent increase from 2000 data) (California Department of Finance, 2005). This is greater than the expected State population increase of 41 percent in the same time period. The San Joaquin Valley in general has recently been growing at a high rate due partially to rapidly increasing land values throughout the state and the loss of developable land in other areas of the state. Areas of the San Joaquin Valley, including Madera County have remained relatively affordable, enticing individuals and businesses to move to the area. Rapidly increasing development has led to the start of a diversification of the local economy from an agriculture dominated economy.

Incremental Cumulative Effect

Expected future population would be increased by Alternative A's expected population growth of 836 (see **Section 4.7.1**). Alternative A would introduce a substantial new source of economic activity to Madera County. Once operational, Alternative A's casino/hotel resort would become one of Madera County's largest employers. The creation of jobs would serve the growing County population. Alternative A would add to the diversification of the local economy.

As population growth occurs in the region, fiscal demands on local governments will increase for necessary services. The local governments in the region address increased service demand from new developments by requiring various development fees and assessments. Alternative A would not be subject to development fees. However, as identified in **Sections 2.2.10, 4.7.1, and 5.2.6**, the Tribe has entered into a Memoranda of Understanding (MOU) with Madera County and the City of Madera, by which the Tribe agrees to pay fees equivalent to development fees, ensuring that Alternative A's impact to the cumulative fiscal demands on local government is less than significant.

RESOURCE USE PATTERNS***Transportation/Circulation****Methodologies*

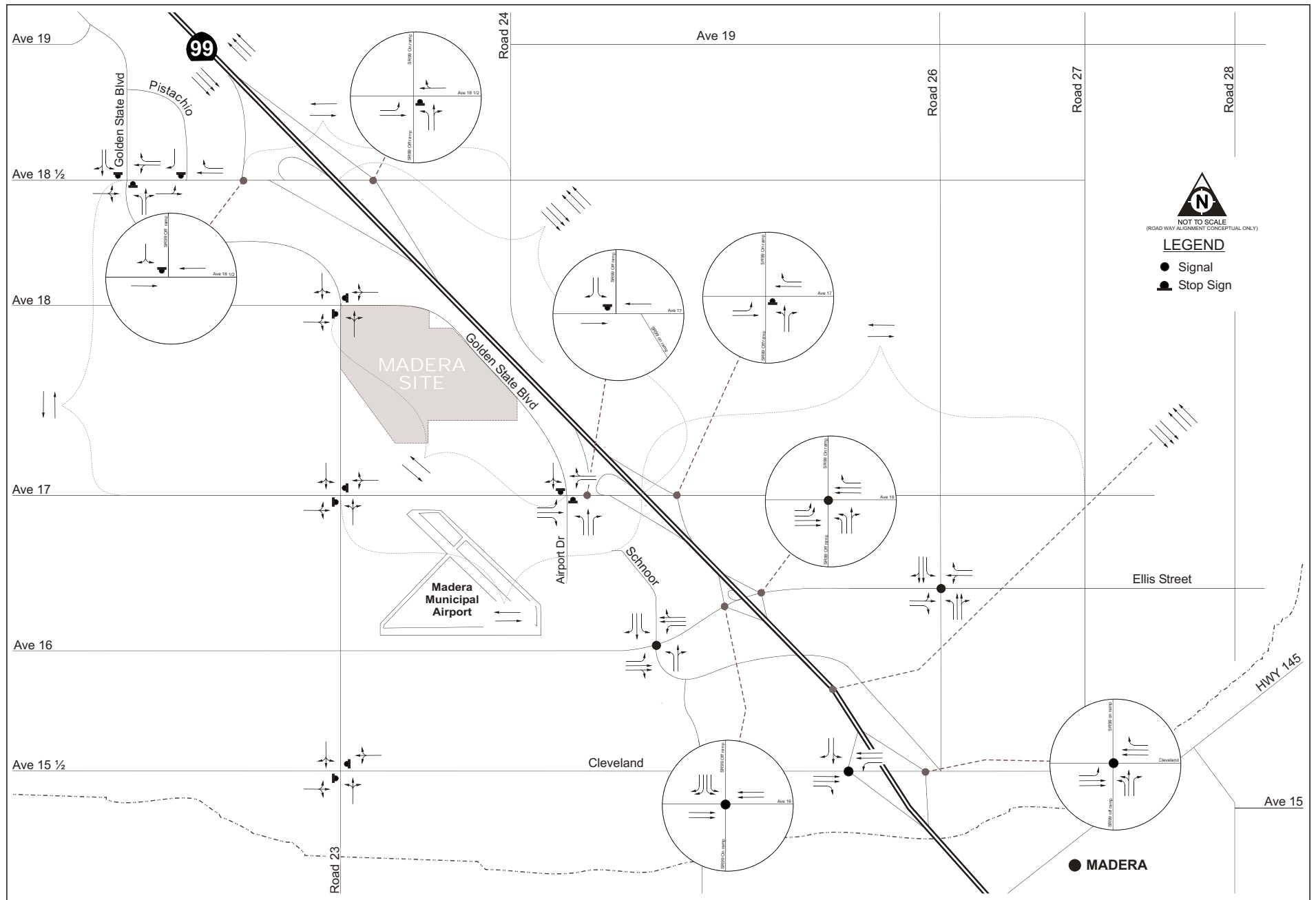
The future cumulative (2030) traffic volumes were calculated using growth increment/growth rate data developed from the 2000 and the 2030 Without Project Madera County Transportation Commission (MCTC) model runs. Additionally, the 2030 model year data (by TAZ) were adjusted to include the general plan amendments that occurred after the development of the MCTC model (**Appendix M**). For City and Caltrans segments and intersections that are showing negative or no growth by 2030, a 1 percent growth factor applied to the existing count data was used to calculate the 2030 Without Project volumes and should be considered a worst-case assumption. For County segments and intersections that are showing negative or no growth by 2030, a 3 percent growth factor applied to the existing count data was used to calculate the 2030 Without Project traffic volumes and should be considered a worst-case assumption. The various local jurisdictions each reviewed and approved of these worst-case assumptions.

2030 Traffic Condition Without Project

Figures 4.11-8 and 4.11-9 present the 2030 Cumulative lane configuration and intersection control for the Madera site study intersections.

Freeway and Roadway Segment Performance. As presented in **Table 4.11-11**, the following six freeway segments and two roadway segment are shown to operate at an unacceptable LOS without the addition of project traffic:

- SR-99 NB – North of Avenue 18 ½



See Map 4.11-9

Figure 4.11-8
Madera Site – 2030 Lane Configuration and Intersection Control

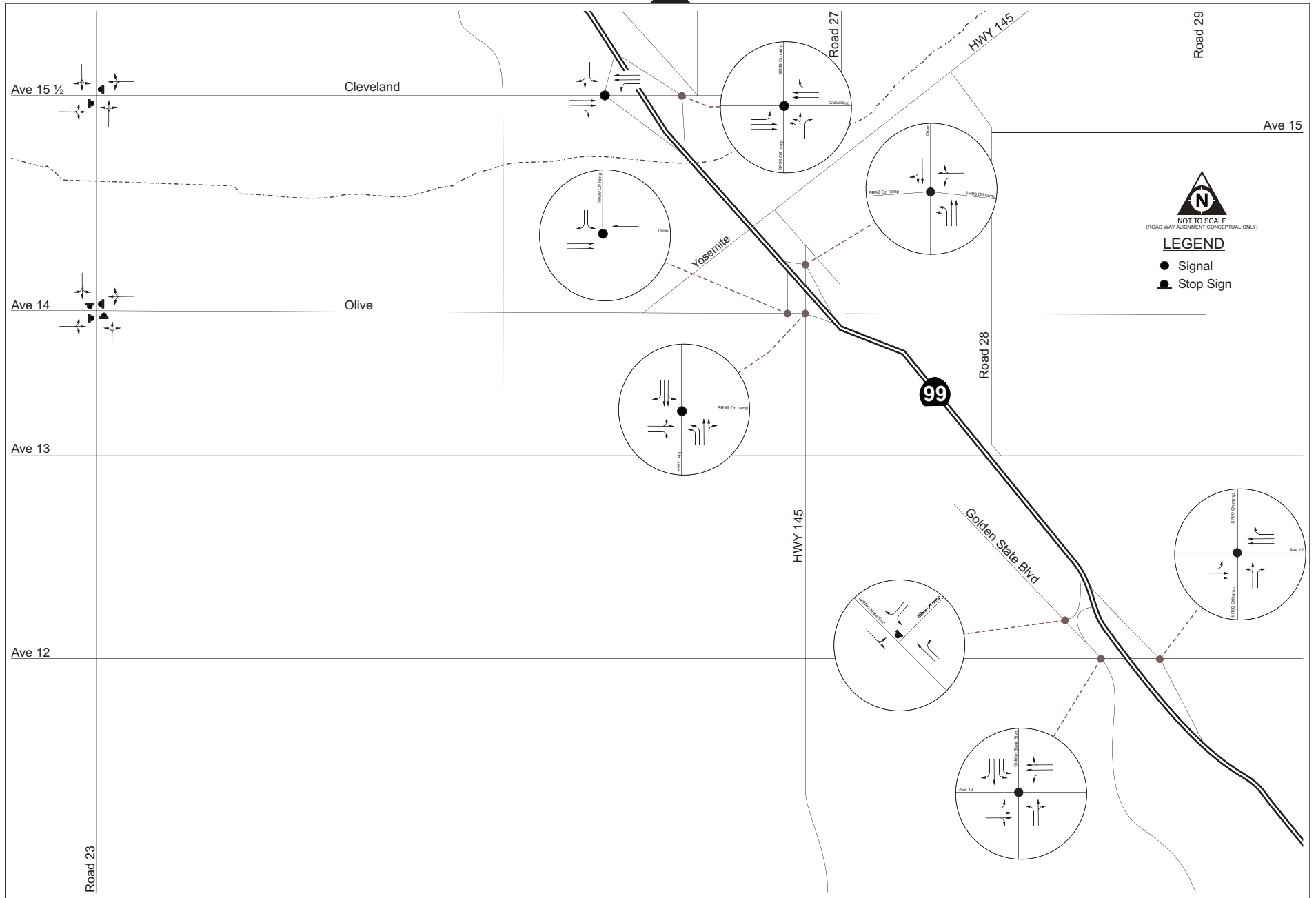


Figure 4.11-9
Madera Site – 2030 Lane Configuration and Intersection Control

TABLE 4.11-11
FREEWAY AND ROADWAY SEGMENT PERFORMANCE – 2030 WITHOUT PROJECT (MADERA SITE)

Segment	LOS Threshold	2030 w/o Project			
		LOS		Density (pc/mi/ln) ¹	
		AM	PM	AM	PM
Freeway Segment					
SR-99 NB – North of Avenue 18 ½	C	D	D	26.5	33.2
SR-99 SB – North of Avenue 18 ½	C	C	E	23.9	41.4
SR-99 NB – Avenue 18 ½ to Avenue 17	C	D	D	26.4	31.4
SR-99 SB – Avenue 18 ½ to Avenue 17	C	C	E	23.5	40.5
SR-99 NB – South of Avenue 17	C	E	F	39.0	---
SR-99 SB – South of Avenue 17	C	D	F	29.2	---
Roadway Segment					
Avenue 18½ - Road 24 to Road 23	D	A	B	NA	NA
Road 23 – Avenue 18½ to Avenue 17	D	D	D	NA	NA
Avenue 17 – Road 23 to SR-99	D	F	F	NA	NA
Avenue 17 – SR-99 to Road 27	D	E	F	NA	NA
Golden State Boulevard – Avenue 17 to Road 23	D	A	A	NA	NA

SOURCE: TPG Consulting, Inc. 2008; AES 2008.

NOTES: **Bold** text denotes unacceptable LOS.

NA= not applicable

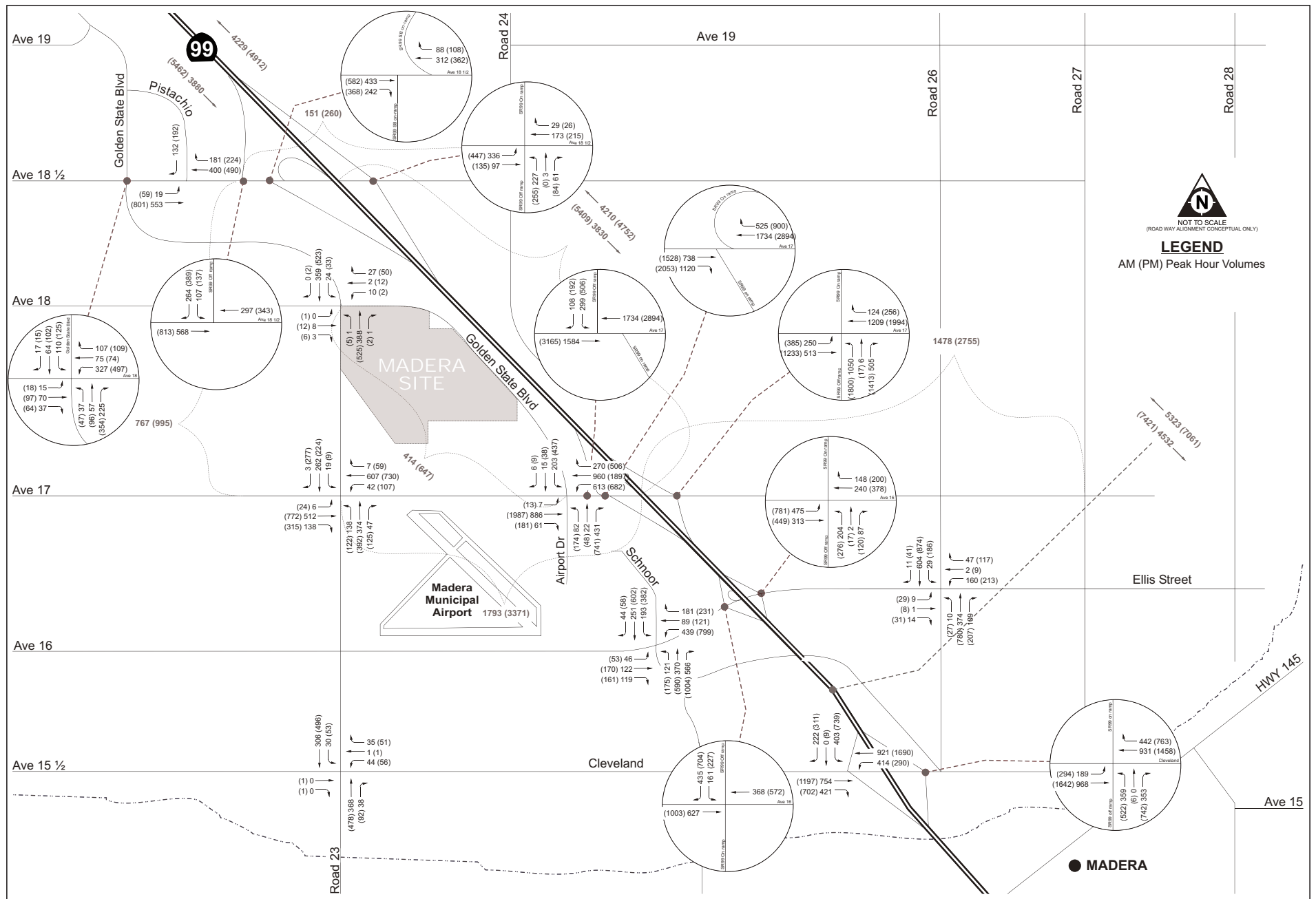
¹ density = passenger car per mile per lane

--- = beyond software limitations

- SR-99 SB – North of Avenue 18½
- SR-99 NB – Avenue 18½ to Avenue 17
- SR-99 SB – Avenue 18½ to Avenue 17
- SR-99 NB – South of Avenue 17
- SR-99 SB – South of Avenue 17
- Avenue 17 – SR-99 to Road 27
- Avenue 17 – Road 23 to SR 99

Intersection Operations. The 2030 Without Project traffic volumes are presented in **Figures 4.11-10** and **4.11-11**. As presented in **Table 4.11-12**, the following 17 intersections are forecast to operate at an unacceptable LOS without the addition of project traffic:

- Avenue 17 at SR-99 SB ramps
- Avenue 17 at SR-99 NB ramps
- Avenue 12/Golden State Boulevard at SR-99 SB ramps
- Avenue 12 at Golden State Boulevard
- Avenue 12 at SR-99 NB ramps
- Avenue 17 at Road 23
- Avenue 17 at Golden State Boulevard
- Cleveland Avenue/Avenue 15½ at SR-99 NB ramps
- Cleveland Avenue/Avenue 15½ at SR-99 SB ramps
- Avenue 16/Ellis Overcrossing at Aviation Drive
- SR-145/Madera Ave at SR-99 NB ramps
- Olive Avenue/Avenue 14 at SR-99 SB off-ramp



See Map 4.11-11

Figure 4.11-10
 Madera Site – 2030 Intersection Volumes

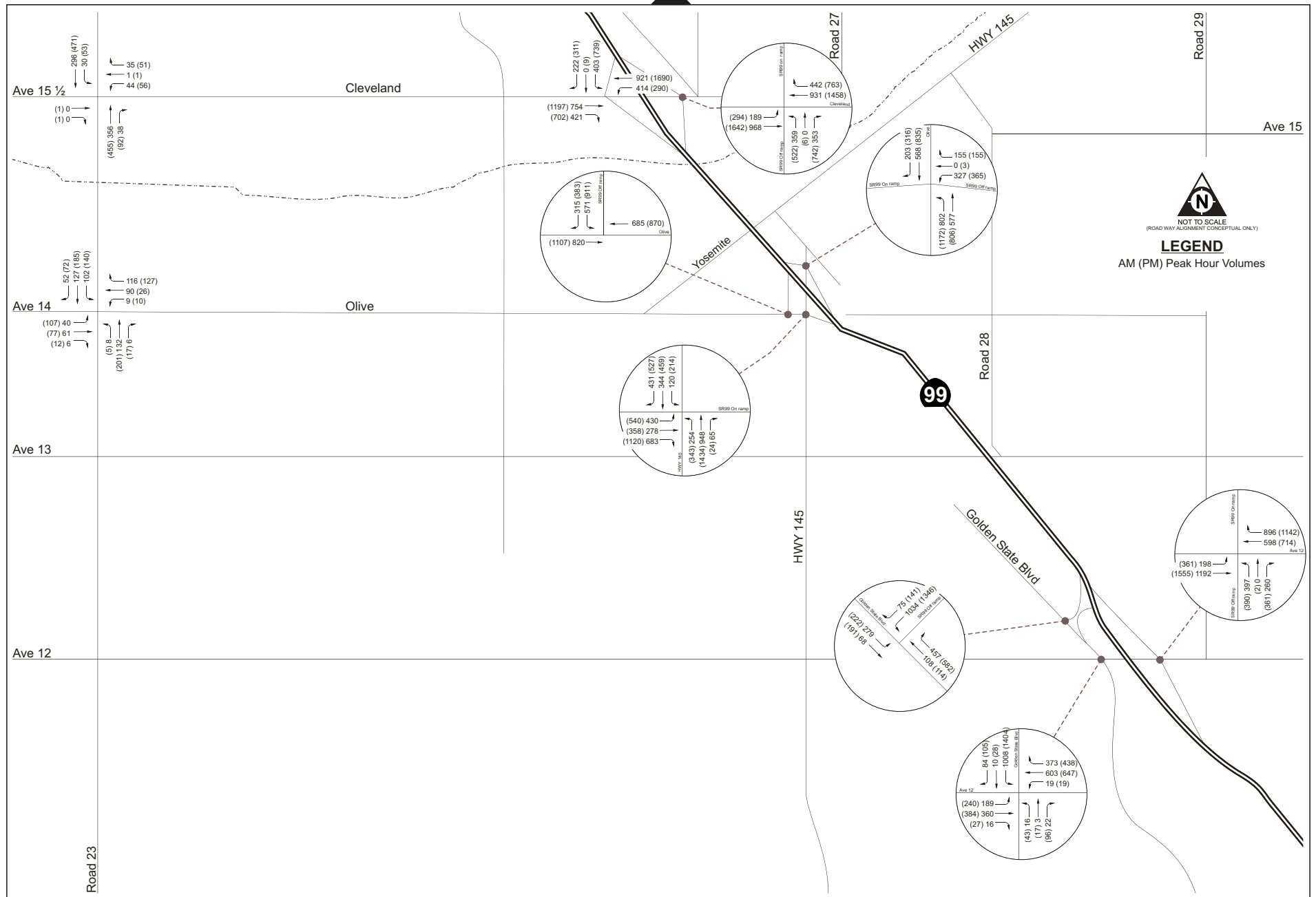


Figure 4.11-11
Madera Site – 2030 Intersection Volumes

TABLE 4.11-12
PEAK HOUR INTERSECTION CONDITIONS – 2030 WITHOUT PROJECT (MADERA SITE)

Intersection	LOS Thres- hold	2030 w/o Project			
		LOS	AM Delay (secs) ¹	PM LOS	PM Delay (secs)
Avenue 18½ at SR-99 SB ramps/Road 23					
• SB Approach	C	F	52.0	F	332.3
Avenue 18½ at SR-99 NB ramps					
• EB Left	C	A	7.5	B	10.1
• NB Approach		F	337.7	F	7523.8
Avenue 17 at SR-99 SB ramps	C	F	7445.5	F	---
Avenue 17 at SR-99 NB ramps					
• EB Left	C	D	27.7	F	617.2
• NB Approach		F	6790.7	F	---
Avenue 12/Golden State Boulevard at SR-99 SB ramps					
• SB Left-Through		A	9.1	A	7.5
• WB Approach	C	F	9323.4	F	9051.8
Avenue 12 at Golden State Boulevard	D	F	205.2	F	328.4
Avenue 12 at SR-99 NB ramps	C	C	21.5	E	57.9
Avenue 18 at Road 23					
• NB Left-Through-Right		A	0.0	A	0.2
• SB Left-Through-Right	D	A	0.8	A	1.0
• WB Approach		B	14.5	C	17.9
• EB Approach		C	16.4	C	24.8
Avenue 17 at Road 23					
• NB Left-Through-Right		A	3.2	A	3.3
• SB Left-Through-Right	D	A	0.8	A	0.3
• WB Approach		F	---	F	---
• EB Approach		F	---	F	---
Avenue 17 at Golden State Boulevard					
• EB Left		B	12.5	D	29.4
• WB Left	D	F	71.5	F	275.4
• NB Approach		F	---	F	---
• SB Approach		F	---	F	---
Ellis Street at Road 26	D	B	10.1	C	22.2
Avenue 15½ at Road 23					
• NB Left-Through-Right		A	0.0	A	0.0
• SB Left-Through-Right	D	A	1.1	A	1.7
• WB Approach		C	16.9	D	34.4
• EB Approach		A	0.0	C	19.0
Avenue 14 at Road 23	D	B	11.6	C	16.6
Avenue 16 at SR-99 SB ramps	C	A	7.3	B	10.6
Avenue 16/Ellis Street Overcrossing at	C	F	115.7	F	339.6

Aviation					
Avenue 16/Ellis Street at SR 99 SB Ramps	C	A	7.3	B	10.6
Avenue 16/Ellis Street at SR 99 NB Ramps	C	B	11.7	B	13.9
Cleveland Avenue/Avenue 15½ at SR-99 NB ramps	C	C	26.8	F	199.2
Cleveland Avenue/Avenue 15½ at SR-99 SB ramps	C	C	31.4	F	133.0
SR-145/Madera Avenue at SR-99 NB ramps	C	D	37.0	F	242.9
Olive Avenue/Avenue 14 at SR-99 SB off-ramp	C	C	29.7	F	163.2
Olive Avenue/Avenue 14/SR-99 SB on-ramp at SR-145	C	E	70.9	F	238.7
Avenue 18½ at Pistachio Drive					
• EB Left-Through	D	A	0.7	A	2.2
• SB Approach		C	24.8	F	187.5
Avenue 18½ at Golden State Boulevard/road 23					
• EB left-Through-Right	D	A	1.0	A	0.9
• WB Left-Through		A	6.6	A	7.5
• NB Approach		C	19.2	F	137.3
• SB Approach		F	429.1	F	9379.8

NOTES:¹ delay in seconds

Bold text denotes unacceptable LOS.

OF = overflow

--- = beyond software limitations

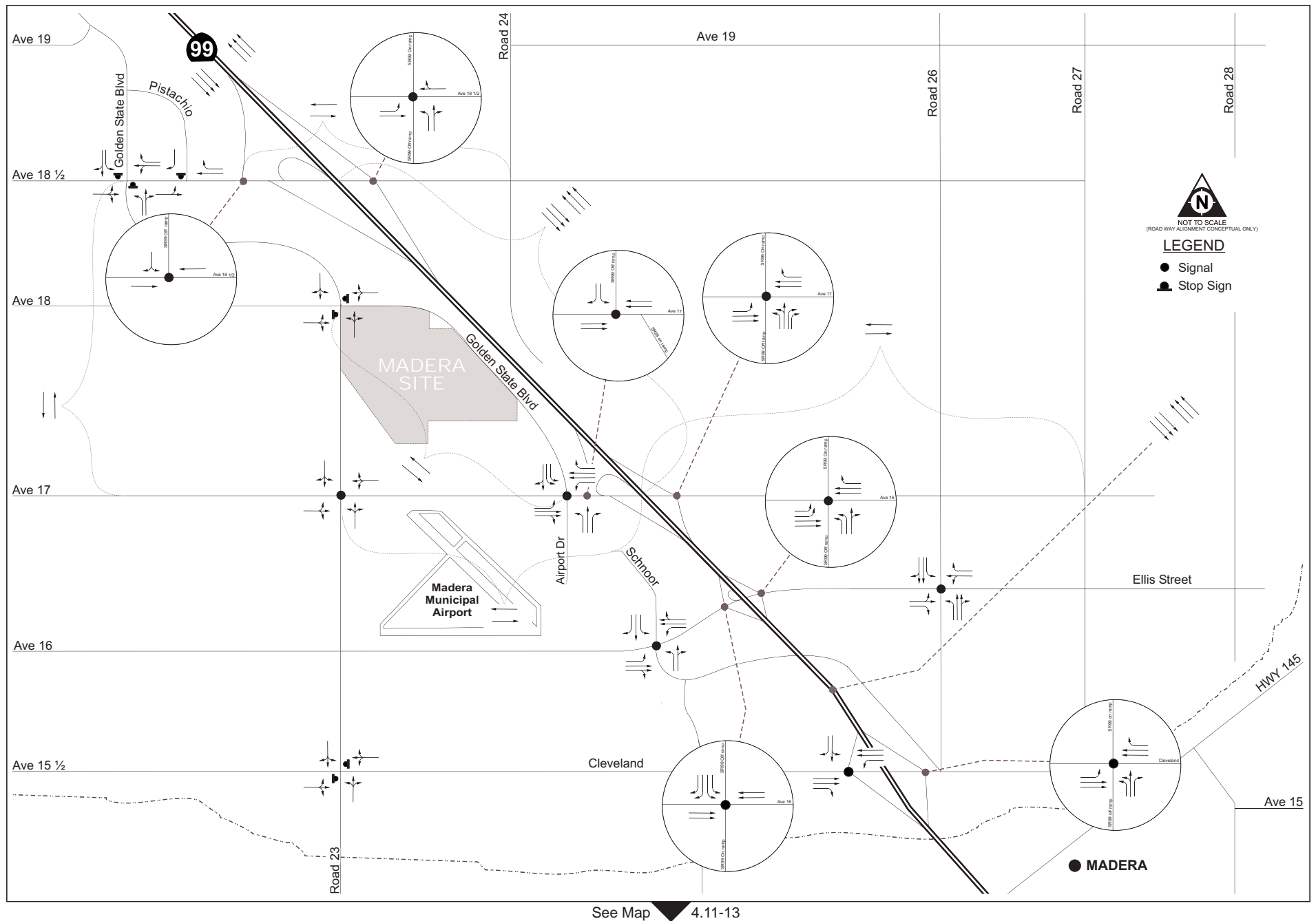
SOURCE: TPG Consulting, Inc. 2008; AES 2008.

- Olive Avenue/Avenue 14/SR-99 SB on-ramp at SR-145
- Avenue 18½ at SR-99 SB ramps/Road 23
- Avenue 18½ at SR-99 NB ramps
- Avenue 18½ at Pistachio Drive
- Avenue 18½ at Golden State Boulevard/Road 23

2030 Traffic Conditions With Project

This section discusses the 2030 traffic conditions with Alternative A project trips added. The 2030 Without Project conditions are reported as a baseline. **Figures 4.11-12** and **4.11-13** present the 2030 lane configuration and intersection control considered to be in place at that time after the implementation of Alternative A. The 2030 lane configuration and intersection control represent the existing configuration and controls plus improvements needed to mitigate impacts from the addition of project traffic generated under Alternative A in the Build-Out (2008) condition.

Freeway and Roadway Segment Performance. The 2030 Without Project traffic volumes were combined with vehicle trips expected to be generated by Alternative A. **Table 4.11-13** summarizes the 2030 With Alternative A peak hour freeway and roadway segment conditions. The 2030 Without Project conditions are provided as a baseline. With the addition of project traffic under Alternative



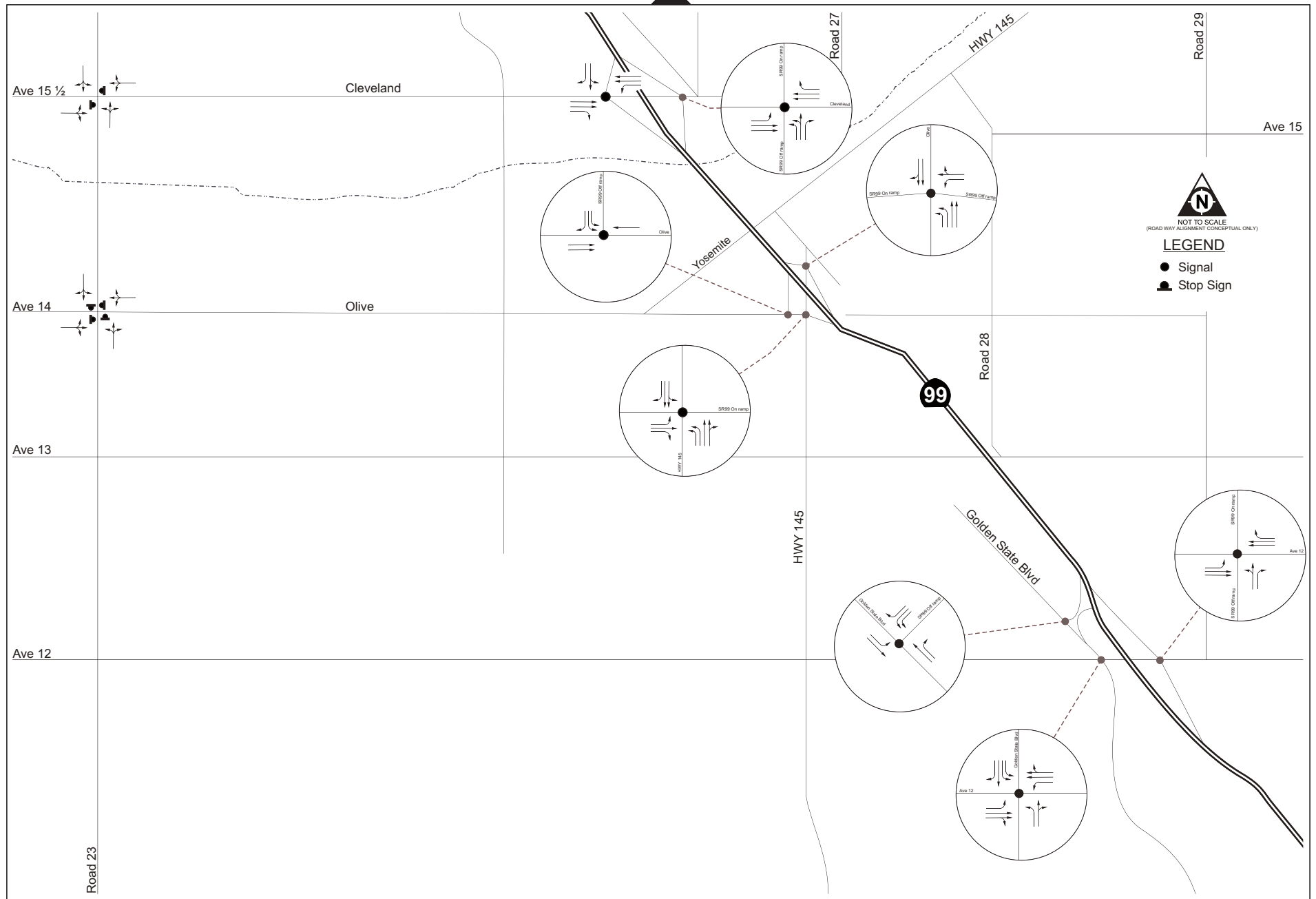


Figure 4.11-13
Madera Site – 2030 Lane Configuration and Intersection Control With Alternative A

TABLE 4.11-13
FREEWAY AND ROADWAY SEGMENT PERFORMANCE –
2030 WITH ALTERNATIVE A

Segment	LOS Threshold		2030				With Alternative A			
	LOS		Density (pc/mi/ln) ¹				LOS			
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Freeway Segment										
SR-99 NB – North of Avenue 18 ½	C	D	D	26.5	33.2		D	D	26.6	33.6
SR-99 SB – North of Avenue 18 ½	C	C	E	23.9	41.4		C	E	24.1	42.2
SR-99 NB – Avenue 18 ½ to Avenue 17	C	D	D	26.4	31.4		D	D	26.4	31.4
SR-99 SB – Avenue 18 ½ to Avenue 17	C	C	E	23.5	40.5		C	E	23.5	40.5
SR-99 NB – South of Avenue 17	C	E	F	39.0	---		E	F	42.6	---
SR-99 SB – South of Avenue 17	C	D	F	29.2	---		D	F	30.1	---
Roadway Segment										
Avenue 18½ - Road 24 to Road 23	D	A	B	NA	NA		A	B	NA	NA
Road 23 – Avenue 18½ to Avenue 17	D	D	D	NA	NA		D	D	NA	NA
Avenue 17 – Road 23 to SR-99	D	F	F	NA	NA		F	F	NA	NA
Avenue 17 – SR-99 to Road 27	D	E	F	NA	NA		F	F	NA	NA
Golden State Boulevard – Avenue 17 to Road 23	D	A	A	NA	NA		A	D	NA	NA

NOTES: **Bold** text denotes unacceptable LOS.

NA = not applicable

¹ density = passenger car per mile per lane

OF = overflow

--- = beyond software limitations

SOURCE: TPG Consulting, Inc., 2008; AES 2008.

A, the following six freeway segment and two roadway segments are shown to operate at an unacceptable LOS:

- SR-99 NB – North of Avenue 18½
- SR-99 SB – North of Avenue 18½
- SR-99 NB – Avenue 18½ to Avenue 17
- SR-99 SB – Avenue 18½ to Avenue 17
- SR-99 NB – South of Avenue 17
- SR-99 SB – South of Avenue 17
- Avenue 17 – Road 23 to SR-99
- Avenue 17 – SR-99 to Road 27

Intersection Operations. Table 4.11-14 summarizes the 2030 With Alternative A peak hour intersection conditions. The 2030 Without Project intersection conditions are provided as a baseline. The 2030 Without Project traffic volumes were combined with vehicle trips expected to be generated by Alternative A. With the addition of project traffic under Alternative A, the following 14 study intersections are forecast to operate at an unacceptable LOS:

- Avenue 17 at SR-99 SB ramps

- Avenue 18½ at SR-99 SB ramps/Road 23
- Avenue 17 at SR-99 NB ramps
- Avenue 12 at SR-99 NB ramps
- Avenue 12 at Golden State Boulevard
- Avenue 17 at Golden State Boulevard
- Avenue 16/Ellis Overcrossing at Aviation Drive
- Avenue 17 at Road 23
- Cleveland Avenue/Avenue 15½ at SR-99 NB ramps
- Cleveland Avenue/Avenue 15½ at SR-99 SB ramps
- SR-145/Madera Avenue at SR-99 NB ramps
- Olive Avenue/Avenue 14/SR-99 SB on-ramp at SR-145
- Avenue 18½ at Pistachio Drive
- Avenue 18½ at Golden State
-

TABLE 4.11-14
PEAK HOUR INTERSECTION CONDITIONS – 2030 WITH ALTERNATIVE A

Intersection	LOS Threshold	2030				With Project				
		AM		PM		AM		PM		
		LOS	Delay (secs) ¹	LOS	Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)	
Avenue 18½ at SR-99 SB ramps/Road 23										
• SB Approach	C	F	52.0	F	332.3	B	17.8	E	58.6	
Avenue 18½ at SR-99 NB ramps										
• EB Left	C	A	7.5	B	10.1	B	14.7	B	13.2	
• NB Approach		F	337.7	F	7523.8					
Avenue 17 at SR-99 SB ramps										
	C	F	7445.5	---	---	C	24.4	F	336.6	
Avenue 17 at SR-99 NB ramps										
• EB Left	C	D	27.7	F	617.2	E	75.1	F	268.4	
• NB Approach		F	6790.7	F	---					
Avenue 12/Golden State Boulevard at SR-99 SB ramps										
• SB left-Through	C	A	9.1	A	7.5	C	21.7	C	24.1	
• WB Approach		F	9323.4	F	9051.8					
Avenue 12 at Golden State Boulevard										
	D	F	205.2	F	328.4	E	75.6	F	155.1	
Avenue 12 at SR-99 NB ramps										
	C	C	21.5	E	57.9	C	22.9	E	63.8	
Avenue 18 at Road 23										
• NB left-Through-Right	D	A	0.0	A	0.2	A	0.0	A	0.2	
• SB left-Through-Right		A	0.8	A	1.0	A	2.3	A	2.7	
• WB Approach		B	14.5	C	17.9	C	15.3	C	21.2	
• EB Approach		B	16.4	C	24.8	C	18.8	D	31.5	
Avenue 17 at Road 23										
• SB left-Through-Right	D	A	3.2	A	3.3	E	58.6	F	256.4	
• SB left-Through-Right		A	0.8	A	0.3					
• SB left-Through-Right		F	---	F	---					
• SB left-Through-Right		F	---	F	---					
Avenue 17 at Golden State										

Intersection	LOS Threshold	2030				With Project			
		AM		PM		AM		PM	
		LOS	Delay (secs) ¹	LOS	Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)
Boulevard	D					E	65.1	F	416.9
• EB left		B	12.5	D	29.4				
• WB left		F	71.5	F	275.4				
• WB Approach		F	---	F	---				
• EB Approach		F	---	F	---				
Ellis Street at Road 26	D	B	10.1	C	22.2	A	9.9	B	19.8
Avenue 15½ at Road 23									
• NB left-Through-Right	D	A	0.0	A	0.0	A	0.0	A	0.0
• SB left-Through-Right		A	1.1	A	1.7	A	1.1	A	1.7
• WB Approach		C	16.9	D	34.4	C	17.5	E	38.1
• EB Approach		A	0.0	C	19.0	A	0.0	C	19.8
Avenue 14 at Road 23	D	B	11.6	C	16.6	B	11.8	C	17.8
Avenue 16/Ellis Overcrossing at Aviation Drive	C	F	115.7	F	399.6	F	126.3	F	415.2
Avenue 16/Ellis Street at SR 99 SB ramps	C	A	7.3	B	10.6	A	7.4	B	10.9
Avenue 16/Ellis Street at SR 99 NB ramps	C	B	11.7	B	13.9	B	11.7	B	13.8
Cleveland Avenue/Avenue 15½ at SR-99 NB ramps	C	C	26.8	F	199.2	B	16.8	F	93.9
Cleveland Avenue/Avenue 15½ at SR-99 SB ramps	C	C	31.4	F	133.0	C	27.5	E	80.3
SR-145/Madera Avenue at SR-99 NB ramps	C	D	37.0	F	242.9	D	51.2	F	264.3
Olive Avenue/Avenue 14 at SR-99 SB off-ramp	C	C	29.7	F	163.2	B	16.2	C	24.4
Olive Avenue/Avenue 14/SR-99 SB on-ramp at SR-145	C	E	70.9	F	238.7	C	24.4	F	99.2
Avenue 18½ at Pistachio Drive									
• EB Left-Through	C	A	0.7	A	2.2	A	0.7	B	2.5
• SB Approach		C	24.8	F	187.5	D	27.8	F	309.6
Avenue 18½ at Golden State Boulevard									
• EB left-Through-Right	C	A	1.0	A	0.9	A	1.0	A	0.9
• WB left-Through		A	6.6	A	7.5	A	6.9	A	7.9
• NB Approach		C	19.2	F	137.3	C	23.7	F	360.3
• SB Approach		F	429.1	F	9379.8	F	685.3	F	---

NOTES: ¹ delay in seconds**Bold** text denotes unacceptable LOS.

OF = overflow

--- = beyond software limitations

SOURCE: TPG Consulting, Inc., 2008; AES 2008.

Figures 4.11-14 and 4.11-15 present the 2030 With Alternative A intersection volumes at each of the Madera site study intersections.

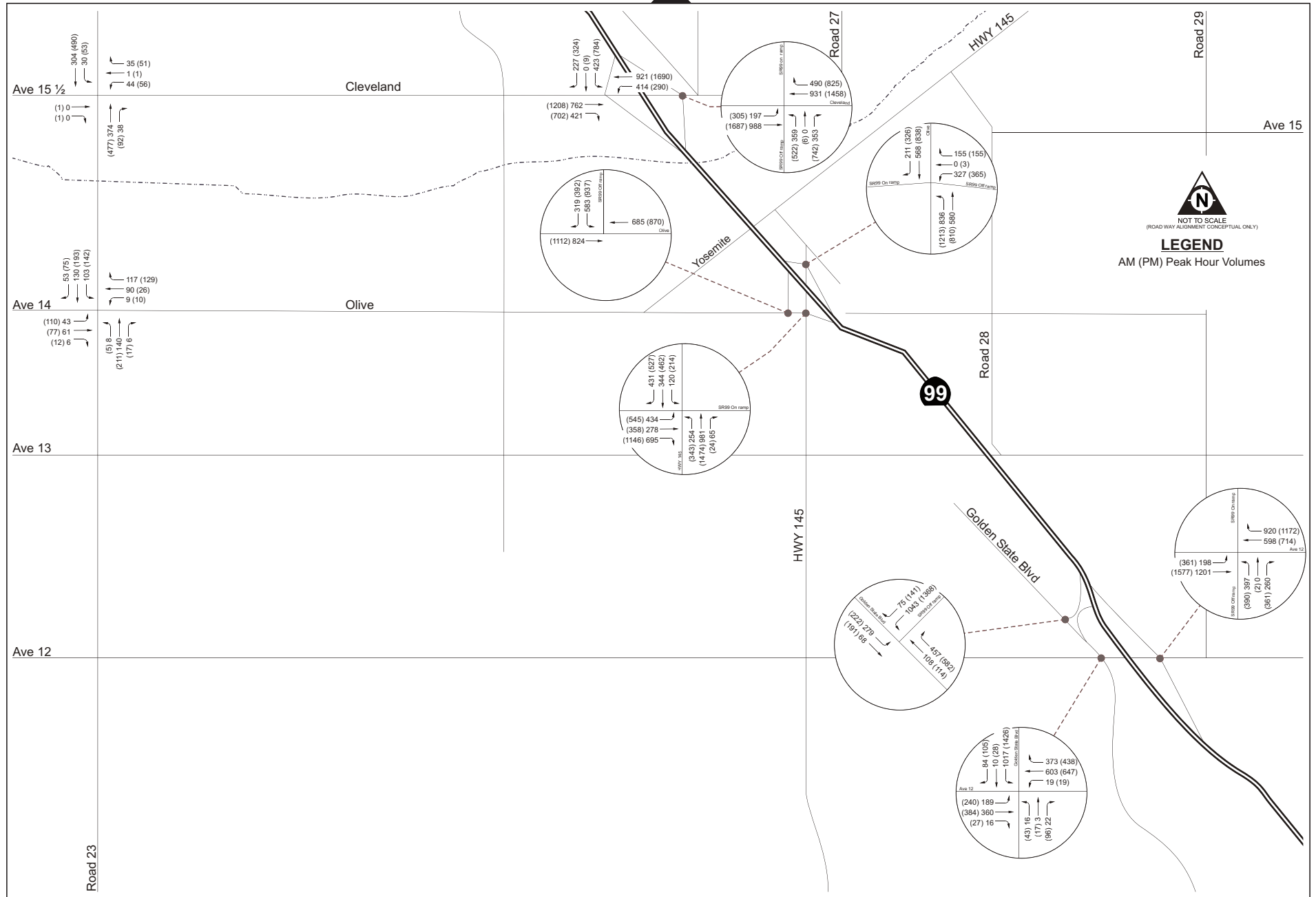


Figure 4.11-15
Madera Site – 2030 Intersection Volumes With Alternative A

Impact Analysis

With the addition of project traffic under Alternative A, 6 freeway segments, 2 roadway segments, and 14 intersections are shown to operate at an unacceptable LOS, resulting in a significant impact. A queuing issue is present along Avenue 17 between SR-99 and Golden State Boulevard/Airport Drive which shall require additional reconstruction of the Avenue 17/Golden State Boulevard intersection. Mitigation measures for the 2030 With Project (Alternative A) conditions are discussed in **Section 5.2.7** of this document. With the incorporation of project mitigation measures, each of the intersections and roadway segments that are shown to have an unacceptable LOS would be improved to an acceptable LOS. This would result in a less than significant impact.

Land Use

Cumulative land use effects that may occur in Madera County include:

- Conflicts with existing land uses.
- Preclusion of planned land uses.
- Disruption of access to existing or planned land uses.
- Disruption of orderly development.
- Creation of impediments to local planning documents.
- Unexpected/unplanned growth.

Although Alternative A would not be entirely consistent with all of the goals and policies of the Madera County General Plan, as noted in **Section 4.8.1**, no significant effects, such as precluding existing or planned land uses or disruption of access or conflicts with existing land uses, have been identified. Since no other tribal projects are planned on the Madera site and all other development occurring around the Madera site would be required to comply fully with local planning guidelines, no significant cumulative land use effects would occur.

Agriculture

The development projects in the area would lead to a loss of agricultural land. From 2000 to 2002 Madera County has seen a loss of 4,134 acres of agricultural lands. Conversion to urban uses accounted for 28 percent of the lost farmland during this period. Conversion to other land uses, primarily the creation of ranchettes and small water bodies accounted for the remaining 72 percent of the lost farmland. Assuming this trend continues due to the future population increase expected in Madera County, tens of thousands of acres of farmland would be lost during the next several decades. Development of a portion of the Madera site would contribute to the future regional loss of farmland.

Development would not otherwise affect agriculture in the region. Water allocations, for instance, would not be affected by Alternative A. Given that Alternative A would not induce further development in the region (**Section 4.12.1**) and would develop less than half of the Madera site, the loss of farmland is not considered a significant contribution to the cumulative loss of agricultural

land. Nonetheless, mitigation measures have been included in **Section 5.2.7** that would further reduce Alternative A's cumulative impacts to agriculture.

PUBLIC SERVICES

Public Water Utilities

As described in **Section 4.3**, Alternative A would not cause a loss of capacity with any public water utility. Thus, the cumulative effects of cumulative development on public water systems would not affect or be affected by Alternative A. A significant cumulative impact would not result.

Cumulative effects to the groundwater basin are discussed above under *Water Resources*.

Off-Site Wastewater Service

Cumulative effects related to off-site wastewater treatment and disposal could occur in the project area as the result of inadequate treatment capacity of local and regional wastewater service providers.

Table 4.11-15 lists the estimated flows at the City of Madera wastewater treatment plant (WWTP) along with the WWTP's capacity. The table also lists the average daily flows for Alternative A as well as the total combined flows.

As can be seen in **Table 4.11-15**, the recent WWTP expansion has provided the City with sufficient capacity until 2023. Alternative A would require approximately 0.27 MGD of treatment capacity. Since the Madera site is outside of the City's service area, the Tribe would be required to develop an agreement with the City for connection to wastewater treatment services. The agreement would ensure that the City has the desire and capacity to accept wastewater for Alternative A and will require that the Tribe pay all costs to develop wastewater service lines to the property and the continuing costs of service. Nonetheless, treatment of wastewater from the Alternative A would result in the capacity of the wastewater treatment plant being exceeded earlier than anticipated. This impact is considered significant. Mitigation is listed in **Section 5.2.8** to reduce this impact to less than significant.

TABLE 4.11-15
PROJECTED FLOWS FOR THE CITY OF MADERA WWTP

Year	WWTP Capacity	City of Madera Projected Average Daily Flow	Alternative A Average Daily Flow	Total Combined Flow
2005	7 ¹	5.70	0.27	5.97
2010	10.1	6.67	0.27	6.94
2015	10.1	7.81	0.27	8.08
2020	10.1	9.15	0.27	9.42
2023	10.1	10.1	0.27	10.37

Year	WWTP Capacity	City of Madera Projected Average Daily Flow	Alternative A Average Daily Flow	Total Combined Flow
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NOTES: ¹ Expansion of the WWTP to 10.1 has recently occurred in March 2008.

SOURCE: City of Madera WWTP Predesign Report, 2004.

On-Site Wastewater Service

Cumulative effects related to on-site wastewater treatment and disposal could occur in the project area as the result of inadequate treatment and disposal of wastewater. Adverse effects could include the degradation of surface water so that the wastewater discharges of other public wastewater service agencies are constrained.

As noted in **Sections 4.3.1** and **4.9.1**, given the high quality of effluent that would be discharged from an on-site WWTP, no significant water quality degradation would occur (see **Section 4.3.1**) and thus indirect cumulative effects to downstream public water users and dischargers would be less than significant, even considering the future development and expansion of public wastewater treatment facilities.

Solid Waste

Cumulative effects to solid waste facilities may occur if service providers are unable to provide adequate services to existing and planned development. There are three active transfer stations in Madera County, including the North Fork Transfer Station, Emadco Transfer Station, and Mammoth Recycling Center and Transfer Station. Within the County the only permitted and active landfill is the Fairmead Landfill. The Fairmead Landfill currently receives approximately 600 tons per day and has a permitted limit of 1,100 tons per day (Jones, pers. comm., 2005). The Alternative A development's solid waste generation would represent 0.69% of the landfill's daily intake. The remaining 500 tons is ample daily capacity for Alternative A and housing and business development expected in Madera County and the City of Madera. The expected closure date of the landfill is 2032. California counties are required to plan for future solid waste needs and submit reports to the California Integrated Waste Management Board. Due to County planning and landfill capacity, the cumulative impacts to solid waste services would be less than significant.

Electricity, Natural Gas, and Telecommunications

For Alternative A and the list of cumulative projects the electric and natural gas supplier is PG&E. AT&T is the main telecommunications provider in Madera County and has connections near Alternative A and the cumulative projects. PG&E provides electric and natural gas distribution service to approximately 14 million people throughout a 70,000-square-mile service area in northern and central California, including an extensive network in Madera County. PG&E has confirmed that it can provide service for Alternative A (Rivero, pers. comm., 2005; Harris, pers. comm., 2005).

The electrical demands of the anticipated cumulative projects are unknown. PG&E planning departments work with city and county planners to ensure that adequate capacity is available for future development. Individual projects would be responsible for paying development or user fees to receive electrical, natural gas, cable, and telephone services. Thus, the cumulative effects would be less than significant.

Law Enforcement

Cumulative effects related to law enforcement could occur in the region as the result of inadequate police service to serve expanded commercial and residential development. Cumulative developments in unincorporated Madera County may generate a need for additional law enforcement services. Both commercial and housing projects generate calls for service and patrol needs. Adverse effects could include an insufficient number of patrolling officers and inadequate facilities. The local governments in the region address increased service demand from new developments, such as law enforcement services, by requiring various development fees and assessments, and through increased property tax increments related to increases in assessed values. Alternative A would generate a need for additional officers, and through the MOUs with Madera County and the City of Madera, the Tribe is funding additional officers and law enforcement costs (**Appendix C**). Additionally, the positions and funding that the Tribe is funding would be beneficial in providing additional officers for expected growth. Thus, the cumulative effect would be less than significant.

Fire Protection and Emergency Medical Services

Cumulative effects related to fire protection and emergency medical services could occur in the region as the result of inadequate response time to existing and planned development. Adverse effects could include an insufficient number of staff, equipment, and stations to provide for the safety of persons and property. Fire protection for Alternative A and the cumulative projects identified previously, would be provided by the Madera County Fire Department and City of Madera Fire Department. Alternative A would be primarily served by the Madera County Fire Department; thus no significant cumulative effects would occur to the City of Madera Fire Department. Through the MOU the Tribe would provide funding for County fire protection services to serve Alternative A (**Appendix C**). Cumulative developments in unincorporated Madera County may generate a need for additional fire protection and emergency medical services. Services typically provided to housing developments and commercial developments are for medical emergencies and structural fires. Additional positions needed would be funded through the County budget, as the County funds the County Fire Department and is ultimately responsible for providing local fire suppression service. The local governments in the region address increased service demand from new developments, such as fire protection services, by requiring various development fees and assessments, and through increased property tax increments related to increases in assessed values. Additionally, the positions that the Tribe is funding would be beneficial in providing additional firefighters and equipment for expected growth, in cases where they are not needed to serve Alternative A. Thus, the cumulative effect to fire protection services would be less than significant.

Emergency medical services would be provided through a private service provider. These services are primarily funded by the individuals requiring service, through that individual's health insurance provider. The ambulance company's fee structure would account for any additional equipment or staff needed to serve the needs of Alternative A in combination with cumulative population growth. Thus, significant cumulative effects to emergency medical services would not occur.

School Services

As analyzed in **Section 4.7.1**, Alternative A, in combination with other planned development, would result in an increase in students that would need to be accommodated by local school districts. However, this increase in students can be accommodated by existing capacity and planned development of school facilities, which is ongoing due to population growth in Madera County. Thus, a significant cumulative effect to school services would not occur.

OTHER VALUES

Noise

Alternative A would result in changes in traffic noise levels as identified in **Table 4.11-16** for the cumulative year (2030) conditions. According to this table, cumulative project-related traffic noise level increases are only predicted to increase by 0.1 dBA at the site and 1.5 dBA at the nearest receptor. The predicted cumulative increase in noise is below the FICON significance criteria as illustrated in **Table 3.10-4**. Therefore, there are no significant cumulative noise effects issues associated with this alternative.

TABLE 4.11-16
ALTERNATIVE A PREDICTED NOISE LEVELS FOR YEAR 2030 CONDITIONS

Receptor	2030 No Project L_{eq}	2030 Plus Project L_{eq}	2030 No Project vs. Future Plus Project (Difference)
Alternative A	58.6	58.7	0.1
Residential Receptor	67.7	69.2	1.5

SOURCE: VRPA Technologies, 2008.

Hazardous Materials

Cumulative hazardous materials involvement has the potential to occur as a result of continuing development occurring in the region. This involvement could result from the use of hazardous materials in the construction process or the disturbance of existing hazardous materials present on a construction site. As noted in **Section 3.10**, there are no existing known hazardous materials on the Madera site. The amount and types of hazardous materials that would be stored, used, and generated during the construction and operation of Alternative A could have a potentially significant impact to the environment and public (see **Section 4.10.1**). Mitigation is included in **Section 5.2.9** to reduce potential impacts to less than significant from the construction and operation of Alternative A.

Visual Resources

As growth occurs within Madera County, cumulative effects to visual resources may take place as the result of increased development. However, cumulative development that takes place would be consistent with local land use regulations, including associated design guidelines. Development of Alternative A would not be consistent with all local land use regulations and would contribute to cumulative visual impacts. However, the Madera site is not located in a scenic corridor or an area of high aesthetic value. Substantial development is present in all directions from the Madera site, except to the west and numerous future developments are expected in the vicinity of the Madera site (see **Section 4.11.1**). Existing development includes an adjacent auto recycle yard, an abandoned commercial greenhouse, tall grain silos to the east, and substantial light industrial development to the south. The proposed project would be attractively designed as a resort facility (see **Sections 2.2** and **4.10.1**) and would not constitute a significant cumulative visual effect to an already semi-developed environment.

4.11.3 ALTERNATIVE B – REDUCED INTENSITY

LAND RESOURCES

As with Alternative A, local permitting requirements for construction would address regional stormwater, geotechnical, seismic and mining hazards; therefore, no significant cumulative impacts related to land resources would occur as a result of Alternative B.

WATER RESOURCES

Cumulative effects to water resources would be similar to those of Alternative A, but slightly lessened due to the smaller scale of the facilities proposed by Alternative B. Also the terms of the MID MOU would not apply to Alternative B, resulting in a potentially significant contribution to regional groundwater overdraft conditions. Mitigation measures are contained in **Section 5.2.2** that would reduce this impact to a less than significant level.

AIR QUALITY

Ozone and PM Emissions

In **Table 4.11-6** long-term 2020 operational emissions associated with Alternative B are compared to Countywide emissions forecasts for 2020. In 2020, unmitigated operation of Alternative B is estimated to result in:

- 6.20 tons per year (tpy) of ROG,
- 7.55 tpy of NO_x, and
- 13.89 tpy of PM₁₀ emissions.

As shown in **Table 4.11-6**, Alternative B generated only 0.094% of the Countywide total NO_x in 2020 and only generated 0.017% of ROG. The PM₁₀ contribution for Alternative B is a little more with 0.157% in 2020. The incremental effect of Alternative B is a relatively minor portion of the

Countywide total for one project for ROG, NO_x, and PM₁₀. Alternative B, along with other cumulative development, would exacerbate the regional trend towards higher PM₁₀ emissions but to a less than significant level, because of dust control measures being successfully implemented throughout the air basin. Although ROG and NO_x are below significance thresholds, mitigation measures are detailed in **Section 5.2.3**, which would further reduce emissions.

Table 4.11-7 presents a comparison of unmitigated operational and area source emissions for Alternative B to SJVAPCD emissions criteria. In 2020, ROG and NO_x unmitigated emissions generated by Alternative B would not exceed the 10-tpy significance thresholds; therefore air quality impacts under Alternative B would be considered less than significant, no mitigation is required.

Carbon Monoxide Concentrations

As described in the traffic study of the project alternatives, traffic operations at signalized study intersections would be LOS D or better with Alternative B under 2030 long-term future cumulative background conditions and traffic mitigation measures. Based on criteria presented in the University of California Davis Institute of Transportation Studies document *Transportation Project-Level Carbon Monoxide Protocol* (Garza, *et al.*, 1997), intersections operating at LOS D or better typically do not result in CO concentrations that exceed State or Federal standards. Therefore, Alternative B with traffic mitigation measures, in combination with increased traffic from cumulative development, would have a less-than-significant impact on CO air quality.

Odor Effects

Several commercial centers are planned in the area around the intersection of Avenue 17 and State Route 99. The SJVAPCD's list of common types of facilities that have been known to produce odors in the SJV occur mostly in manufacturing/industrial zones and no industrial areas are projected for the area, therefore Alternative B (which would not result in significant odors after the implementation of mitigation measures contained in **Section 5.2.3**), in combination with cumulative development, would have a less than significant odor effect.

Toxic Air Contaminants

Alternative B and other projects, when considered cumulatively, could result in potentially significant impacts from toxic air contaminants. Several commercial centers are planned in the area around the intersection of Avenue 17 and State Route 99. Potential toxic air contaminant sources such as gasoline dispensing facilities and dry cleaners could site in these commercial areas. SJVAPCD permit process, City permitting processes, and future environmental review processes (applied to future development) will combine to ensure that Alternative B in combination with cumulative development would have a less than significant effect from toxic air contaminants

Climate Change

The EPA and CARB approved URBEMIS 2007 emissions modeling software estimates that Alternative B would result in the emission of approximately 1,076 tons per year of CO₂ during

construction, which is expected to last 12 months (**Appendix S**). As shown in **Table 4.11-17**, during operation Alternative B would result in the emission of CH₄ and N₂O equivalent to 595 tpy of CO₂e. Indirect emissions of CO₂, CH₄, and N₂O are estimated at 7 tpy of CO₂e. Total annual emissions during operation of Alternative B would be equivalent to 17,605 tpy of CO₂e. Annual Alternative B GHG emissions would be approximately 0.0032 percent of California's predicted contribution to global GHG emissions in 2020 (see **Table 3.4-7**). Alternative B contributions to the annual global GHG emissions in 2020 would be approximately 0.0000021 percent.

The same state GHG reduction strategies would apply to Alternative B as Alternative A, given that Alternative B proposes commercial development similar to Alternative A. For the same reasons as Alternative A (see **Table 4.11-10**), Alternative B would not comply with one of the three applicable strategies, resulting in a potentially significant cumulative impact. A less than significant cumulative impact would result after the implementation of mitigation measures in **Section 5.2.3**.

TABLE 4.11-17
ESTIMATED ALTERNATIVE B OPERATION GHG EMISSIONS

CO ₂ Emissions ¹					
Mobile Sources		Area Sources			Total CO ₂ e
tons per year		tons per year			tons per year
16,725		278			17,003
CH ₄ and N ₂ O Emission from Mobile Sources ²					
Emission Factor (CO ₂ /CH ₄ /N ₂ O)	Miles Traveled	CH ₄	N ₂ O	Total CO ₂ e	
g/mile	miles/day	tons per year		tons per year	
552.08/0.05/0.05	89,281	38	557	595	
Indirect GHG emissions ²					
Emission Factor (Kg of CO ₂ /CH ₄ /N ₂ O)	Estimated kW-h Usage ³	CO ₂	CH ₄	N ₂ O	Indirect CO ₂ e
lb/MW-h	MW-h/year		tons per year		
804.54/0.006/0.0037	40	7	0.00	0.00	7
Total Operation CO ₂ e tons per year					17,605

¹ Estimated from EPA and CARB approved URBEMIS air quality program (**Appendix S**)

² Emission factors from Climate Change Action Registry

³ Estimated using 4,500 kilowatts-hours/month of power used.

Source: URBEMIS, 2007; Climate Change Action Registry, 2007.

BIOLOGICAL RESOURCES

The impacts of Alternative B to biological resources are similar, but lessened due to the smaller scope of Alternative B facilities, when compared with those of Alternative A. As described under Alternative A, impacts to wildlife and habitats, federally listed species, and waters of the U.S. would

be less than significant. Potential impacts to migratory birds would remain significant. Mitigation is discussed in **Section 5.2.4**, which would reduce impacts to a less than significant level.

CULTURAL RESOURCES

Significant cumulative impacts to cultural resources could occur if sites were lost, damaged, or destroyed without appropriate recordation or data recovery. Potential cumulative impacts for cultural resources issues would be similar to those of Alternative A. This would be a significant impact. Mitigation for potential cumulative impacts to unknown cultural resources has been specified in **Section 5.2.5**. Implementation of these mitigation measures would reduce impacts to less than significant.

SOCIOECONOMIC CONDITIONS

Cumulative socioeconomic effects of Alternative B would be similar to those of Alternative A, except that population growth would be reduced to 534 (resulting in a reduction to population related impacts – see **Section 4.7.1**), potential economic benefits would be lessened, and the MOU with the County would not apply. Thus, costs would potentially be incurred by the County that would not be compensated by the Tribe, forcing the County to degrade its services for other planned cumulative developments or obtain funds elsewhere, resulting in a potentially significant cumulative effect. This effect would be mitigated to a less than significant level through mitigation measures in **Section 5.2.6**.

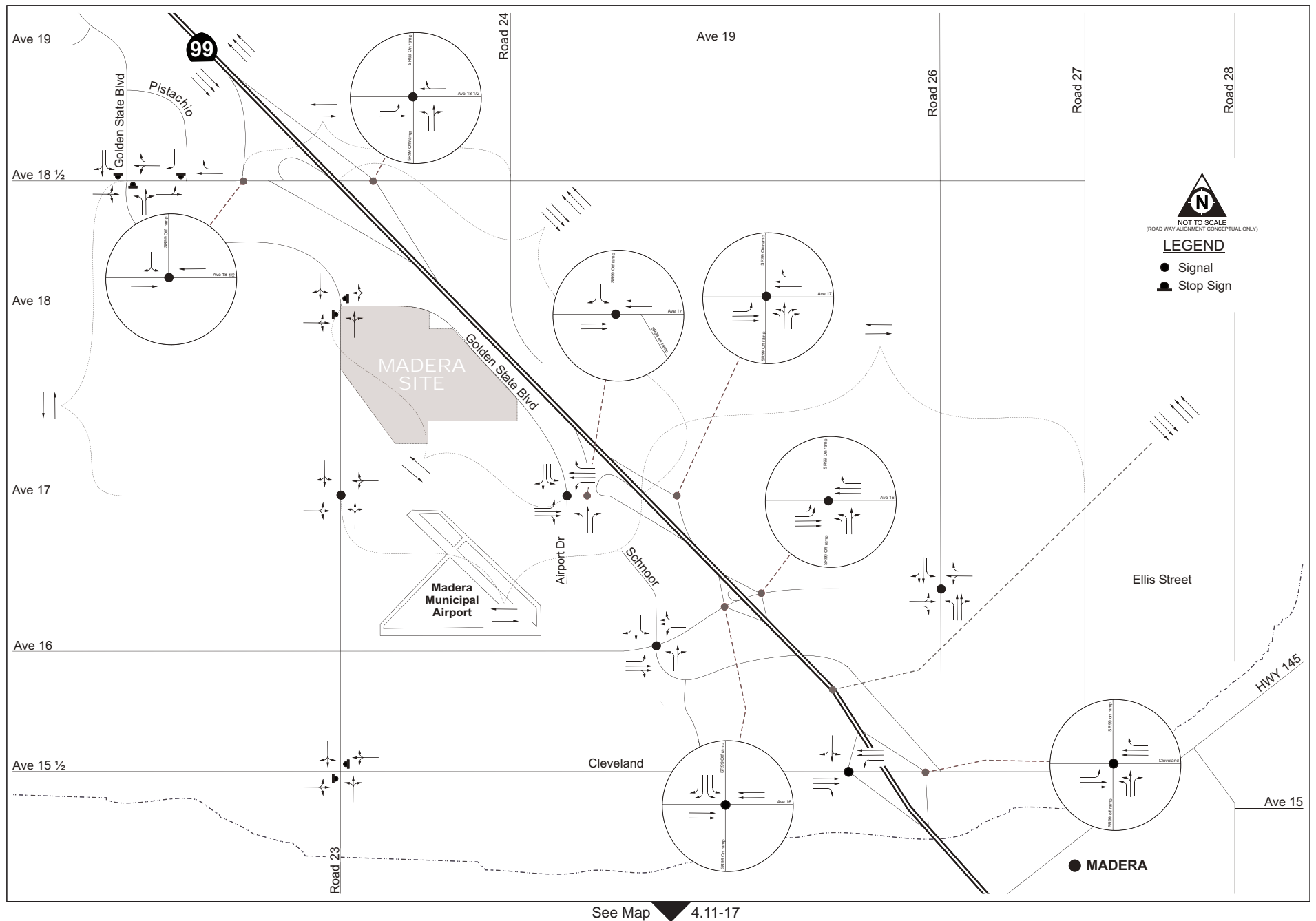
RESOURCE USE PATTERNS

Transportation/Circulation

2030 Traffic Condition With Project

This section discusses the 2030 traffic conditions with Alternative B project trips added. The 2030 Without Project conditions are reported as a baseline. The methodology for obtaining the baseline data is the same as Alternative A. **Figures 4.11-16** and **4.11-17** present the 2030 lane configuration and intersection control considered to be in place at that time. This 2030 lane configuration and intersection control represents the existing configuration and controls plus improvements needed to mitigate impacts from the addition of project traffic generated under Alternative B in the Build-Out (2008) condition.

Freeway and Roadway Segment Performance. The 2030 without Project traffic volumes were combined with vehicle trips expected to be generated by Alternative B. **Table 4.11-18** summarizes the 2030 With Alternative B peak hour freeway and roadway segment conditions. The 2030 Without Project conditions are provided as a baseline. With the addition of project traffic under Alternative B, the following six freeways and two roadway segments are shown to operate at an unacceptable LOS:



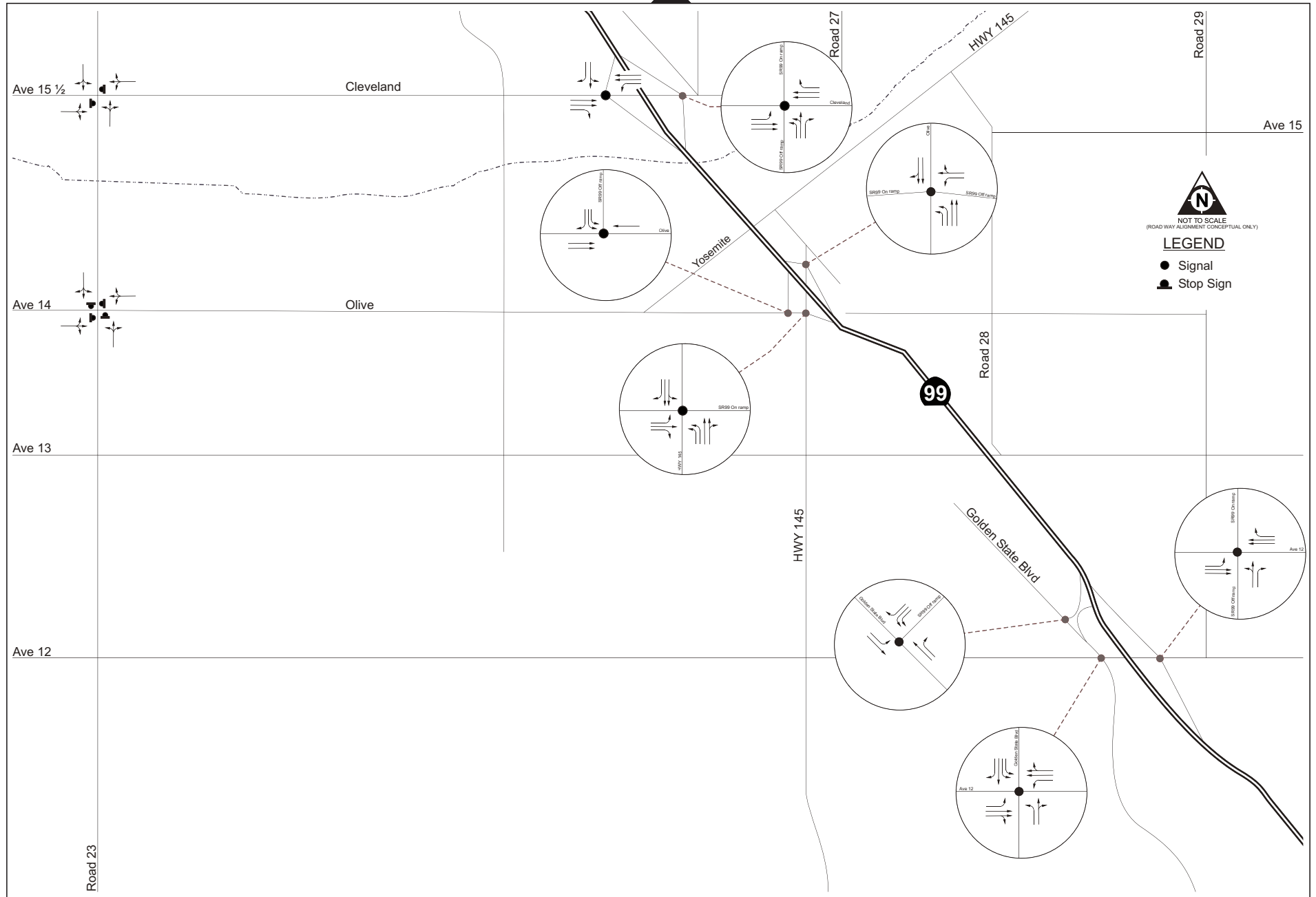


Figure 4.11-17
Madera Site – 2030 Lane Configuration and Intersection Control With Alternative B

- SR-99 NB – South of Avenue 17
- SR-99 NB – North of Avenue 18½
- SR-99 SB – North of Avenue 18½
- SR-99 NB – Avenue 18½ to Avenue 17
- SR-99 SB – Avenue 18½ to Avenue 17
- SR-99 SB – South of Avenue 17
- Avenue 17 – Road 23 to SR-99
- Avenue 17 – Road 23 to SR 99

Intersection Operations. The 2030 Without Project traffic volumes were combined with vehicle trips expected to be generated by Alternative B. **Table 4.11-19** summarizes the 2030 With Alternative B peak hour intersection conditions. The 2030 Without Project intersection conditions are provided as a baseline. With the addition of project traffic under Alternative B, the following 15 study intersections are forecast to operate at an unacceptable LOS:

TABLE 4.11-18
FREEWAY AND ROADWAY SEGMENT PERFORMANCE –
2030 WITH ALTERNATIVE B

Segment	LOS Threshold	2030				With Alternative B			
		LOS		Density (pc/mi/ln) ¹		LOS		Density (pc/mi/ln)	
		AM	PM	AM	PM	AM	PM	AM	PM
Freeway Segment									
SR-99 NB – North of Avenue 18½	C	D	D	26.5	33.2	D	D	26.6	34.3
SR-99 SB – North of Avenue 18½	C	C	E	23.9	41.4	C	E	24.1	43.0
SR-99 NB – Avenue 18½ to Avenue 17	C	D	D	26.4	31.4	D	D	26.5	32.5
SR-99 SB – Avenue 18½ to Avenue 17	C	C	E	23.5	40.5	C	E	23.7	42.1
SR-99 NB – South of Avenue 17	C	E	F	39.0	---	E	F	41.5	---
SR-99 SB – South of Avenue 17	C	D	F	29.2	---	D	F	29.8	---
Roadway Segment									
Avenue 18½ - Road 24 to Road 23	D	A	B	NA	NA	A	B	NA	NA
Road 23 – Avenue 18½ to Avenue 17	D	D	D	NA	NA	D	D	NA	NA
Avenue 17 – Road 23 to SR-99	D	F	F	NA	NA	F	F	NA	NA
Avenue 17 – SR-99 to Road 27	D	E	F	NA	NA	F	F	NA	NA
Golden State Boulevard – Avenue 17 to Road 23	D	A	A	NA	NA	A	C	NA	NA

NOTES: **Bold** text denotes unacceptable LOS.
 NA = not applicable
 OF = overflow
¹ density = passenger car per mile per lane
 --- = beyond software limitations

SOURCE: TPG Consulting, Inc., 2006; AES 2006.

- Avenue 17 at SR-99 SB ramps
- Avenue 18½ at SR-99 SB ramps/Road 23
- Avenue 17 at SR-99 NB ramps
- Avenue 12 at Golden State Boulevard
- Avenue 12 at SR-99 NB ramps
- Avenue 17 at Golden State Boulevard
- Avenue 17 at Road 23

- Avenue 15½ at Road 23
- Avenue 16/Ellis Street Overcrossing at Aviation Drive
- Cleveland Avenue/Avenue 15½ at SR 99 NB ramps
- Cleveland Avenue/Avenue 15½ at SR 99 SB ramps
- SR 145/Madera Avenue at SR 99 NB ramps
- Olive Avenue/Avenue 14/SR 99 SB on-ramp at SR 145
- Avenue 18½ at Pistachio Drive
- Avenue 18½ at Golden State Boulevard

TABLE 4.11-19
PEAK HOUR INTERSECTION CONDITIONS – 2030 WITH ALTERNATIVE B

Intersection	LOS Threshold	2030				With Project			
		LOS	AM Delay (secs) ¹	LOS	PM Delay (secs)	LOS	AM Delay (secs)	LOS	PM Delay (secs)
Avenue 18½ at SR-99 NB ramps									
• EB Left	C	A	7.5	B	10.1	B	14.5	B	12.8
• NB Approach		F	337.7	F	7523.8			F	12.8
Avenue 18½ at SR-99 SB ramps/Road 23									
• SB Approach	C	F	52.0	F	332.3	B	17.3	D	54.9
Avenue 17 at SR-99 SB ramps									
• SB Approach	C	F	7445.5	F	---	B	17.1	F	277.5
Avenue 17 at SR-99 NB ramps									
• EB Left	C	D	27.7	F	617.2	E	69.3	F	260.2
• NB Approach		F	6790.7	F	---			F	260.2
Avenue 12/Golden State Boulevard at SR-99 SB ramps									
• SB Left-Through	C	A	9.1	A	7.5	C	21.7	C	24.0
• WB Approach		F	9323.4	F	9051.8			C	24.0
Avenue 12 at Golden State Boulevard									
	D	F	205.2	F	328.4	E	75.2	F	154.2
Avenue 12 at SR-99 NB ramps									
	C	C	21.5	E	57.9	C	22.8	E	62.8
Avenue 18 at Road 23									
• NB left-Through-Right	D	A	0.0	A	0.2	A	0.0	A	0.2
• SB left-Through-Right		A	0.8	A	1.0	A	1.9	A	2.2
• WB Approach		B	14.5	C	17.9	B	14.9	C	20.3
• EB Approach		C	16.4	C	24.8	C	18.0	D	29.3
Avenue 17 at Road 23									
• NB Left-Through-Right	D	A	3.2	A	3.3				
• SB Left-Through-Right		A	0.8	A	0.3				

Intersection	LOS Threshold	2030				With Project			
		LOS	AM Delay (secs) ¹	LOS	PM Delay (secs)	LOS	AM Delay (secs)	LOS	PM Delay (secs)
• WB Approach		F	---	F	---	E	56.3	F	248.6
• EB Approach		F	---	F	---				
Avenue 17 at Golden State Boulevard									
• EB Left	D	B	12.5	D	29.4				
• WB Left		F	71.5	F	275.4	E	62.5	F	201.9
• NB Approach		F	---	F	---				
• SB Approach		F	---	F	---				
Ellis Street at Road 26	D	B	10.1	C	22.2	A	9.9	B	19.7
Avenue 15½ at Road 23									
• NB left-Through-Right	D	A	0.0	A	0.0	A	0.0	A	0.0
• SB left-Through-Right		A	1.1	A	1.7	A	1.1	A	1.7
• WB Approach		C	16.9	D	34.4	C	17.3	E	37.1
• EB Approach		A	0.0	C	19.0	A	0.0	C	19.6
Avenue 14 at Road 23	D	B	11.6	C	16.6	B	11.7	C	17.5
Avenue 16/Ellis Overcrossing at Aviation Drive	C	F	115.7	F	399.6	F	123.5	F	409.2
Avenue 16 at SR 99 SB ramps	C	A	7.3	B	10.6	A	7.4	EB	10.8
Avenue 16/Ellis Street at SR 99 NB ramps	C	B	11.7	B	13.9	B	11.7	B	13.9
Cleveland Avenue/Avenue 15½ at SR-99 NB ramps	C	C	26.8	F	199.2	B	16.9	F	91.7
Cleveland Avenue/Avenue 15½ at SR-99 SB ramps	C	C	31.4	F	133.0	C	27.0	E	78.2
SR-145/Madera Avenue at SR-99 NB ramps	C	D	37.0	F	242.9	D	48.5	F	257.0
Olive Avenue/Avenue 14 at SR-99 SB off-ramp	C	C	29.7	F	163.2	B	16.2	C	24.3
Olive Avenue/Avenue 14/SR-99 SB on-ramp at SR-145	C	E	70.9	F	238.7	C	24.4	F	98.0
Avenue 18½ at Pistachio Drive									
• EB Left-Through	C	A	0.7	A	2.2	A	0.7	A	2.6
• SB Approach		C	26.7	F	277.0	D	26.7	F	277.0
Avenue 18½ at Golden State Boulevard									
• EB left-Through-Right	C	A	1.0	A	0.9	A	1.0	A	0.9
• WB left-Through-Right		A	6.6	A	7.5	A	7.3	A	8.7
• NB Approach		C	19.2	F	137.3	D	31.1	F	---
• SB Approach		F	429.1	F	9379.8	F	593.0	F	---

NOTES: ¹ delay in seconds

² Per Caltrans request to analyze Avenue 16/Avenue 16 connector at SR-99 NB ramps and Avenue 16 at SR-99 NB ramp connector instead of Avenue 16 at SR-99 NB ramps.

Bold text denotes unacceptable LOS.

OF = overflow

--- = beyond software limitations

SOURCE: TPG Consulting, Inc., 2008; AES 2008.

Figures 4.11-18 and 4.11-19 present the 2030 With Alternative B intersection volumes at each of the Madera site study intersections.

Impact Analysis

With the addition of project traffic under Alternative B, 6 freeway segments, 2 roadway segment, and 15 intersections are shown to operate at an unacceptable LOS, resulting in a significant impact. A queuing issue is present along Avenue 17 between SR-99 and Golden State Boulevard/Airport Drive which shall require additional reconstruction of the Avenue 17/Golden State Boulevard intersection. Mitigation measures for the 2030 With Project (Alternative B) conditions are discussed in **Section 5.2.7** of this document. With the incorporation of project mitigation measures, each of the intersections and roadway segments that are shown to have an unacceptable LOS would be improved to an acceptable LOS. This would result in a less than significant impact.

Land Use

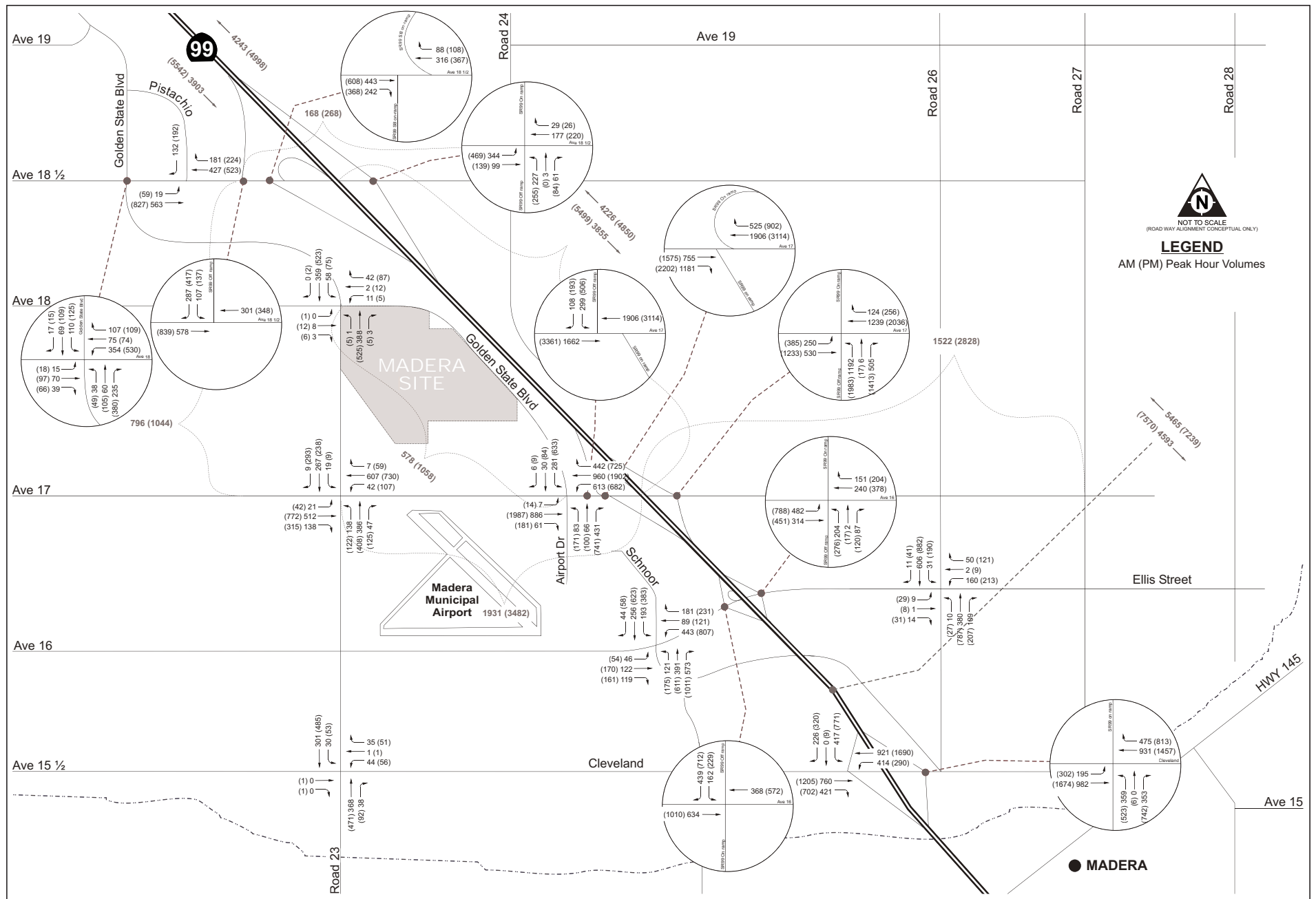
Cumulative land use effects would be similar to those of Alternative A, given the similar, although reduced intensity, land use. Thus, a less than significant cumulative land use effect would result.

Agriculture

Cumulative effects to agriculture would be similar to those of Alternative A, but reduced due to the reduced intensity development. As with Alternative A, a less than significant cumulative effect to agriculture would result. Nonetheless, mitigation measures have been included in **Section 5.2.7** that would further reduce Alternative B's cumulative impacts to agriculture.

PUBLIC SERVICES

Effects to public services would be similar to those of Alternative A, except that the MOU with the County would not apply, resulting in potentially significant impacts to public services. Mitigation measures in **Section 5.2.8** would ensure cumulative effects to public services are less than significant.



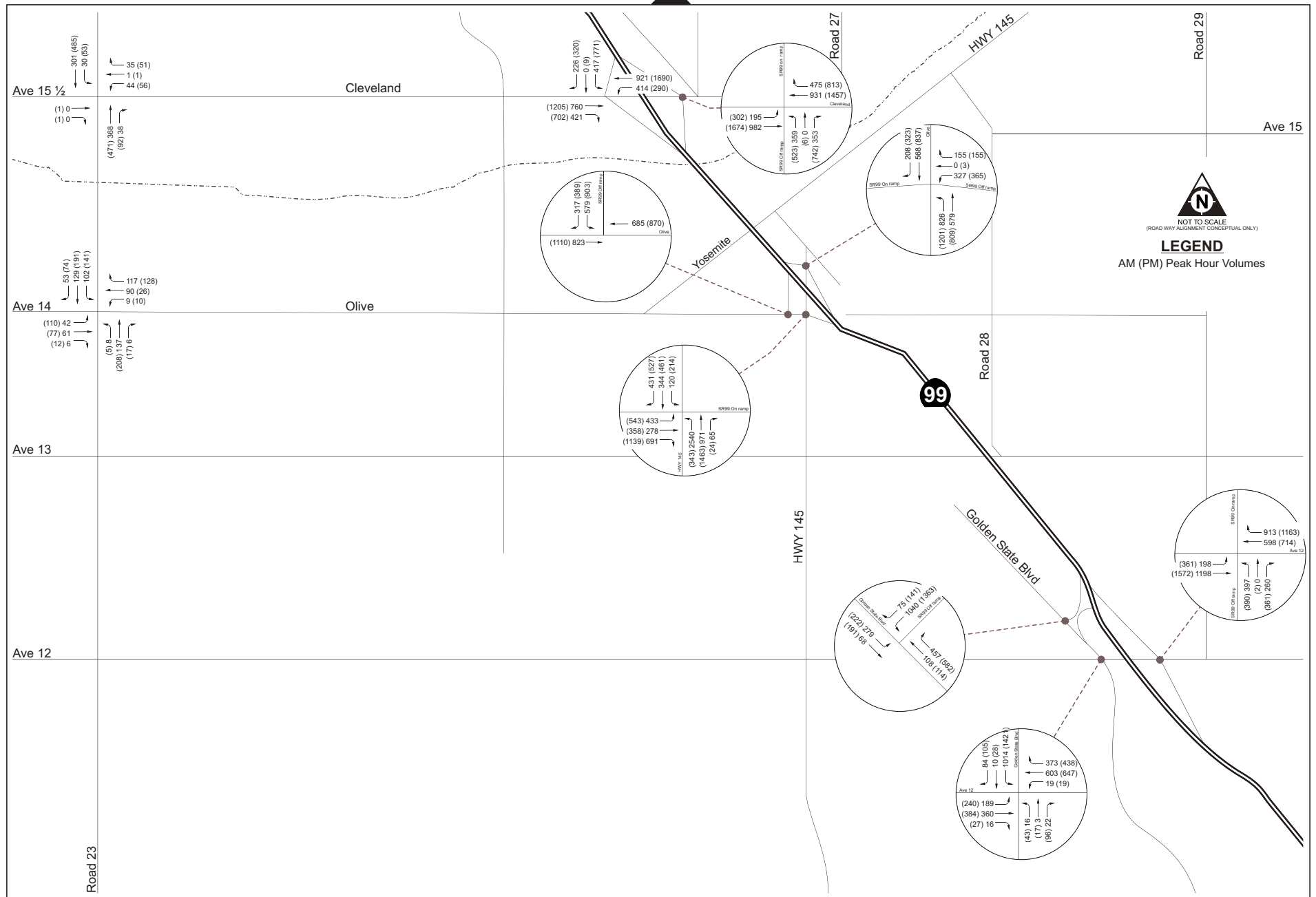


Figure 4.11-19
Madera Site – 2030 Intersection Volumes With Alternative B

OTHER VALUES**Noise**

Alternative B would result in changes in traffic noise levels as identified in **Table 4.11-20** for the cumulative year (2030) conditions. According to this table, cumulative project-related traffic noise level increases are only predicted to increase by less than 0.1 dBA at the site and 1.5 dBA at the nearest receptor. The predicted cumulative increase in noise is below the FICON significance criteria as illustrated in **Table 3.10-4**. Therefore, there are no significant cumulative noise effects issues associated with this alternative.

TABLE 4.11-20
ALTERNATIVE B PREDICTED NOISE LEVELS FOR YEAR 2030 CONDITIONS

Receptor	2030 No Project L _{eq}	2030 Plus Project L _{eq}	2030 No Project vs. Future Plus Project (Difference)
Alternative B	58.0	58.0	0.0
Residential Receptor	67.7	69.2	1.5

SOURCE: VRPA Technologies, 2008.

Hazardous Materials

Cumulative hazardous materials impacts would be similar to Alternative A, given the similar scope of construction that would occur on the Madera site and the identical cumulative development that would occur in the County. The amount and types of hazardous materials that would be stored, used, and generated during the construction and operation of Alternative B could have a potentially significant impact to the environment and public (see **Section 4.10.2**). Mitigation is included in **Section 5.2.9** to reduce potential impacts to less than significant from the construction and operation of Alternative B.

Visual Resources

Cumulative visual resources effects would be similar to those of Alternative A, except reduced in intensity given that Alternative B would not include the development of a hotel. As with Alternative A, a less than significant cumulative visual resources effect would result.

4.11.4 ALTERNATIVE C – NON-GAMING**LAND RESOURCES**

As with Alternative A, local permitting requirements for construction would address regional stormwater, geotechnical, seismic and mining hazards; therefore, no cumulative impacts related to land resources would occur as a result of Alternative C.

WATER RESOURCES

Cumulative effects to water resources would be similar to those of Alternative A, but slightly lessened due to the smaller scale of the facilities proposed by Alternative C. Also the terms of the MID MOU would not apply to Alternative C, resulting in a potentially significant contribution to regional groundwater overdraft conditions. Mitigation measures are contained in **Section 5.2.2** that would reduce this impact to a less than significant level.

AIR QUALITY

Ozone and PM Emissions

In **Table 4.11-6** long-term 2020 operational emissions associated with Alternative C are compared to Countywide emissions forecasts for 2020. In 2020, unmitigated operation of Alternative C is estimated to result in:

- 8.185 tpy of ROG,
- 8.89 tpy of NO_x, and
- 15.84 tpy of PM₁₀ emissions.

As shown in **Table 4.11-6**, Alternative C generated only 0.112% of the Countywide total NO_x in 2020 and only generated 0.022% of ROG. The PM₁₀ contribution for Alternative C is a little more with 0.178% in 2020. The incremental effect of Alternative C is a relatively minor portion of the Countywide total for one project for ROG, NO_x, and PM₁₀. Alternative C, along with other cumulative developments, would exacerbate the regional trend towards higher PM₁₀ emissions but to a less than significant level, because of dust control measures being successfully implemented throughout the air basin.

Table 4.11-7 presents a comparison of unmitigated operational and area source emissions for Alternative C to SJVAPCD emissions criteria. In 2020, ROG and NO_x unmitigated emissions generated by Alternative C would not exceed the 10-tpy significance thresholds; therefore air quality impacts under Alternative C would be less than significant.

Carbon Monoxide Concentrations

As described in the traffic study of the project alternatives, traffic operations at signalized study intersections would be LOS D or better with Alternative C under 2030 long-term future cumulative background conditions and traffic mitigation measures. Based on criteria presented in the University of California Davis Institute of Transportation Studies document *Transportation Project-Level Carbon Monoxide Protocol* (Garza, *et al.*, 1997), intersections operating at LOS D or better typically do not result in CO concentrations that exceed State or Federal standards.

Therefore, Alternative C with traffic mitigation measures, in combination with increased traffic from cumulative development, would have a less-than-significant impact on CO air quality.

Odor Effects

Several commercial centers are planned in the area around the intersection of Avenue 17 and State Route 99. The SJVAPCD's list of common types of facilities that have been known to produce odors in the SJV occur mostly in manufacturing/industrial zones and no industrial areas are projected for the area, therefore Alternative C (which would not result in significant odors after the implementation of mitigation measures contained in **Section 5.2.3**), in combination with cumulative development, would have a less than significant odor effect.

Toxic Air Contaminants

Alternative C and other commercial projects, when considered cumulatively, could result in potentially significant impacts from toxic air contaminants. Several other commercial centers are planned in the area around the intersection of Avenue 17 and State Route 99. Potential toxic air contaminant sources such as gasoline dispensing facilities and dry cleaners could site in these commercial areas. SJVAPCD permit process, City permitting processes, and future environmental review processes (applied to future development) will combine to ensure that Alternative C in combination with cumulative development would have a less than significant effect from toxic air contaminants.

Climate Change

The EPA and CARB approved URBEMIS 2007 emissions modeling software estimates that Alternative C would result in the emission of approximately 1,180 tons per year of CO₂ during construction, which is expected to last 12 months (**Appendix S**). As shown in **Table 4.11-21**, during

TABLE 4.11-21
ESTIMATED PROJECT OPERATION GHG EMISSIONS

CO ₂ Emissions ¹					
Mobile Sources		Area Sources			Total CO ₂ e
tons per year		tons per year			tons per year
19,154		402			19,566
CH ₄ and N ₂ O Emission from Mobile Sources ²					
Emission Factor (CO ₂ /CH ₄ /N ₂ O)	Miles Traveled	CH ₄	N ₂ O	Total CO ₂ e	
g/mile	miles/day	tons per year		tons per year	
552.08/0.05/0.05	101,760	43	635	678	
Indirect GHG emissions ²					
Emission Factor (Kg of CO ₂ /CH ₄ /N ₂ O)	Estimated kW-h Usage ³	CO ₂	CH ₄	N ₂ O	Indirect CO ₂ e
lb/MW-h	MW-h/year	tons per year			
804.54/0.006/0.0037	40	7	0	0	7
Total Operation CO ₂ e tons per year					39,797

¹ Estimated from EPA and CARB approved URBEMIS air quality program (**Appendix W**)

² Emission factors from Climate Change Action Registry

³ Estimated using 4,500 kilowatts-hours/month of power used.

Source: URBEMIS, 2007; Climate Change Action Registry, 2007.

operation Alternative C would result in the emission of CH₄ and N₂O equivalent to 678 tpy of CO₂e. Indirect emissions of CO₂, CH₄, and N₂O are estimated at 7 tpy of CO₂e. Total annual emissions during operation of Alternative C would be equivalent to 39,797 tpy of CO₂e. Annual Alternative C GHG emissions would be approximately 0.0073 percent of California's predicted contribution to global GHG emissions in 2020 (see **Table 3.4-7**). Alternative C contributions to the annual global GHG emissions in 2020 would be approximately 0.0000046 percent.

The same state GHG reduction strategies would apply to Alternative C as Alternative A, given that Alternative C proposes commercial development similar to Alternative A. For the same reasons as Alternative A (see **Table 4.11-10**), Alternative C would not comply with one of the three applicable strategies, resulting in a potentially significant cumulative impact. A less than significant cumulative impact would result after the implementation of mitigation measures in **Section 5.2.3**.

BIOLOGICAL RESOURCES

The impacts of Alternative C to biological resources are similar, but lessened due to the smaller scope of Alternative C facilities, when compared with those of Alternative A. As described under Alternative A, impacts to wildlife and habitats, federally listed species, and waters of the U.S. would be less than significant. Potential impacts to migratory birds would remain significant. Mitigation is discussed in **Section 5.2.4**, which would reduce impacts to a less than significant level.

CULTURAL RESOURCES

Significant cumulative impacts to cultural resources could occur if sites were lost, damaged, or destroyed without appropriate recordation or data recovery. Potential cumulative impacts for cultural resources issues would be similar to those of Alternative A. This would be a significant effect. Mitigation for potential cumulative impacts to unknown cultural resources has been specified in **Section 5.2.5**. Implementation of these mitigation measures would reduce impacts to less than significant.

SOCIOECONOMIC CONDITIONS

Cumulative socioeconomic effects of Alternative C would be similar to those of Alternative A, except that potential economic beneficial effects would be lessened, population growth would be reduced to 194 (resulting in a reduction to population related impacts – see **Section 4.7.1**), the concerns with gaming on the site would not apply, and the MOU with the County would not apply. As noted above, a number of cumulative retail projects are currently planned in the vicinity of the Madera site. It is likely that the later of these projects to be developed would not be developed at the same scale as previously planned after the implementation of Alternative C, which would provide a new source of retail competition to the area. As with Alternative B, costs would potentially be incurred by the County which would not be compensated by the Tribe, forcing the County to degrade their services generally in order to provide services to the growing local population or obtain funds

elsewhere, resulting in a potentially significant cumulative effect. This effect would be mitigated to a less than significant level through mitigation measures in **Section 5.2.6**.

RESOURCE USE PATTERNS

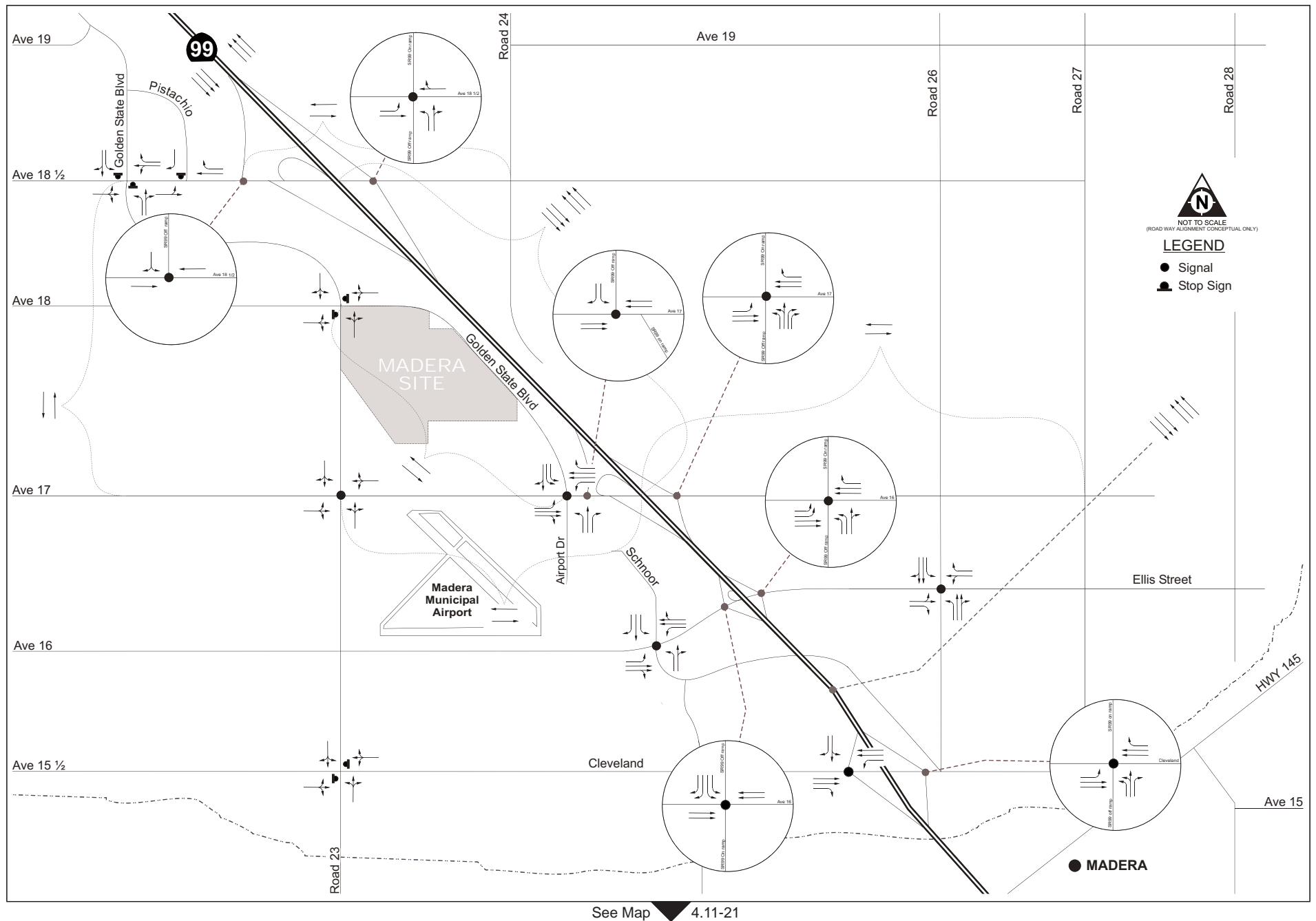
Transportation/Circulation

2030 Traffic Condition with Project

This section discusses the 2030 traffic conditions with Alternative C project trips added. The 2030 Without Project conditions are reported as a baseline. **Figures 4.11-20** and **4.11-21** present the 2030 lane configuration and intersection control considered to be in place at that time. This 2030 lane configuration and intersection control represents the existing configuration and controls plus improvements needed to mitigate impacts from the addition of project traffic generated under Alternative C in the Build-Out (2008) condition.

Freeway and Roadway Segment Performance. The 2030 Without Project traffic volumes were combined with vehicle trips expected to be generated by Alternative C. **Table 4.11-22** summarizes the 2030 With Alternative C peak hour freeway and roadway segment conditions. The 2030 Without Project conditions are provided as a baseline. With the addition of project traffic under Alternative C, the following six freeway segments and three roadway segment are shown to operate at an unacceptable LOS:

- SR-99 NB – North of Avenue 18½
- SR-99 SB – North of Avenue 18½
- SR-99 NB – Avenue 18½ to Avenue 17
- SR-99 SB – Avenue 18½ to Avenue 17
- SR-99 NB – South of Avenue 17
- SR-99 SB – South of Avenue 17
- Avenue 17 – Road 23 to SR 99
- Avenue 17 – SR-99 to Road 27
- Road 23 – Avenue 18½ to Avenue 17



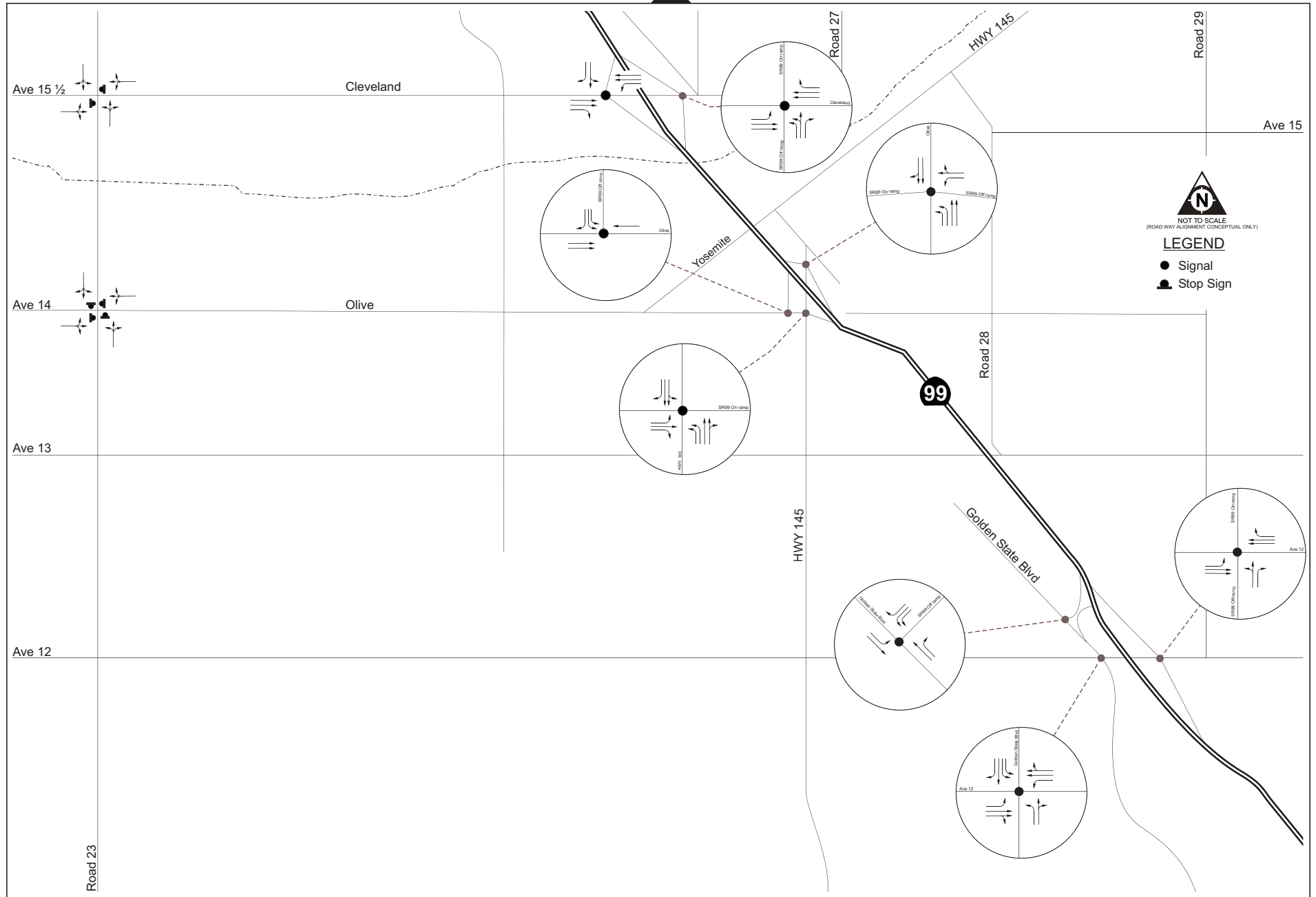


Figure 4.11-21
Madera Site – 2030 Lane Configuration and Intersection Control With Alternative C

TABLE 4.11-22
FREEWAY AND ROADWAY SEGMENT PERFORMANCE –
2030 WITH ALTERNATIVE C

Segment	LOS		2030		With Alternative C				
	Threshold	LOS		Density (pc/mi/ln) ¹		LOS		Density (pc/mi/ln)	
		AM	PM	AM	PM	AM	PM	AM	PM
Freeway Segment									
SR-99 NB – North of Avenue 18½	C	D	D	26.5	33.2	D	D	26.6	34.3
SR-99 SB – North of Avenue 18½	C	C	E	23.9	41.4	C	E	24.1	43.0
SR-99 NB – Avenue 18½ to Avenue 17	C	D	D	26.4	31.4	D	D	26.5	32.5
SR-99 SB – Avenue 18½ to Avenue 17	C	C	E	23.5	40.5	C	E	23.7	40.6
SR-99 NB – South of Avenue 17	C	E	F	39.0	---	E	F	41.2	---
SR-99 SB – South of Avenue 17	C	D	F	29.2	---	D	F	30.3	---
Roadway Segment									
Avenue 18½ - Road 24 to Road 23	D	A	B	NA	NA	A	B	NA	NA
Road 23 – Avenue 18½ to Avenue 17	D	D	D	NA	NA	D	E	NA	NA
Avenue 17 – Road 23 to SR 99	D	F	F	NA	NA	F	F	NA	NA
Avenue 17 – SR 99 to Road 27	D	E	F	NA	NA	F	F	NA	NA
Golden State Boulevard – Avenue 17 to Road 23	D	A	A	NA	NA	A	C	NA	NA

NOTES: **Bold** text denotes unacceptable LOS.

NA = not applicable

OF = overflow

¹ density = passenger car per mile per lane

--- = beyond software limitations

SOURCE: TPG Consulting, Inc., 2008; AES 2008.

Intersection Operations. The 2030 Without Project traffic volumes were combined with vehicle trips expected to be generated by Alternative C. **Table 4.11-23** summarizes the 2030 With Alternative C peak hour intersection conditions. The 2030 Without Project intersection conditions are provided as a baseline. With the addition of project traffic under Alternative C, the following 15 study intersections are forecast to operate at an unacceptable LOS:

- Avenue 17 at SR-99 SB ramps
- Avenue 17 at SR-99 NB ramps
- Avenue 12 at Golden State Boulevard
- Avenue 12 at SR-99 NB ramps
- Avenue 17 at Golden State Boulevard
- Avenue 17 at Road 23
- Avenue 15½ at Road 23
- Avenue 16/Ellis Street Overcrossing at Aviation Drive
- Cleveland Avenue/Avenue 15½ at SR-99 NB ramps
- Cleveland Avenue/Avenue 15½ at SR-99 SB ramps
- SR-145/Madera Avenue at SR-99 NB ramps
- Avenue 18½ at SR-99 SB ramps/Road 23
- Avenue 18½ at Golden State Boulevard
- Olive Avenue/Avenue 14/SR-99 SB on-ramp at SR-145
- Avenue 18½ at Pistachio Drive

TABLE 4.11-23
PEAK HOUR INTERSECTION CONDITIONS -
2030 WITH ALTERNATIVE C

Intersection	LOS Threshold	2030				With Project			
		LOS	AM Delay (secs) ¹	LOS	PM Delay (secs)	LOS	AM Delay (secs)	LOS	PM Delay (secs)
Avenue 18½ at SR-99 SB ramps/Road 23									
• SB Approach	C	F	52.0	F	332.3	B	18.2	E	64.4
Avenue 18½ at SR-99 NB ramps									
• EB left	C	A	7.5	B	10.1	B	14.9	B	13.5
• NB Approach		F	337.7	F	7523.8				
Avenue 17 at SR-99 SB ramps	C	F	7445.5	F	---	C	20.1	F	341.9
Avenue 17 at SR-99 NB ramps									
• EB left	C	D	27.7	F	617.2	E	67.9	F	267.6
• NB Approach		F	6790.7	F	---				
Avenue 12/Golden State Boulevard at SR-99 SB ramps									
• SB Left-Through	C	A	9.1	A	7.5	C	22.0	C	24.0
• WB Approach		F	9323.4	F	9051.8				
Avenue 12 at Golden State Boulevard	D	F	205.2	F	328.4	E	75.9	F	154.5
Avenue 12 at SR-99 NB ramps	C	C	21.5	E	57.9	C	23.3	E	66.3
Avenue 18 at Road 23									
• NB left-Through-Right	D	A	0.0	A	0.2	A	0.0	A	0.2
• SB left-Through-Right		A	0.8	A	1.0	A	1.7	A	2.7
• WB Approach		B	14.5	C	17.9	B	14.7	C	22.0
• EB Approach		C	16.4	C	24.8	C	17.8	D	31.9
Avenue 17 at Road 23									
• NB Left-Through-Right	D	A	3.2	A	3.3	E	56.7	F	258.1
• SB Left-Through-Right		A	0.8	A	0.3				
• WB Approach		F	---	F	---				
• EB Approach		F	---	F	---				
Avenue 17 at Golden State Boulevard									
• EB Approach	D	B	12.5	D	29.4	E	70.3	F	417.6
• EB Approach		F	71.5	F	275.4				
• EB Approach		F	---	F	---				
• EB Approach		F	---	F	---				
Ellis Street at Road 26	D	B	10.1	C	22.2	A	10.0	B	19.5
Avenue 15½ at Road 23									
• NB left-Through-Right	D	A	0.0	A	0.0	A	0.0	A	0.0
• SB left-Through-Right		A	1.1	A	1.7	A	1.1	A	1.7

Intersection	LOS Threshold	2030				With Project			
		LOS	AM Delay (secs) ¹	LOS	PM Delay (secs)	LOS	AM Delay (secs)	LOS	PM Delay (secs)
<ul style="list-style-type: none"> WB Approach EB Approach 		C	16.9	D	34.4	C	17.4	E	38.8
		A	0.0	C	19.0	A	0.0	C	20.0
Avenue 14 at Road 23	D	B	11.6	C	16.6	B	11.8	C	18.0
Avenue 16/Ellis Overcrossing at Aviation Drive	C	F	115.7	F	399.6	F	122.4	F	419.0
Avenue 16/Ellis Street at SR 99 SB ramps	C	A	7.3	B	10.6	A	7.4	B	10.9
Avenue 16/Ellis Street at SR 99 NB ramps	C	B	11.7	B	13.9	B	11.7	B	13.8
Cleveland Avenue/Avenue 15½ at SR-99 NB ramps	C	C	26.8	F	199.2	B	16.8	F	96.2
Cleveland Avenue/Avenue 15½ at SR-99 SB ramps	C	C	31.4	F	133.0	C	28.0	F	86.0
SR-145/Madera Avenue at SR-99 NB ramps	C	D	37.0	F	242.9	D	47.6	F	262.6
Olive Avenue/Avenue 14 at SR-99 SB off-ramp	C	C	29.7	F	163.2	B	16.2	C	24.5
Olive Avenue/Avenue 14/SR-99 SB on-ramp at SR-145	C	E	70.9	F	238.7	C	24.4	F	99.8
Avenue 18½ at Pistachio Drive	C	A	0.7	A	2.2	A	0.7	A	2.5
<ul style="list-style-type: none"> EB Left-Through SB Approach 		C	24.8	F	187.5	D	26.9	F	314.1
Avenue 18½ at Golden State Boulevard	C	A	1.0	A	0.9	A	1.0	A	0.9
<ul style="list-style-type: none"> EB left-Through-Right WB left-Through-Right 		A	6.6	A	7.5	A	6.8	A	7.9
<ul style="list-style-type: none"> NB Approach SB Approach 		C	19.2	F	137.3	C	23.0	F	1155.7
		F	429.1	F	9379.8	F	633.7	F	---

NOTES: ¹ delay in seconds.² Per Caltrans request to analyze Avenue 16/Avenue 16 connector at SR-99 NB ramps and Avenue 16 at SR-99 NB ramp connector instead of Avenue 16 at SR-99 NB ramps.**Bold** text denotes unacceptable LOS.

OF = overflow

--- = beyond software limitations

SOURCE: TPG Consulting, Inc., 2008; AES 2008.

Figures 4.11-22 and 4.11-23 present the 2030 With Alternative C intersection volumes at each of the Madera site study intersections.

Impact Analysis

With the addition of project traffic under Alternative C, 6 freeway segments, 3 roadway segment, and 15 intersections are shown to operate at an unacceptable LOS, resulting in a significant impact. A queuing issue is present along Avenue 17 between SR-99 and Golden State Boulevard/Airport Drive which shall require additional reconstruction of the Avenue 17/Golden State Boulevard intersection. Mitigation measures for the 2030 With Project (Alternative C) conditions are discussed in **Section**

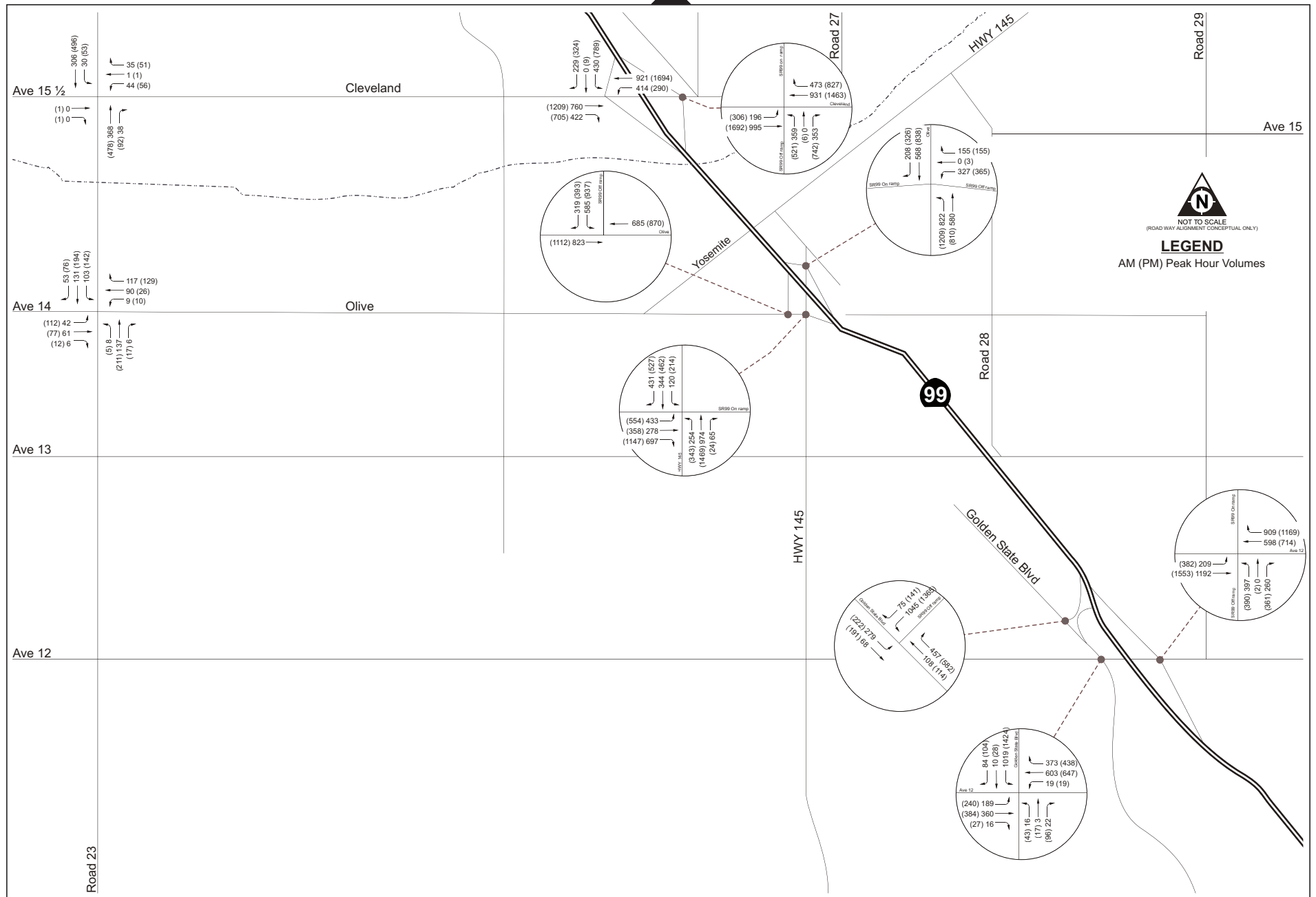


Figure 4.11-23
Madera Site – 2030 Intersection Volumes With Alternative C

5.2.7 of this document. With the incorporation of project mitigation measures, each of the intersections and roadway segments that are shown to have an unacceptable LOS would be improved to an acceptable LOS. This would result in a less than significant impact.

Land Use

Cumulative land use effects would be lessened when compared to those of Alternative A. Although Alternative C would also not be entirely consistent with many local land use plans, it would represent a more typical type of development than a casino. As with Alternative A, a less than significant cumulative land use effect would result.

Agriculture

Cumulative effects to agriculture would be similar to those of Alternative A, but reduced due to the reduced intensity of development. As with Alternative A, a less than significant cumulative effect to agriculture would result. Nonetheless, mitigation measures have been included in **Section 5.2.7** that would further reduce Alternative C's cumulative impacts to agriculture.

PUBLIC SERVICES

Effects to public services would be similar to those of Alternative A, except that the MOU with the County would not apply, resulting in potentially significant impacts to public services. Mitigation measures in **Section 5.2.8** would ensure cumulative effects to public services are less than significant.

OTHER VALUES

Noise

Alternative C would result in changes in traffic noise levels as identified in **Table 4.11-24** for the cumulative year (2030) conditions. According to this table, cumulative project-related traffic noise level increases are only predicted to increase by 0.1 dBA at the site and 1.5 dBA at the nearest receptor. The predicted cumulative increase in noise is below the FICON significance criteria as illustrated in **Table 3.10-4**. Therefore, there are no significant cumulative noise effects issues associated with this alternative.

TABLE 4.11-24
ALTERNATIVE C PREDICTED NOISE LEVELS FOR YEAR 2030 CONDITIONS

Receptor	2030 No Project L_{eq}	2030 Plus Project L_{eq}	2030 No Project vs. Future Plus Project (Difference)
Alternative C	61.0	61.1	0.1
Residential Receptor	67.7	69.2	1.5

SOURCE: VRPA Technologies, 2008.

Hazardous Materials

Cumulative hazardous materials impacts would be similar to Alternative A, given the similar scope of construction that would occur on the Madera site and the identical cumulative development that would occur in the County. The amount and types of hazardous materials that would be stored, used, and generated during the construction and operation of Alternative C could have a potentially significant impact to the environment and public (see **Section 4.10.3**). Mitigation is included in **Section 5.2.9** to reduce potential impacts to less than significant from the construction and operation of Alternative C.

Visual Resources

Cumulative visual resources effects would be similar to those of Alternative A. Although the Alternative C development would be a more typical kind of development and smaller in height, it may not be considered as aesthetically attractive as the Alternative A development, although such assessments are subjective. As with Alternative A, a less than significant cumulative visual resources effect would result.

4.11.5 ALTERNATIVE D – NORTH FORK SITE

LAND RESOURCES

The geographic area for the analysis of cumulative impacts to land resources is the Sierra Nevada foothill region near the North Fork site. Development planned in this area during the cumulative time period is primarily limited to a moderate growth of rural residential units (see TAZs above). As with Alternative A, local permitting requirements for construction would address regional stormwater, geotechnical, seismic and mining hazards; therefore, no significant cumulative impacts related to land resources would occur as a result of Alternative D.

WATER RESOURCES

A cumulative overdraft situation is not known to exist in the vicinity of the North Fork site, unlike the region containing the Madera site. In addition, intensive cumulative development is not expected in the vicinity of the North Fork site. Finally, the proposed pumping rate for Alternative D is relatively small and is not expected to result in noticeable regional impacts. Thus, a less than significant cumulative impact to groundwater resources would result. Nonetheless, mitigation measures are contained in **Section 5.2.2** to further reduce cumulative groundwater impacts.

Affected water bodies within the North Fork site include Whiskey Creek and Willow Creek. Neither of these waters is listed as impaired on the 303(d) list. Alternative D, in addition to future development in the area, could contribute to changes in runoff characteristics (volume, velocity, and hydrograph) and water quality located near the North Fork site as a result of project development. However, the Tribe has made appropriate design allowances which would reduce the project's

contribution to cumulative effects to a less than significant level, identical to those noted above under Alternative A. Cumulative rural residential developments, which typically result in only minor impacts to water resources, may incorporate many, but not all, of these measures, as required by local regulations. With the incorporation of these features, Alternative D would not result in or contribute to a significant cumulative water resources effect.

AIR QUALITY

Ozone and PM Emissions

In **Table 4.11-6** long-term 2020 operational emissions associated with Alternative D are compared to Countywide emissions forecasts for 2020. In 2020, unmitigated operation of Alternative D is estimated to result in:

- 0.86 tons per year (tpy) of ROG,
- 1.03 tpy of NO_x, and
- 1.90 tpy of PM₁₀ emissions.

As shown in **Table 4.11-6**, Alternative D generated only 0.013% of the Countywide total NO_x in 2020 and only generated 0.004% of ROG. The PM₁₀ contribution for Alternative D is a little more with 0.021% in 2020. The incremental effect of Alternative D is a relatively minor portion of the Countywide total for one project for ROG, NO_x, and PM₁₀. Alternative D, along with other cumulative development, would exacerbate the regional trend towards higher PM₁₀ emissions but to a less than significant level, because of dust control measures being successfully implemented throughout the air basin.

Table 4.11-7 presents a comparison of unmitigated operational and area source emissions for Alternative D to SJVAPCD emissions criteria. In 2020, ROG and NO_x unmitigated emissions generated by Alternative D would not exceed the 10-tpy significance thresholds; therefore air quality impacts under Alternative D would be considered less than significant, no mitigation is required.

Carbon Monoxide Concentrations

As described in the traffic study of the project alternatives, traffic operations at signalized study intersections would be LOS D or better with Alternative D under 2030 long-term future cumulative background conditions and traffic mitigation measures. Based on criteria presented in the University of California Davis Institute of Transportation Studies document *Transportation Project-Level Carbon Monoxide Protocol* (Garza, *et al.*, 1997), intersections operating at LOS D or better typically do not result in CO concentrations that exceed State or Federal standards. Therefore, Alternative D with traffic mitigation measures, in combination with increased traffic from cumulative development, would have a less-than-significant impact on CO air quality.

Odor Effects

The SJVAPCD's list of common types of facilities that have been known to produce odors in the SJV occur mostly in manufacturing/industrial zones and no industrial areas are projected for the area, therefore Alternative D (which would not result in significant odors after the implementation of mitigation measures contained in **Section 5.2.3**), in combination with cumulative development, would have a less than significant odor effect.

Toxic Air Contaminants

Alternative D and other projects, when considered cumulatively, could result in potentially significant impacts from toxic air contaminants. No industrial or commercial areas are projected for the area; therefore Alternative D in combination with cumulative development would have a less than significant effect from toxic air contaminants.

Climate Change

The EPA and CARB approved URBEMIS 2007 emissions modeling software estimates that Alternative D would result in the emission of approximately 270 tons per year of CO₂ during construction, which is expected to last 12 months (**Appendix S**). As shown in **Table 4.11-25**, during

TABLE 4.11-25
ESTIMATED PROJECT OPERATION GHG EMISSIONS

CO ₂ Emissions ¹					
Mobile Sources		Area Sources			Total CO ₂ e
tons per year		tons per year			tons per year
2,289		38			2,327
CH ₄ and N ₂ O Emission from Mobile Sources ²					
Emission Factor (CO ₂ /CH ₄ /N ₂ O) g/mile	Miles Traveled miles/day	CH ₄ tons per year	N ₂ O	Total CO ₂ e tons per year	
552.08/0.05/0.05	12,218	5	76	81	
Indirect GHG emissions ²					
Emission Factor (Kg of CO ₂ /CH ₄ /N ₂ O) lb/MW-h	Estimated kW-h Usage ³ MW-h/year	CO ₂	CH ₄ tons per year	N ₂ O	Indirect CO ₂ e
804.54/0.006/0.0037	22	4	0.00	0.00	4
Total Operation CO ₂ e tons per year					4,739

¹ Estimated from EPA and CARB approved URBEMIS air quality program (**Appendix W**)

² Emission factors from Climate Change Action Registry

³ Estimated using 4,500 kilowatts-hours/month of power used.

Source: URBEMIS, 2007; Climate Change Action Registry, 2007.

operation Alternative C would result in the emission of CH₄ and N₂O equivalent to 81 tpy of CO₂e. Indirect emissions of CO₂, CH₄, and N₂O are estimated at 4 tpy of CO₂e. Total annual emissions

during operation of Alternative D would be equivalent to 4,739 tpy of CO₂e. Annual Alternative D GHG emissions would be approximately 0.00087 percent of California's predicted contribution to global GHG emissions in 2020 (see **Table 3.4-7**). Alternative D contributions to the annual global GHG emissions in 2020 would be approximately 0.00000056 percent.

The same state GHG reduction strategies would apply to Alternative D as Alternative A, given that Alternative D proposes commercial development similar to Alternative A. For the same reasons as Alternative A (see **Table 4.11-10**), Alternative D would not comply with one of the three applicable strategies, resulting in a potentially significant cumulative impact. A less than significant cumulative impact would result after the implementation of mitigation measures in **Section 5.2.3**.

BIOLOGICAL RESOURCES

This section analyzes the potential effects of Alternative D in conjunction with other projects on biological resources including wildlife and habitats, Federally listed species, migratory birds, and jurisdictional waters of the U.S.

Wildlife and Habitats

Alternative D would not result in significant direct or indirect effects to wildlife and habitats, including state-listed species. However, disturbance to habitats and increases in human activity within the vicinity from other proposed projects, including individual rural residential projects expected in the area, could incrementally contribute to past, present and future effects to wildlife and habitats. The habitat on the Madera site that would be disturbed by Alternative A is presently used for rural residential purposes and open space. However, over 50 percent of the North Fork site would remain in its present state. In addition, most of the sensitive wetland habitat on the North Fork site would be avoided. Thus, Alternative D's contribution to the cumulative effects to wildlife and habitats in the region would be less than significant.

Federally Listed Species

An increase in human activity within the vicinity of the North Fork site from Alternative D and other proposed projects in the area could cumulatively and adversely affect Federally listed species. It is assumed, that other projects in the area will comply with Federal laws regulating threatened and/or endangered species to avoid impacts to such species and unavoidable impacts will be adequately mitigated through the USFWS. Therefore, a less than significant cumulative effect to threatened and/or endangered species would result. Mitigation is discussed in **Section 5.0** and includes mitigation measures for identified plant and animal species found in the region.

Migratory Birds

Alternative D and other projects, when considered cumulatively, could result in significant impacts to nesting migratory birds. This is potentially a significant impact. Other projects in the area will avoid and/or adequately mitigate for migratory birds by following the regulations set forth in the Migratory

Bird Treaty Act. Potential adverse direct effects to migratory birds and other special status species will be avoided or minimized (to a less than significant level) by implementation of the mitigation measures identified in **Section 5.2.4**.

Waters of the U.S.

Alternative D would directly affect approximately 0.1 acres of “waters of the U.S.” Mitigation measures are identified in **Section 5.2.4** and include site plan relocation measures to avoid on-site stream impacts. Other projects in the area will follow the provisions set forth in the Clean Water Act to reduce project impacts to a less than significant level of impact. Alternative D would result in less than significant cumulative effects to waters of the U.S after mitigation.

CULTURAL RESOURCES

Significant cumulative impacts to cultural resources could occur if sites were lost, damaged, or destroyed without appropriate recordation or data recovery. Potential cumulative impacts for cultural resources issues would be similar to those of Alternatives A, B and C, except that the North Fork site is located in a more culturally sensitive location than the Madera site. However, less development is also planned during the cumulative time period in the vicinity of the North Fork site. Since no known cultural resources would be affected by Alternative D, and limited cumulative development is planned in the area, a less than significant cumulative effect to known resources would occur. Impacts to unknown cultural resources would be a significant impact. Mitigation for potential cumulative impacts to unknown cultural resources has been specified in **Section 5.2.5**. Implementation of these mitigation measures would reduce impacts to less than significant.

SOCIOECONOMIC CONDITIONS

Cumulative socioeconomic effects of Alternative D would be similar to those of Alternative A, except that beneficial effects to the regional economy would be substantially lessened, population growth would be reduced to 32 (resulting in a reduction to population related impacts – see **Section 4.7.1**), and the MOU with the County would not apply. Thus, costs would potentially be incurred by the County which would not be compensated by the Tribe, forcing the County to degrade their services for other planned cumulative developments or obtain funds elsewhere, resulting in a potentially significant cumulative effect. This effect would be mitigated to a less than significant level through mitigation measures in **Section 5.2.6**.

RESOURCE USE PATTERNS

Transportation/Circulation

2030 Traffic Condition Without Project

This section discusses the 2030 traffic conditions without project trips added. The 2030 Without Project Lane Configuration and Traffic Controls for the North Fork site study intersections are the same as shown in **Section 3.8-2**. No changes in roadway geometry are planned in the North Fork site area between the existing conditions and 2030.

Peak Hour Intersection Operations. Table 4.11-26 summarizes the 2030 baseline intersection conditions. The following two study intersections are forecasted to operate at an unacceptable LOS:

- SR-145 at SR-41
- SR-41 at Thornberry Road- WB approach

TABLE 4.11-26
INTERSECTION PERFORMANCE IN THE VICINITY OF THE NORTH FORK SITE - 2030

Intersection	LOS Threshold	2030			
		LOS	AM Delay (secs) ¹	LOS	PM Delay (secs)
SR-145 at SR-41	C	C	39.6	D	40.6
SR-41 at Road 200					
• SB Left	D	A	9.3	A	7.7
SR-41 at Thornberry Road					
• SB Left	C	A	9.7	B	10.2
• WB Approach		C	20.2	D	27.5
SR-41 at SR-49	C	B	11.4	B	14.7
Malum Ridge Road at Road 225 (Mammoth Pool Road)	D	A	7.9	A	8.7
Road 225 (Mammoth Pool Road) at Cascadel Road	D				
• SB Left		A	7.5	A	7.4
• WB Approach		A	9.1	A	9.7
Cascadel Road at Mission Drive (Federal Road 209)					
• WB Left-Through	D	---	---	A	1.2
• NB Approach		A	8.8	A	8.8
North Fork Road at Auberry Road					
• NB Left-Through-Right		A	1.1	A	1.2
• SB Left-Through-Right	D	A	7.6	A	7.6
• WB Approach		B	10.7	B	11.1
• EB Approach		B	12.2	B	13.1
North Fork Road at Crane Valley Road	D				
• EB left-Through		A	1.7	A	3.3
• SB Approach		B	10.1	B	11.7

NOTES: ¹ delay in seconds

Bold text denotes unacceptable LOS.

SOURCE: TPG Consulting, 2008; AES, 2008.

2030 Traffic Conditions With Project

This section discusses the 2030 traffic conditions with Alternative D project trips added. The 2030 Without Project conditions are reported as a baseline. **Figure 4.11-24** presents the 2030 lane configuration and intersection control considered to be in place at that time. **Figure 4.11-25** presents the 2030 intersection volumes at each of the North Fork site study intersections. This 2030 lane configuration and intersection control represents the existing configuration and controls plus improvements needed to mitigate impacts from the addition of project traffic generated under Alternative D in the Build-Out (2008) condition.

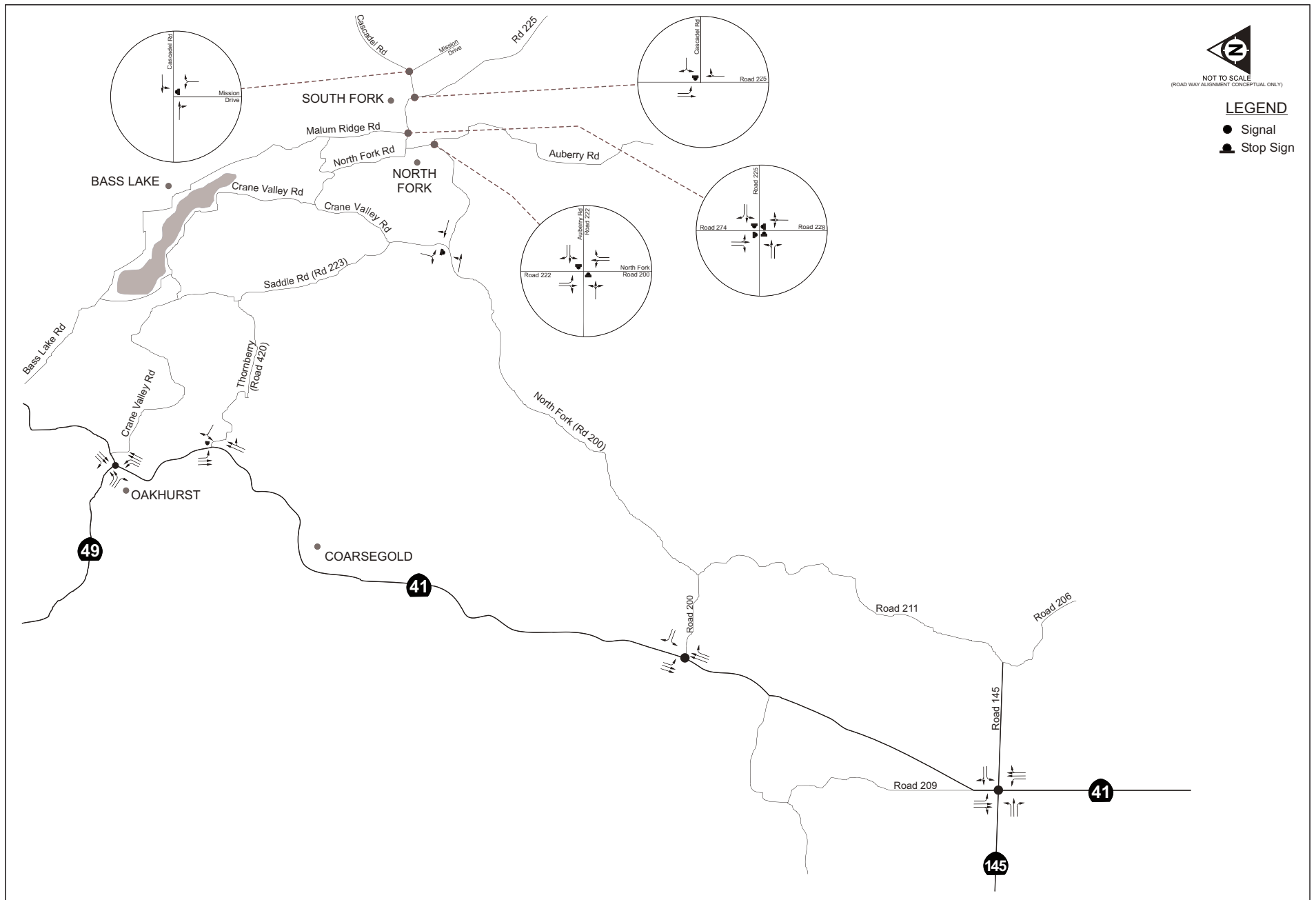
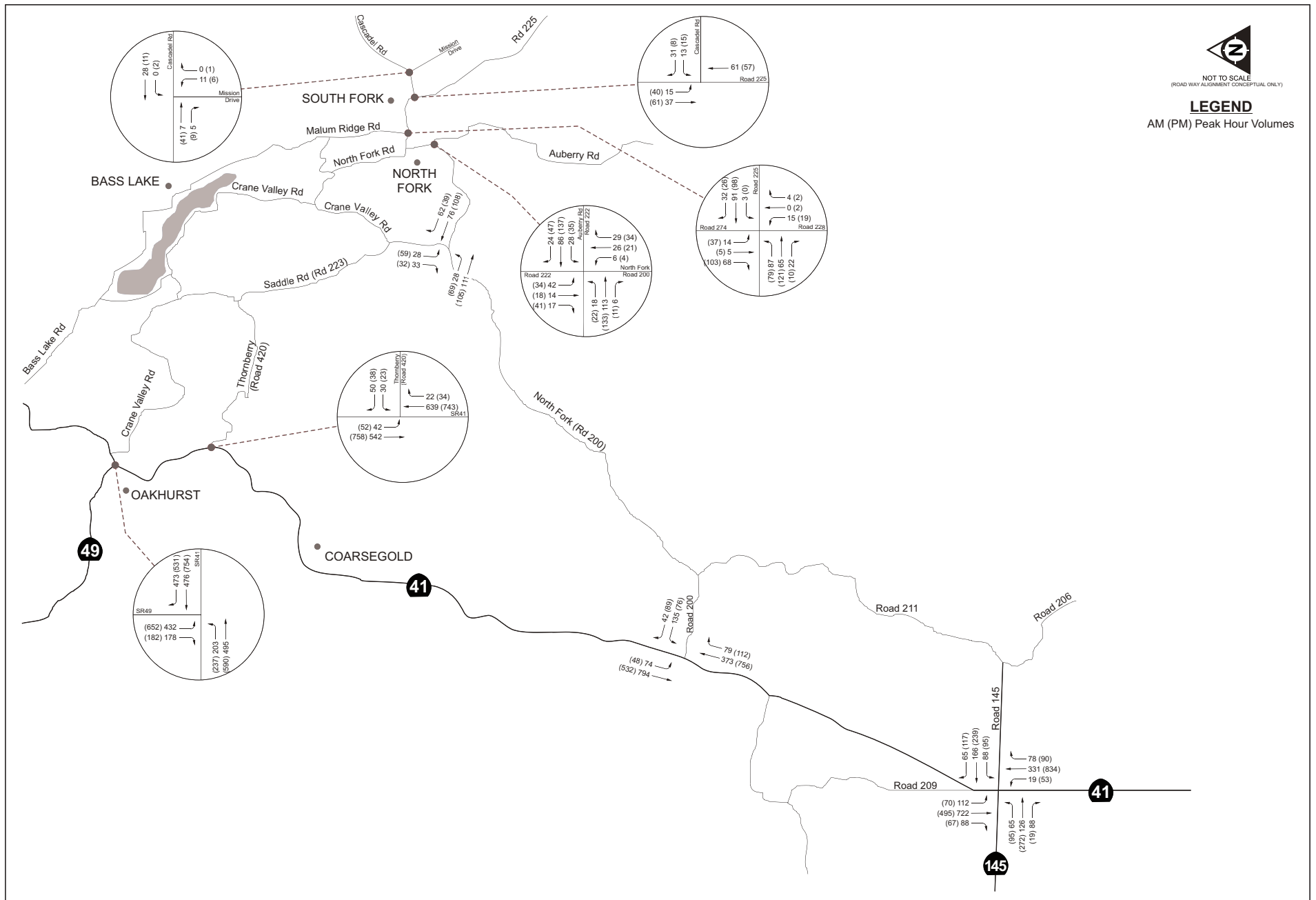


Figure 4.11-24
North Fork Site – 2030 Lane Configuration and Intersection Control With Alternative D



SOURCE: TPG Consulting, Inc., 2008; AES, 2008

North Fork Casino EIS / 204502 ■

Figure 4.11-25
North Fork Site – 2030 Intersection Volumes

Peak Hour Intersection Operations. The 2030 Without Project traffic volumes were combined with vehicle trips expected to be generated by Alternative D. **Table 4.11-27** summarizes the 2030 With Alternative D peak hour intersection conditions. The 2030 Without Project intersection conditions are provided as a baseline. With the addition of project traffic under Alternative D, the following two study intersections are forecast to operate at an unacceptable LOS:

- SR-145 at SR-41
- SR-41 at Thornberry Road

TABLE 4.11-27
PEAK HOUR INTERSECTION CONDITIONS - 2030 WITH ALTERNATIVE D

Intersection	LOS Threshold	2030				With Alternative D			
		AM		PM		AM		PM	
		LOS	Delay (secs) ¹	LOS	Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)
SR-145 at SR-41	C	C	39.6	D	40.6	C	29.6	D	40.7
SR-41 at Road 200	D	A	9.3	A	7.7	A	9.3	A	8.5
SR-41 at Thornberry Road									
SB Left	C	A	9.7	B	10.2	A	9.7	B	10.2
WB Approach		C	20.2	D	27.5	C	20.2	D	27.5
SR-41 at SR-49	C	B	11.4	B	14.7	B	11.1	B	14.7
Malum Ridge Road at Road 225 (Mammoth Pool Road)	D	A	7.9	A	8.7	A	8.2	A	9.2
Road 225 (Mammoth Pool Road) at Cascadel Road									
SB Left	D	A	7.5	A	7.4	A	7.5	A	7.5
WB Approach		A	9.1	A	9.7	A	9.3	A	9.6
Cascadel Road at Mission Drive (Federal Road 209)									
SB Left-Through	D	---	---	A	1.2	A	4.3	A	6.3
WB Approach		A	8.8	A	8.8	A	8.9	A	9.1
North Fork Road at Auberry Road									
EB Left-Through	D	A	1.1	A	1.2	A	1.6	A	1.6
WB Left		A	7.6	A	7.6	A	7.6	A	7.6
NB Approach		B	10.7	B	11.1	B	10.9	B	11.4
SB Approach		B	12.2	B	13.1	B	12.5	B	13.4
North Fork Road at Crane Valley Road									
EB left-Through	D	A	1.7	A	3.3	A	1.6	A	3.3
SB Approach		B	10.1	B	11.7	B	10.1	B	11.8

NOTES: ¹ delay in seconds

Bold text denotes unacceptable LOS.

SOURCE: TPG Consulting, 2008; AES, 2008.

Figure 4.11-26 presents the 2030 With Alternative D intersection volumes at each of the North Fork site study intersections.

Impact Analysis

With the addition of project traffic under Alternative D, four study intersections are forecast to operate at an unacceptable LOS, resulting in a significant impact. Mitigation measures for the Build-Out With Project (Alternative D) conditions are discussed in **Section 5.2.7** of this document.

With the incorporation of project mitigation measures, the intersections shown to have an unacceptable LOS would be improved to an acceptable LOS. This would result in a less than significant impact.

Land Use

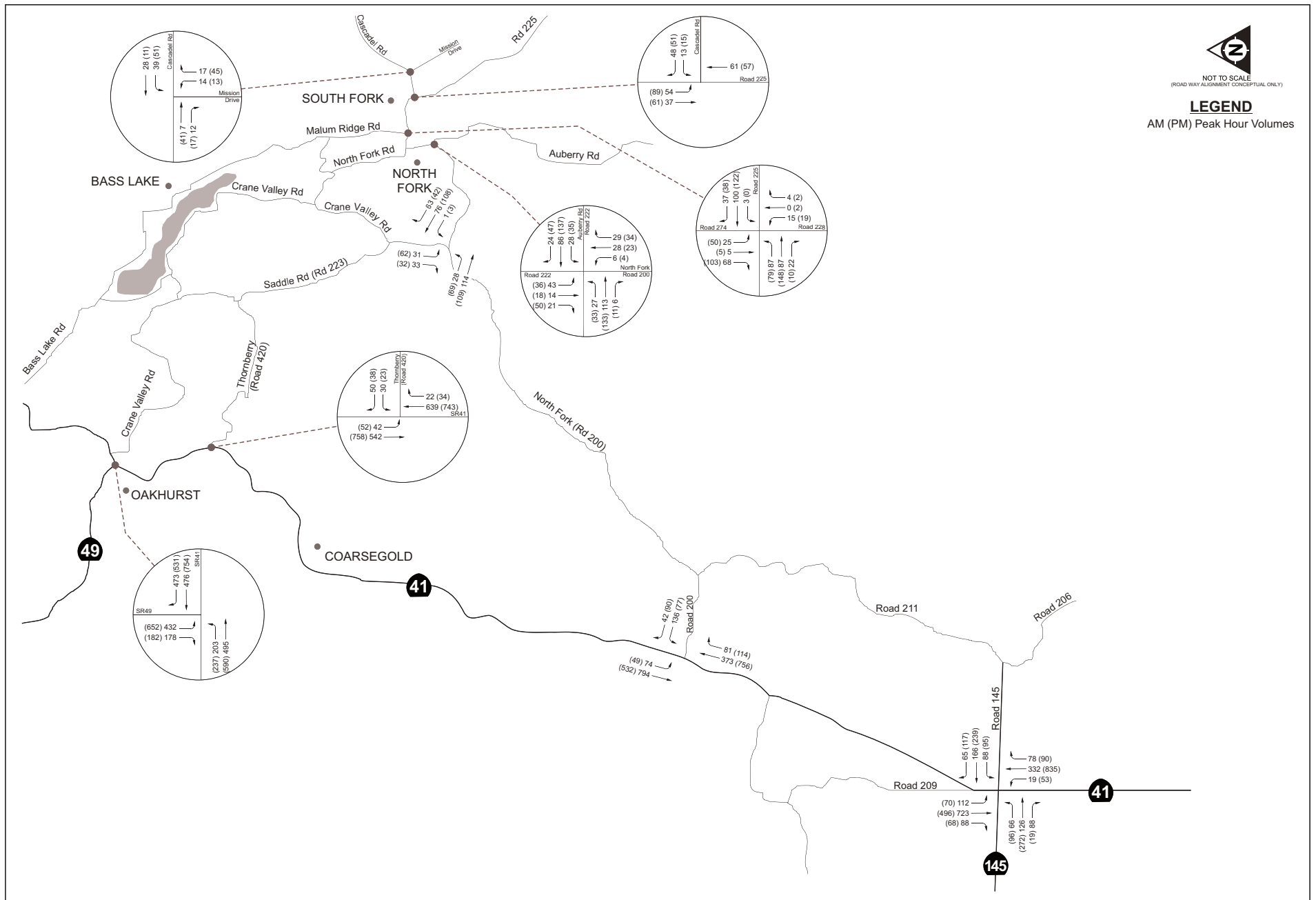
Although Alternative D would not be entirely consistent with all of the goals and policies of the Madera County General Plan, the General Plan would not apply to the North Fork site, as it is currently trust property. In addition, as noted in **Section 4.8.4**, no significant effects, such as precluding existing or planned land uses or disruption of access or conflicts with existing land uses, have been identified. Since no other tribal projects are planned and all other development occurring around the North Fork site would be required to comply fully with local planning guidelines, no significant cumulative land use effects would occur.

Agriculture

Under Alternative D, a casino would be developed on 5.3 acres of the North Fork site. Soils within the site have not been mapped by the NRCS, and thus have not been designated according to their farming potential. Based on the location and topography of the North Fork site, it is unlikely that the North Fork site contains important farmland. No Storie Index rating is available for the North Fork site because it not considered farmland. Due to the inferior quality of land available for farming purposes on the North Fork site and in the area of cumulative rural residential development in the vicinity of the North Fork site, cumulative impacts to agriculture from the development of Alternative D are considered less than significant.

PUBLIC SERVICES

Cumulative development includes limited rural residential in the vicinity of the North Fork Site. This type of development does not present a significant burden on public services and individual residences would be responsible for obtaining connection to County utilities or paying a fair share of improvement costs in the area. Property taxes on new residences would fund County services such as law enforcement, fire protection, and schools. Cumulative solid waste impacts would be similar to



SOURCE: TPG Consulting, Inc., 2008; AES, 2008

North Fork Casino EIS / 204502 ■

Figure 4.11-26
North Fork Site – 2030 Intersection Volumes With Alternative D

Alternative A, except substantially reduced (due to the smaller scope of development) and services would be provided by the County. Alternative D would be required to independently contract for public services to the North Fork site and would not add to the incremental effects of surrounding development on public services. Thus, cumulative impacts would be less than significant.

Nonetheless, with the mitigation listed in **Section 5.2.8**, cumulative impacts to public services from Alternative D would be further reduced.

OTHER VALUES

Noise

Alternative D would result in changes to traffic noise levels as identified in **Table 4.11-28** for the cumulative year (2030) conditions. According to this table, cumulative project-related traffic noise level increases are only predicted to increase on average by 4.0 dBA. The predicted cumulative increase in noise is below the FICON significance criteria as illustrated in **Table 3.10-4**. Therefore, there are no significant cumulative noise effects issues associated with this alternative.

TABLE 4.11-28
ALTERNATIVE D PREDICTED NOISE LEVELS FOR YEAR 2030 CONDITIONS

Receptor	2030 No Project L _{eq}	2030 Plus Project L _{eq}	2030 No Project vs. Future Plus Project (Difference)
Alternative D	40.0	44.0	4.0

SOURCE: VRPA Technologies, 2000.

Hazardous Materials

Cumulative hazardous materials involvement has the potential to occur as a result of continuing development occurring in the region. This involvement could result from the use of hazardous materials in the construction process or the disturbance of existing hazardous materials present on a construction site. However, the primarily rural residential development occurring in the vicinity of the North Fork site does not typically result in significant use or storage of hazardous materials. As noted in **Section 3.10**, there are no existing known hazardous materials on the North Fork site. The amount and types of hazardous materials that would be stored, used, and generated during the construction and operation of Alternative D could have a potentially significant impact to the environment and public (see **Section 4.10.4**). Mitigation is included in **Section 5.2.9** to reduce potential impacts to less than significant from the construction and operation of Alternative D.

Visual Resources

Cumulative development is limited in the area of the North Fork site. In addition, the North Fork site is not easily visible from public vantage points. Thus, the development proposed by Alternative D would not represent a significant cumulative effect to visual resources.

4.11.7 ALTERNATIVE E – NO ACTION

Under Alternative E, no new development would occur on either the Madera or North Fork sites. Therefore, cumulative trends would continue, but the No Action Alternative would not result in significant contributions to cumulative effects.

4.12 INDIRECT AND GROWTH-INDUCING EFFECTS

This section includes an analysis of growth-inducing effects and an analysis of indirect effects related to off-site traffic mitigation and off-site pipeline development. Other indirect effects are analyzed in previous sections by issue area (air quality, noise, etc.).

4.12.1 GROWTH-INDUCING EFFECTS

NEPA requires that an EIS analyze “growth-inducing effects” (40 CFR § 1502.16 (b), 40 CFR § 1508.8 (b)). A growth-inducing effect is defined as an effect that fosters economic or population growth, or the construction of additional housing, either directly or indirectly. Direct growth inducement could result, for example, if a project involved the construction of new housing. Indirect growth inducement could result if a project established substantial new permanent employment opportunities (e.g., new commercial, industrial, or governmental enterprises) or if it would remove obstacles to population growth (e.g., expansion of a wastewater treatment plant that could allow more construction in the service area).

POTENTIAL RESIDENTIAL GROWTH

Alternatives A through D would create new jobs and induce some employees to move to Madera County, resulting in a County population increase ranging from 32 to 836. More detailed population increase calculations and potential socioeconomic effects resulting from population increase can be found in **Section 4.7.1**. The potential for this population increase to lead to an increase in residential development in the County is analyzed below.

There are three major areas where residential development is occurring and planned in Madera County: the City of Madera, the City of Chowchilla and the Sierra Nevada foothills (primarily the communities of Oakhurst and Coarsegold) (**Section 4.11.1**). At present, the number of housing units in the County is increasing (**Table 4.12-1**).

At present, the number of housing units permitted is declining from a peak in 2005. City and County planning officials acknowledge the slowdown in residential permits issued, but counter that the sharp decreases seen are in relation to years of high growth. They note that they are still issuing permits, which they consider a good sign. There is currently an 8-10 month backlog of housing (unrented/unsold) in the County. In addition, there are a number of uncompleted housing starts. If new people moved to the area, these homes could be quickly finished and available for occupancy.

Given the flurry of residential development that has occurred and vacant housing units present in the County, the proposed development would not have a significant impact or create demand for new housing developments. Alternatives A through D are estimated to draw from 10 to 263 new households to the County, depending on the alternative (**Section 4.7.1**). Alternative A would draw the most new households to the County at 263. Yet, this number of new households would

only occupy 5% of the vacant housing units in the County. With each of the remaining alternatives, the impact on the housing market diminishes. Thus, the housing demand generated by the EIS alternatives would be absorbed by available and planned housing developments and no housing growth would occur.

TABLE 4.12-1
RESIDENTIAL HOUSING UNITS – MADERA COUNTY

Community	Total Housing Units			Vacant Units		
	2006	2007	2008	2006	2007	2008
Chowchilla	3,353	3,670	3,884	184	218	215
Madera	14,997	16,034	16,418	651	696	713
Unincorporated	28,289	28,756	29,070	3,980	4,046	4,090
<i>Total</i>	<i>46,639</i>	<i>48,460</i>	<i>49,372</i>	<i>4,816</i>	<i>4,961</i>	<i>5,019</i>

NOTE: Data as of January 1 each year.

SOURCE: Innovation Group, 2008.

POTENTIAL COMMERCIAL/INDUSTRIAL GROWTH

This section examines potential commercial development, which includes hotel, retail (including restaurant), office, and industrial spaces. The two main areas of commercial development in the County are the incorporated areas of Madera and Chowchilla. Despite the strong residential development that has occurred, commercial development has been lagging in Madera County. This might explain the numerous commercial developments planned in the vicinity of the Madera site (**Section 4.11.1**)

Hotel Development

It is not expected that visitors to the Alternative A developments would create demand for additional restaurants and hotels, as the casino/hotel resort development itself would be able to serve these needs. Alternative B would not contain a hotel component, but any demands for hotel stays would be accommodated by nearby hotels, including a hotel at the Avenue 18½/SR-99 interchange and a recently constructed 78-room hotel at the Avenue 17/SR-99 interchange. Alternative C is a retail development that would not generate demand for hotel stays and would also include restaurants. Alternative D includes restaurants and would generate a relatively small number of visitors that would utilize existing area lodging facilities.

Retail Development

In all of the alternatives, the proposed development would increase the demand for retail space. For Alternative A, 88 new direct, indirect, and induced jobs would require retail space (**Section 4.7.1, Table 4.7-2**). Fewer jobs would be required for each of the remaining alternatives. These 88 jobs would be created throughout Madera County, including a small number at the Alternative

A casino/hotel resort, serving visitors to the Madera site and new residents. A large number of accommodation and food services jobs would be created, but most of these would be directly created at the proposed developments for each EIS alternative.

Alternatives A through C are specifically expected to generate the demand for a combination gas station, fast food restaurant, and a convenience store near the Avenue 17/SR-99 interchange. This demand would be generated by the large number of Madera site visitors utilizing this interchange. This demand would not be absorbed by any of the EIS alternatives, because no gas station development is proposed under any of the alternatives. Finally, while a gas station and fast food restaurants are situated at Avenue 18½, the other main SR-99 access to the Madera site, no such development is currently located in the vicinity of Avenue 17/SR-99.

The City of Chowchilla has very little in terms of existing retail, but there is some development that is in the planning stages. Currently, the City has one shopping center with a grocery store and a pharmacy. To add to this, a local car dealership is moving its operations to a 31-acre parcel in Chowchilla. The development will include not only the dealership but also a village-style shopping center which will feature small stores and pedestrian transportation. The development is in the engineering phase with the dealership to be operational in 18 to 24 months and the retail center to follow.

The City of Madera is experiencing a tremendous amount of pressure to develop retail space due to the increasing amount of residential development in the area. Many of the sites available for retail development, however, do not have the infrastructure to support it. This lack of infrastructure has slowed retail development in the City. Despite these issues, most existing retail development in the County is located in or around the City of Madera.

Currently, one of the targeted areas for development is the Avenue 17 exit off of State Route 99 (SR-99). There are developments planned for three of the four corners at this exit (**Section 4.11.1**). These plans are tentative and have not been officially acted upon, with the exception of one large retail development planned across SR-99 from the Madera site (the “Madera Town Center” development - see **Section 4.11** for a more detailed discussion of cumulative development planned in the vicinity of the Madera site). The demand for a combination gas station, fast food restaurant, and convenience store is expected to be absorbed by large retail developments at the Avenue 17/SR-99 interchange (and possibly also other planned retail developments in this area, should they be developed), which are expected contain numerous restaurants and at least two gas station/convenience stores.

Visitors to the North Fork site would be served by existing businesses in the nearby community of North Fork. It is not expected that other new businesses would be needed in the market to serve these visitors.

Retail and food and beverage facilities may also be needed in the market to accommodate casino and non-casino employees that become new residents of the area, although these new employees would be expected to reside in residential developments that are being planned independently of the alternatives, and such retail developments would be planned for the communities as a whole. Therefore, with extensive residential housing in the process of being developed in Madera County, the demand for new retail space will continue to increase independent of any of the proposed EIS alternatives. Therefore, no commercial growth would occur due to any of the EIS alternatives, either from visitors to the sites or from new residents.

Office Development

Only a slight increase in the demand for office space would result from any of the EIS alternatives. Very little of the employment that would be generated would require office space. About 105 jobs (information; finance and insurance; real estate, rental, and leasing; professional, scientific, and technical services; management of companies and enterprises; and other services sectors – see **Table 4.7.2**) would result from Alternative A, and fewer from the other alternatives (**Section 4.7.1**).

Madera County and the City of Madera have low office vacancy rates, however there are currently several available vacant offices spaces (see **Appendix R**). The City of Chowchilla has little to no office space, filled or available. The City has a few medical offices and other offices. There are no plans for any substantial office development.

What little office space that would be needed by the alternatives is expected to be developed primarily in the incorporated areas of the County, mainly resulting from the service needs of the residential development. For instance, accountants and attorneys that would serve the growing residential population would utilize office space within the County. Office developments to serve the needs of currently planned residential development would not be induced by any of the EIS alternatives, because residential development has already occurred or is planned independent of the project alternatives.

Industrial Development

There would be very little demand for additional industrial space in the County as a result of the EIS alternatives. Specifically, 68 new jobs (agriculture, forestry, fishing, and hunting; mining; utilities; construction; manufacturing; wholesale trade; and transportation and warehousing sectors – see **Table 4.7-2**) would be associated with Alternative A (again, fewer from the other alternatives) (**Section 4.7.1**).

Most of the industrial development in Madera County is in and around the City of Madera. The City of Chowchilla has very little built industrial space. It does have a number of excellent sites

for industrial development and is apparently on a short-list for consideration by a large industrial developer. **Table 4.12-2** provides a listing of the currently available properties in Madera County

TABLE 4.12-2
VACANT INDUSTRIAL DEVELOPMENT – MADERA COUNTY

Development	Square Feet
Unincorporated County	
Massetti Building	8,000
Avenue 15 ½ Building	2,500
28 th Aero Squadron Ind. Park Bldg. 210B	6,500
	18,006 –
Building A (North)	72,025
	18,006 –
Building B (South)	72,025
City of Madera	
3469 Yeager	10,000
2890 Falcon	17,375
2880 Falcon	16,000
Granada Business Park	2,870 – 10,413
Alquist Industrial Complex	27,500
Old Hwy 99	6,000
City of Chowchilla	
Robertson Industrial Building	7,200
	139,957 -
Total	255,538

SOURCE: Innovation Group, 2008.

The additional industrial jobs created can be absorbed by the vacant units in existing industrial spaces in the County or in existing industrial operations. The most likely scenario would be that the developments would generate new jobs at existing industrial locations as opposed to generating new industrial operations. These jobs would be dispersed among all of the current industrial operations in Madera County. Thus, no growth in industrial facilities would occur.

POTENTIAL GROWTH FROM INFRASTRUCTURE/UTILITIES IMPROVEMENTS

Improvements to area roadways and intersections would serve to mitigate the impacts of the project alternatives on area roadway networks, not to increase capacity of roadways to accommodate future unplanned growth. Should the Tribe construct on-site water/wastewater facilities, they would be sized solely to serve the project alternative and off-site connection would not be permitted. Should the Tribe decide to pay for connection to local water and wastewater services, any water/wastewater pipeline extensions would be sized solely to serve the development proposed by the Tribe and no other connections would be paid for by the Tribe. Any other utilities improvements, such as improvements to electrical facilities, would be minor

and tailored specifically for the project alternative. Thus, no growth would be induced by the extension of infrastructure or the expansion of utilities resulting from the project alternatives.

4.12.2 INDIRECT EFFECTS FROM OFF-SITE TRAFFIC MITIGATION

The CEQ Regulations for Implementing NEPA (Section 1508.8) define indirect effects as impacts that are caused by an action that is later in time or farther removed in distance, but is a reasonably foreseeable result of the proposed project. Off-site traffic mitigation will potentially result in indirect effects to a variety of environmental areas, and are addressed below. Specifically, this section analyzes the effects resulting from the construction of traffic mitigation measures, as described in **Section 5.2.7**. These improvements have been identified in response to impacts analyzed in **Sections 4.8** and **4.11**.

IMPROVEMENTS

Intersection improvements recommended under each alternative are listed in **Section 5.2.7**. Mitigation measures for each intersection are identified in their year of need for each alternative. The location of mitigation measures needed in 2010 for each alternative is presented in **Figures 5-1** through **5-7**. The location of mitigation measures needed in 2030 for each alternative is presented in **Figures 5-8** through **5-14**. These figures provide a close-up view of the roadway improvements at each intersection presented **Section 5.2.7**. **Figures 4.12-1** and **4.12-2** show the intersections proposed for improvement in the vicinity of the Madera site, including aerial photographs. **Figures 4.12-3** and **4.12-4** show the intersections proposed for improvement in the vicinity of the North Fork site, including aerial photographs.

ENVIRONMENTAL CONSEQUENCES

The following section identifies the potential indirect environmental effects of construction of the intersection improvements. Because most of the identified improvements are common to all the alternatives and because the nature and scope of effects are similar, the following analysis is provided for all the alternatives.

Land Resources

The construction of roadway improvements would require grading and the introduction of fill material to extend the existing shoulders and road bed. The roadway improvements would not significantly affect the ability to extract minerals. The increase of impervious surfaces and additional earthwork could result in erosion of soils. Local jurisdictions (Caltrans, Madera County, or City of Madera, depending on the location of the improvement) would require the use of stable fill material, engineered embankments, and erosion control features to reduce the potential for slope instability, subsidence and erosion. In accordance with the Federal Clean Water Act, construction of roadway improvements over one acre in area would be required to comply with the NPDES General Construction Permit Program. To comply with the program, a

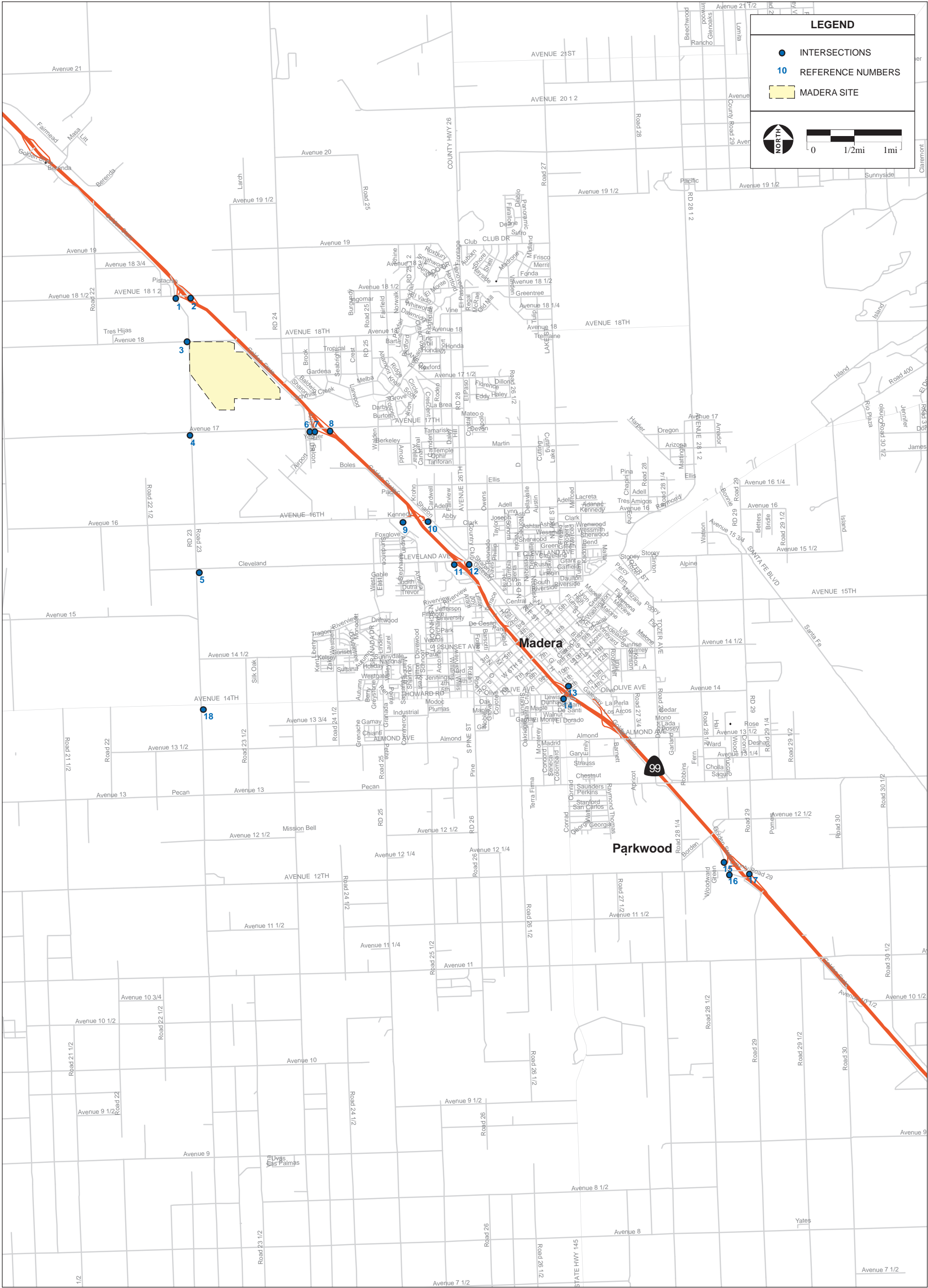


Figure 4.12-1
Intersections in the Vicinity of the Madera Site



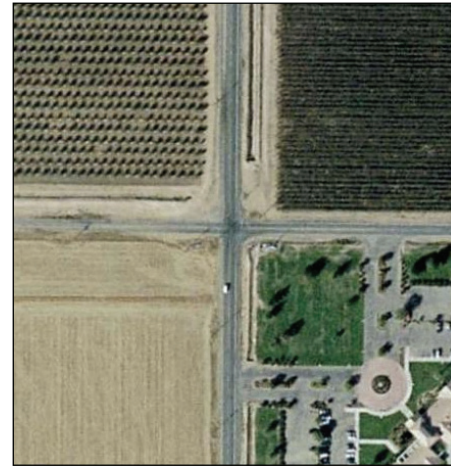
Intersection #1



Intersection #2



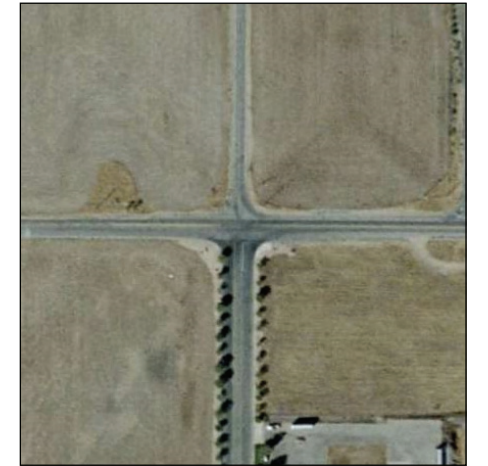
Intersection #3



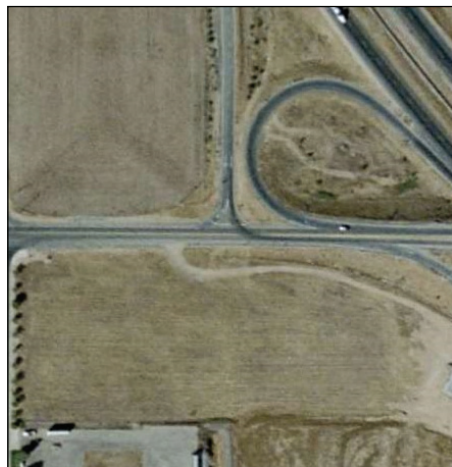
Intersection #4



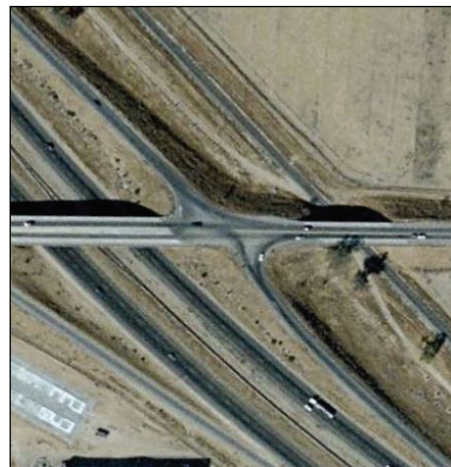
Intersection #5



Intersection #6



Intersection #7



Intersection #8



Intersection #9



Intersection #10



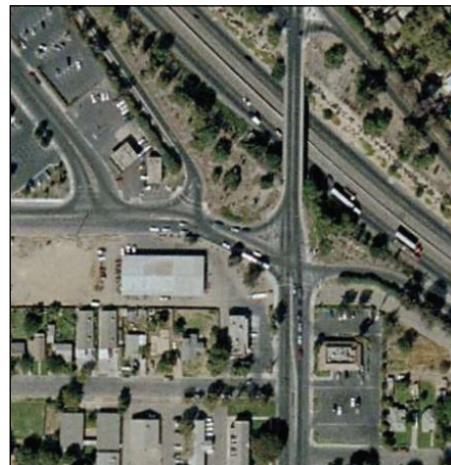
Intersection #11



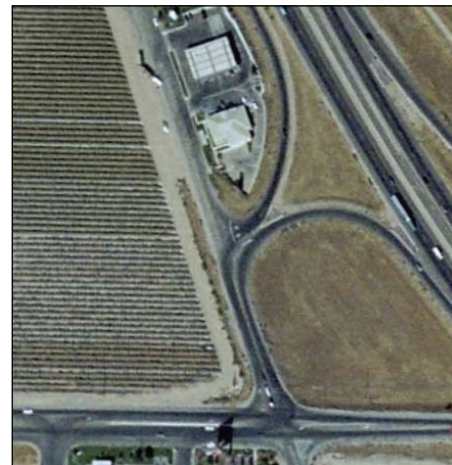
Intersection #12



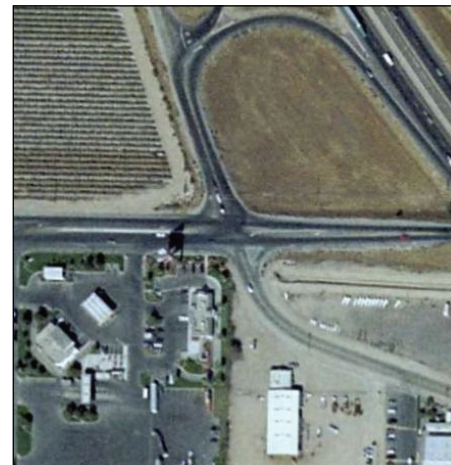
Intersection #13



Intersection #14



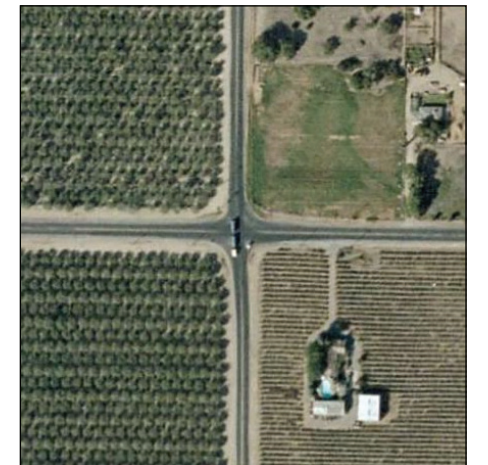
Intersection #15



Intersection #16



Intersection #17



Intersection #18

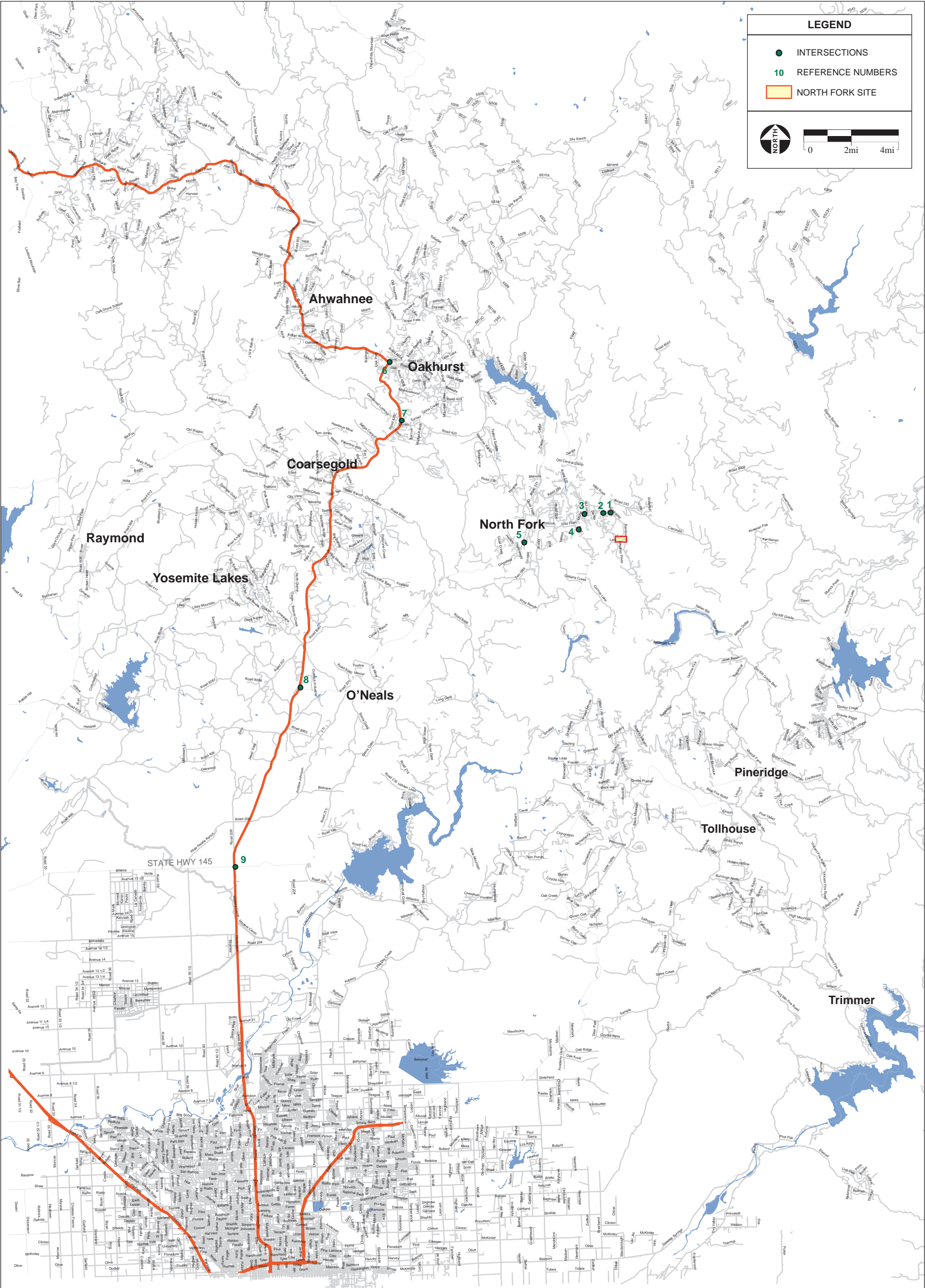


Figure 4.12-3
Intersections in the Vicinity of the North Fork Site



Intersection #1



Intersection #2



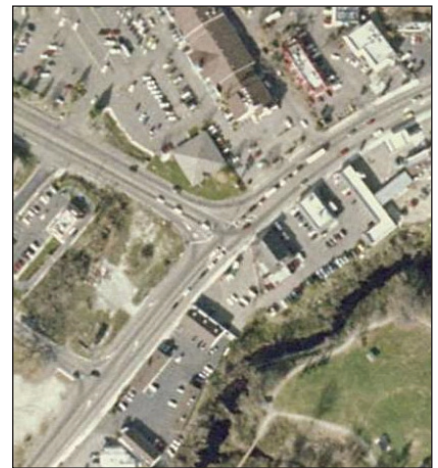
Intersection #3



Intersection #4



Intersection #5



Intersection #6



Intersection #7



Intersection #8



Intersection #9

Stormwater Pollution Prevention Plan (SWPPP) would be developed that would include soil erosion and sediment control practices to reduce the amount of exposed soil, prevent runoff from flowing across disturbed areas, slow runoff from the site, and remove sediment from the runoff. With standard construction practices and specifications required by the NPDES permit program, the roadway improvements identified under the project alternatives are expected to result in less than significant indirect effects to land resources.

Water Resources

The development of roadway improvements at the locations identified could affect water resources due to grading and construction activities and an increase in impervious surfaces. Potential effects include an increase of surface runoff and increased erosion that could adversely affect surface water quality due to increases in sediment and roadway pollutants such as grease and oil.

As discussed above, a SWPPP would be developed to comply with the NPDES General Construction Permit Program, which includes soil erosion and sediment control practices. The effects to runoff volumes resulting from the increase in impervious roadways are expected to be minimal due to the limited extent of the improvements in comparison to the existing roadways. Some existing curb and gutters and stormwater drain inlets would be removed and relocated along portions of the roadways to provide space for improvements. Curb and gutters, inlets, and other drainage facilities would be reconstructed to provide adequate facilities to direct stormwater runoff. With incorporation of these drainage features and compliance with the soil erosion and sediment control practices identified in the SWPPP, for construction projects resulting in over one acre of disturbance, effects to water resources would be less than significant.

Air Quality

Development of the roadway improvements would result in short-term construction-related air pollution emissions. The construction phase would produce two types of air contaminants: exhaust emissions from construction equipment and fugitive dust generated as a result of demolition and soil movement. Exhaust emissions from construction activities include those associated with the transport of workers and machinery to the site, as well as those produced on site as the equipment is used. Construction of improvements would be limited in scope and duration. Thus a less than significant indirect effect would result. In addition, mitigation measures are typically required by local jurisdictions to reduce construction emissions, often in conjunction with required California Environmental Quality Act (CEQA) review. These include watering the exposed soil to reduce dust, reducing speeds on all unpaved roads to 15 miles per hour, and maintaining equipment properly.

Long-term effects from roadway improvements could result if the roadway improvements resulted in localized increases in carbon monoxide (CO) concentrations and/or if the

improvements contributed to traffic congestion at large intersections. The construction of improvements would not result in adverse changes or redistribution in traffic volumes and vehicle trips. Conversely, it is expected that the improvements would reduce congestion and improve traffic flow. This would reduce emissions from idling vehicles at these intersections and roadway segments. Long-term effects would therefore be less than significant.

Biological Resources

Madera Site

Twenty-five road intersections were analyzed from the National Wetlands Inventory (NWI) Map. Though all intersections are not proposed to be improved for each alternative, the sum total of improvements was analyzed to encompass all alternatives. The Fish and Wildlife Service has no mapped wetlands in the areas of improvement. Construction of the roadway improvements would result in the loss of some existing vegetation and modification of drainage channels. Most of the habitat that exists in the areas of roadway improvements is highly disturbed and currently in commercial and agricultural areas. Due to the degraded condition of the roadside areas, habitat quality is generally low and it is unlikely that expansion of the existing facilities would result in a significant effect to sensitive species.

North Fork Site

Nine intersection improvements would result from mitigation for Alternative D. For this reason, the NWI was reviewed to assess the indirect effects on wetlands mapped by the Fish and Wildlife Service. No wetlands are reported within the areas identified for improvement. Similar to the Madera site, habitat within the areas of improvement is typically ruderal/disturbed and the expansion of existing roadways would result in a less than significant impact to special status species habitat.

General

To address effects to sensitive habitat and species, biological surveys would be required to comply with CEQA for roadway improvement projects. The lead agency under CEQA would be required to mitigate potential impacts to a less than significant level or to issue a finding of fact and statement of overriding considerations if significant impacts could not be mitigated. Thus, less than significant indirect effects to biological resources would result.

Cultural Resources

The construction of the roadway improvements has the potential to disturb or destroy historical features and archaeological resources. Grading roadsides to add traffic lanes or expanding intersections may disturb previously unknown sites. Due to prior grading of the existing roadways and occasional traffic on roadsides it is likely that resources remaining in these areas

are highly disturbed and lack integrity, thus diminishing the significance of the remaining resources.

To address potential impacts to cultural resources, cultural surveys may be required to comply with CEQA. The lead agency under CEQA would be required to mitigate potential impacts to a less than significant level or to issue a finding of fact and statement of overriding considerations if significant impacts could not be mitigated. Mitigation may include the avoidance of resources, the preservation of key historical features, or the removal, documentation, and curation of cultural resources. Therefore, a less than significant indirect effect to cultural resources would result.

Socioeconomic Conditions

Construction of roadway improvements would result in short-term inconveniences and minor delays due to constricted traffic movements and possible temporary detouring of traffic. The intersection improvements are not expected to result in long-term disruption of access to surrounding land uses or to minority or low-income populations.

The realignment and expansion of roadways would result in impacts to surrounding properties. In order to implement some improvements, land acquisition may be required. In most cases no additional property will be required (e.g. intersection signalization) or the amount of additional property required will be minimal. Should land acquisition be required, the owner of the property acquired is entitled to be compensated for the fair market value of the property, as required by the Fifth Amendment of the U.S. Constitution; Article I, Section 19 of the California Constitution; and Sections 1263.010 to 1263.330 of the California Code of Civil Procedure. A potentially significant impact would result should local jurisdictions be left to pay the full cost of such land acquisition. According to mitigation described in **Section 5.2.7**, the Tribe would pay the fair-share cost of traffic mitigation, including the cost of any required land acquisition. Therefore, a less than significant indirect socioeconomic effect would result.

Transportation

Traffic mitigation measures are meant to improve transportation facilities. Impacts to traffic operations would be temporary and necessary consequences of construction in order to facilitate long-term improvements. A less than significant effect would therefore result.

Land Use

As noted, construction of roadway improvements with no or minimal additional property requirements is not expected to cause a long-term disruption of surrounding land uses. Improvements that require land acquisition, such as realignment and expansion of roadways, could convert land from its current use. However, the amount of land required would be a narrow strip on the end of the property and should not affect the land use for the remaining property. Therefore, a less than significant indirect effect would result.

Agriculture

Construction of roadway improvements that require additional property, such as realignment and expansion of roadways, could permanently convert land from agricultural use. However, the amount of land converted would be small compared with the amount of arable land in Madera County. Therefore, a less than significant indirect effect to agriculture would result.

Public Services

Traffic improvements may require relocation of utilities near existing roadways. These utilities include overhead electricity lines and telecommunication lines. Relocation of these lines could result in a temporary break in service to some homes and businesses in the area. However, because these effects are common when upgrading and maintaining utility services, and because potential service breaks would be temporary, these effects are considered to be less than significant. No significant effects to police, fire, or emergency medical services are expected as access to homes and businesses would be maintained during the construction period.

Other Values

Construction of the proposed improvements could potentially result in noise, hazardous materials, and visual effects. Construction activities would result in short-term increases in the local ambient noise environments. However, because construction activities would be temporary in nature and are expected to occur during normal daytime hours, a less than significant effect would occur.

The accidental release of hazardous materials used during grading and construction activities could pose a hazard to construction employees and the environment. Additionally, equipment used during grading and construction activities could ignite dry grasses and weeds in construction areas. However, these hazards, which are common to construction activities, would be minimized with adherence to standard operating procedures, such as refueling in designated areas, storing hazardous materials in approved containers, and clearing dried vegetation. Such procedures are commonly required by local agencies as part of the CEQA review for roadway improvements. These potential hazards are therefore considered to be less than significant.

Visual effects would occur as the result of modification and expansion of existing roadways. However, because the intersections would conform to modern design standards and are expected to be landscaped to suit the settings, a less than significant effect would occur.

4.12.3 INDIRECT EFFECTS FROM OFF-SITE PIPELINE CONSTRUCTION

This section analyzes the effects resulting from the construction of off-site water and wastewater pipelines, as described in **Section 2.0**, and summarized below.

IMPROVEMENTS

Pipelines for water and wastewater may be constructed to connect either the Madera or North Fork Sites to local water/wastewater facilities. As noted in **Section 2.0**, local water/wastewater hookup is one of the options for water/wastewater service available for the alternatives. Local water hookup would require a looped pipeline system be created to connect to the City's water supply system (**Figure 2-9**). Three possible pipeline alignments could occur for local wastewater hookup, as described in **Section 2.0**, **Appendix I**, and **Appendix BB**. A graphic representation of the three pipeline alignment options is contained in **Figure 2-7**. In addition, treated effluent from an on-site wastewater treatment plant (WWTP) could be used to irrigate the City of Madera's golf course located south of Avenue 17, between Road 23 and the municipal airport. Should the Tribe and City of Madera choose to implement this option, approximately one mile of recycled water pipeline would be located along Road 23 (**Figure 2-9**).

Like the Madera site, the North Fork site may need to connect to the County pipelines, which terminate approximately two and a half miles northeast of the North Fork site along Road 228 (Mono Drive), south of Minarets Road (**Figure 2-24**).

ENVIRONMENTAL CONSEQUENCES

The following section identifies the potential indirect environmental effects of the pipelines for the Madera site and North Fork site. Where appropriate, effects to resources are discussed based on the project site location. Where effects to resources would be the same if either project site were developed, the discussion pertains to both project sites.

Land Resources

The construction of off-site pipelines would occur primarily along existing roadways and would require trenching and backfilling/re-paving in order to install the pipelines within the roadway. Therefore, effects to land resources would be similar to those discussed above under off-site roadway improvements, except the effects would be somewhat lessened because the roadways/intersections would not be extended. Instead, disturbances would occur largely within currently disturbed roadways. A less than significant indirect effect to land resources would result.

Water Resources

Effects to water resources would be similar to those discussed above under off-site roadway improvements, except the effects would be lessened because the roadways/intersections would not be extended. Instead, disturbances would occur largely within currently disturbed roadways. New impervious surfaces and therefore additional pollutant runoff would not occur. Thus, a less than significant indirect effect to water resources would result.

Air Quality

Installation of water and wastewater pipelines would result in short-term construction-related air pollution emissions. The construction phase would produce two types of air contaminants: exhaust emissions from construction equipment and fugitive dust generated as a result of demolition and soil movement. Exhaust emissions from construction activities include those associated with the transport of workers and machinery to the site, as well as those produced on site as the equipment is used. Construction of improvements would be limited in scope and duration. Thus a less than significant indirect effect would result. In addition, mitigation measures are typically required by local jurisdictions to reduce construction emissions, often in conjunction with required California Environmental Quality Act (CEQA) review. These include watering the exposed soil to reduce dust, reducing speeds on all unpaved roads to 15 miles per hour, and maintaining equipment properly.

Biological Resources

Construction of the water and wastewater pipelines has the potential to impact vegetation communities and unidentified waters of the U.S. Therefore, the NWI Map was analyzed to assess potential indirect effects from the construction of the water and wastewater pipeline routes from the Madera and North Fork sites.

Madera Site

The proposed water source connection loop for the Madera site would travel along existing roads (Golden State Blvd.) to a 12-inch main located on Airport Drive, at the Madera Municipal Airport. The NWI maps show no existing wetlands along the route and vegetation communities are rural residential and agriculture.

The wastewater pipeline has three potential routes to the Madera site. All three originate from the City of Madera WWTP, located on Avenue 13 southwest of the site. The Road 23 Option pipeline would travel east along Avenue 13 to head north along Road 23 to terminate at the site. Vegetation communities along the route are all agriculture, rural residential, and disturbed roadside vegetation. Road 23 bisects the Fresno River at Avenue 15, according to the NWI map. Crossing the Fresno River could require a California Department of Fish & Game 1600 permit and USACE Section 404 Permit, however the pipeline is expected to follow the roadway over the River, causing no impacts to biological resources in or on the banks of the River. Note that the potential recycled water pipeline would also follow Road 23 to the golf course approximately one mile south of the Madera site and would not cross the Fresno River. The Airport Drive Option pipeline would head east of the site and travel along the same route as the water source route, mentioned above, with no impacts to wetlands. Similar to the Airport Drive Option, the SR-99 Option would travel on the west side of SR-99 and bisect Avenue 16 diagonally from Golden State Drive. There are no NWI wetlands mapped along the SR 99 route.

Most of the habitat that exists in the areas of the Madera pipeline alignments is highly disturbed roadsides. Due to the degraded condition of the roadway/roadside areas, habitat quality is generally low and it is unlikely that extending the existing pipeline facilities would result in a significant effect to sensitive species. Due to the temporary disturbance of the pipeline alignment along existing roadways, the degraded condition of existing habitat, and the requirements of CEQA to address impacts to biological resources, the indirect effects of extending existing pipelines would be less than significant.

North Fork Site

The water/wastewater route for the North Fork Site would follow existing roads from the North Fork Rancheria to the WWTP site in the town of North Fork. There are no occurrences of wetlands mapped by the NWI for the proposed route. However, the route has the potential to impact the South Fork of Willow Creek (i.e. stream crossing). Depending on the method, (e.g., directional drill or above-ground installation) the crossing could require a CDFG 1600 Permit and USACE Nationwide Permit. Potential habitat impacts would be less than significant due to the limited resources associated with roadside vegetation communities.

General

To address effects to sensitive habitat and species, biological surveys would be required to comply with CEQA. The lead agency under CEQA would be required to mitigate potential impacts to a less than significant level or to issue a finding of fact and statement of overriding considerations if significant impacts could not be mitigated.

Cultural Resources

The construction pipelines have the potential to disturb or destroy historical features and archaeological resources. Grading roadways/roadsides and trenching to add pipeline may disturb previously unknown sites. Due to prior grading of the existing roadways and occasional traffic on roadsides, it is likely that resources remaining in these areas are highly disturbed and lack integrity, thus diminishing the significance of the remaining resources.

To address potential impacts to cultural resources, cultural surveys may be required to comply with CEQA. The lead agency under CEQA would be required to mitigate potential impacts to a less than significant level or to issue a finding of fact and statement of overriding considerations if significant impacts could not be mitigated. Mitigation may include the avoidance of resources, the preservation of key historical features, or the removal, documentation, and curation of cultural resources. Therefore, a less than significant indirect effect to cultural resources would result.

Socioeconomic Conditions

Effects to socioeconomic conditions from construction of pipelines would be very similar to the effects noted above to construction of roadway improvements. These effects are primarily limited to temporary inconvenience due to construction and would not result in a significant indirect effect to socioeconomic conditions.

Transportation

Construction of the pipelines could occur along roadways, impacting traffic flow. However, since the construction and resulting traffic effects would be temporary, a less than significant effect to transportation would result.

Land Use

Construction of the pipelines would require utility easements which would limit future construction. An easement is a right, privilege or interest limited to a specific purpose which one party has in the land of another. Underground utility easements are typically laid out as corridors of sufficient width to give some latitude in locating the actual utility line, and to permit sufficient room for periodic inspection, repair and maintenance. Underground utility easements typically prohibit the construction of building improvements, but may permit the construction of non-structural improvements, such as paved surface parking or landscaping. The pipelines would be constructed to follow public roads and would not be in an area where a building would normally be built or where an agricultural field would be plowed. Therefore, less than significant indirect impacts to land uses would occur.

Agriculture

As discussed under Land Use, the pipelines would be placed within or in close proximity to public roads. Agricultural fields usually include a buffer between the crops and public thoroughways. The pipelines are not expected to extend past this buffer area, and would therefore not affect agricultural practices. Therefore, no significant indirect impact to agriculture would occur.

Public Services

As with traffic improvements, the extension of water and wastewater lines could result in a temporary break in public services to some homes and businesses in the area. However, because these effects are common when upgrading and maintaining utility services, and because potential service breaks would be temporary, these effects are considered to be less than significant. No significant effects to police, fire, or emergency medical services are expected as access to homes and businesses would be maintained during the construction period.

Other Values

As with off-site traffic improvements, construction of the proposed water and wastewater lines could potentially result in noise and hazardous materials effects. Construction activities would result in short-term increases in the local ambient noise environments. However, because construction activities would be temporary in nature and are expected to occur during normal daytime hours, a less than significant effect would occur.

The accidental release of hazardous materials used during construction activities could pose a hazard to construction employees and the environment. Additionally, equipment used during construction activities could ignite dry grasses and weeds in construction areas. However, these hazards, which are common to construction activities, would be minimized with adherence to standard operating procedures, such as refueling in designated areas, storing hazardous materials in approved containers, and clearing dried vegetation. These potential hazards are therefore considered to be less than significant.

Because the proposed water and wastewater lines would be constructed below ground, visual indirect effects would be less than significant.

SECTION 5.0

MITIGATION MEASURES

SECTION 5.0

MITIGATION MEASURES

5.1 INTRODUCTION

The Council on Environmental Quality (CEQ) National Environmental Policy Act (NEPA) Regulations and guidance documents require that mitigation measures be developed for all of a proposal's effects on the environment where it is feasible to do so (46 Fed. Reg. 18026, 19a; 40 CFR Sections 1502.14(f) and 1502.16(h)). The NEPA Regulations define mitigation as "avoiding the impact altogether by not taking a certain action or parts of an action, minimizing impacts by limiting the degree or magnitude of the action and its implementation, rectifying the impact by repairing, rehabilitating, or restoring the affected environment, reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action, compensating for the impact by replacing or providing substitute resources or environments" (40 CFR Section 1508.20). These principles have been applied to guide design and siting criteria for the alternatives. Where potential effects on the environment were identified in early stages of project design and EIS preparation, appropriate changes in the project description were made to minimize or eliminate them. Other applications of mitigation have been incorporated into the design of the alternatives and have been mentioned throughout the Environmental Impact Statement (EIS). In addition to the mitigation measures that have been incorporated into the design of the alternatives, the following section provides measures to mitigate specific effects identified in the preparation of the EIS. Mitigation measures have been identified where feasible to address specific effects regardless of whether they are considered "significant" (46 Fed. Reg. 18026, 19a). Note that assignment of mitigation responsibility to the Tribe shall mean the Tribe or any of the Tribe's designees, which for instance may include a construction contractor or the Tribe's facilities manager.

5.2 MITIGATION MEASURES

5.2.1 LAND RESOURCES

The following measures are recommended for Alternatives A, B, C and D:

SEISMICITY

- A. All structures shall be designed in compliance with the California Building Code (CBC) Building Code (Article VI Chapter 6.04) current at the start of construction such that risks to the health or safety of workers or members of the public from earthquake hazards are reduced to a less-than-significant level.

Adoption of the above mitigation will reduce seismicity impacts to a less than significant level.

The following measures are recommended for Alternative D:

TOPOGRAPHY

- B. Creation of soil stabilization areas around the building pad shall be properly compacted and shall be subject to a geotechnical review prior to construction of the areas. Proper hydroseeding, use of straw fiber rolls, and other soil erosion protection measures shall be utilized as part of a comprehensive erosion control plan.

Adoption of the above mitigation will reduce topography impacts to a less than significant level.

5.2.2 WATER RESOURCES

SURFACE WATER

The following measures are recommended for Alternatives A, B, C, and D:

Flooding

- A. To reduce the project's potential to increase surface runoff, impervious surfaces shall be minimized where feasible. Where feasible, all areas outside of buildings and roads will be kept as permeable surfaces, either as vegetation or high infiltration cover such as mulch, gravel, or turf block. Pedestrian pathways shall use a permeable surface where possible, such as crushed aggregate or stone with sufficient permeable joints (areas between stone or brick if used). Rooftops shall drain to vegetated driplines to maximize infiltration prior to concentrating runoff.

Adoption of the above mitigation will further reduce already less than significant impacts to flooding.

Construction Impacts

- B. An erosion control plan will be developed with the primary intent to decrease pollutants entering the water columns, with a secondary intent of trapping pollutants before they exit the site.
- C. The Tribe shall comply with all provisions stated in the Clean Water Act (CWA). As required by the General Construction National Pollutant Discharge Elimination System (NPDES) permit issued by the U.S. Environmental Protection Agency (USEPA) under the CWA, a Storm Water Pollution Prevention Plan (SWPPP) shall be prepared that will address water quality impacts associated with construction of the project. Water quality control measures identified in the Storm Water Pollution Prevention Plan shall include, but not be limited to, Best Management Practices (BMPs) described below:

- a. Existing vegetation shall be retained where possible. To the extent feasible, grading activities shall be limited to the immediate area required for construction.
- b. Temporary erosion control measures (such as silt fences, staked straw bales, and temporary revegetation) shall be employed for disturbed areas.
- c. No disturbed surfaces shall be left without erosion control measures in place during the winter and spring months.
- d. Sediment shall be retained on-site by a system of sediment basins, traps, or other appropriate measures.
- e. A Spill Prevention Control and Countermeasure Plan (SPCC) shall be developed, if necessary, which will identify proper storage, collection, and disposal measures for potential pollutants (such as fuel, fertilizers, pesticides, etc.) used on-site.
- f. Petroleum products shall be stored, handled, used, and disposed of properly.
- g. Construction materials, including topsoil and chemicals, shall be stored, covered, and isolated to prevent runoff losses and contamination of groundwater.
- h. Fuel and vehicle maintenance areas shall be established away from all drainage courses and designed to control runoff.
- i. Sanitary facilities shall be provided for construction workers.
- j. Disposal facilities shall be provided for soil wastes, including excess asphalt produced during construction.
- k. All workers and contractors shall be educated in the proper handling, use, cleanup, and disposal of all chemical materials used during construction activities.
- l. All contractors involved in the project shall be educated on the potential environmental damages resulting from soil erosion prior to development by conducting a pre-construction conference. Copies of the project's erosion control plan shall be distributed at this time. All construction bid packages, contracts, plans and specifications shall contain language that requires adherence to the plan.
- m. Construction activities shall be scheduled to minimize land disturbance during peak runoff periods. Soil conservation practices shall be completed during the fall to reduce erosion during the rainy seasons.
- n. Construction zones shall be created and only one part of a construction zone shall be graded at a time to minimize exposed areas. If possible, grading on a particular zone shall be delayed until protective cover is restored on the previously graded zone.
- o. Utility installations shall be coordinated to limit the number of excavations.

- p. Disturbed soils shall be protected from rainfall during construction by preserving as much natural cover, topography, and drainage as possible. Trees and shrubs shall not be removed unnecessarily.
- q. Disturbed areas shall be stabilized as promptly as possible, especially on long or steep slopes. Recommended plant materials and mulches shall be used to establish protective ground cover. Vegetation such as fast growing annual and perennial grasses shall be used to shield and bind the soil. Mulches and artificial binders shall be used until vegetation is established. Where truck traffic is frequent, gravel approaches shall be used to reduce soil compaction and limit the tracking of sediment off site.
- r. Surface water runoff shall be controlled by directing flowing water away from critical areas and by reducing runoff velocity. Diversion structures such as terraces, dikes, and ditches shall collect and direct runoff water around vulnerable areas to prepared drainage outlets. Surface roughening, berms, check dams, hay bales, or similar devices shall be used to reduce runoff velocity and erosion.
- s. Sediment shall be contained when conditions are too extreme for treatment by surface protection. Temporary sediment traps, filter fabric fences, inlet protectors, vegetative filters and buffers, or settling basins shall be used to detain runoff water long enough for sediment particles to settle out.
- t. Topsoil removed during construction shall be carefully stored and treated as an important resource. Berms shall be placed around topsoil stockpiles to prevent runoff during storm events.
- u. The disturbance of soils shall be avoided and minimized as fully as possible.

Adoption of the above mitigation will further reduce the less than significant impacts of construction on surface water.

Operational Impacts

- D. Fertilizer use shall be limited to the minimum amount necessary, taking into account any nutrient levels in the recycled water source. Fertilizer shall not be applied prior to a rain event.
- E. Landscape irrigation shall be adjusted based on weather conditions and shall be reduced or eliminated during the wet portion of the year in order to prevent excessive runoff.

- F. The sprayfield shall be designed so that any wastewater runoff is captured and not allowed to run off the site or enter waters of the U.S.
- G. At least 15 percent of surface parking areas shall be constructed of pervious surfaces.

Adoption of the above mitigation will further reduce the less than significant operational impacts of the alternatives on surface waters.

The following measures are recommended for Alternative D:

- H. The Tribe shall implement a stream flow monitoring program for all on-site streams as soon as is feasible after project approval and preferably at least one year before opening of the project facilities to the public (to allow for baseline monitoring).
- I. Should project pumping (considered separately from other new projects in the area and allowing for weather considerations) cause the reduction of on-site stream flows by 25 percent or more, the Tribe shall implement a program to reduce surface water flow impacts in consultation with the USEPA and Madera County.
- J. The sprayfield shall be designed so that any wastewater runoff is captured and not allowed to run off the site or enter waters of the U.S.
- K. At least 15 percent of surface parking areas shall be constructed of pervious surfaces.

Adoption of the above mitigation will reduce potentially significant surface water impacts of to a less than significant level.

GROUNDWATER

The following measures are recommended for Alternatives A, B, and C:

- L. Stormwater BMPs that promote infiltration of water from stormwater runoff and on-site disposal of treated wastewater shall be implemented. BMPs for enhancing infiltration of stormwater runoff have the potential to increase the rate of natural recharge at the site, while on-site disposal of treated wastewater will return groundwater originating from the casino wells back to the aquifer. The effectiveness of these measures to reduce drawdown impacts is directly proportional to the rate of new recharge compared with the pumping rate (see **Appendix L**). Given the limited amount of rainfall received in Madera County, additional recharge from stormwater BMPs would have a minimal effect on the drawdown effects of on-site pumping, offsetting such effects by only 1.6 percent. Irrigating on-site landscaping combined with the use of on-site sprayfields and/or leachfields would have a far greater offsetting effect on the aquifer, reducing drawdown from 7 to 67 percent. Under each alternative, if treated wastewater is disposed via a leachfield, the recharge rate would be at the upper end of this range; whereas, if the treated wastewater is disposed in a

sprayfield, the recharge rate would be in the lower end of the range (see **Appendix L**, Section 6.7.2 for a detailed breakdown of potential recharge rates for each disposal option).

- M. If on-site groundwater resources are used for water supply, groundwater sampling and analysis shall be performed to determine if treatment is necessary. If treatment is necessary, an on-site water treatment plant shall be constructed to treat drinking water to USEPA standards.
- N. The Tribe shall adopt water conservation measures, such as electronic dispensing devices in faucets, low flow toilets, low flow showerheads, and the use of native plants in landscaping, to reduce the consumption of groundwater as recommended by the regional groundwater management plan.
- O. Effects to regional overdraft shall be reduced by Tribal contributions to a reserved water bank or groundwater recharge area in an amount at least equivalent to property pumping rates. Possible groundwater recharge areas include areas operated or proposed by the Madera Irrigation District (MID) (**Appendix L**). The Tribe has executed a Memorandum of Understanding (MOU) with MID (**Appendix C**) that provides for equivalent water contributions to a MID recharge area should development under Alternative A occur. Therefore this mitigation measure would not apply to Alternative A.

Adoption of the above mitigation will reduce the operational impacts of the alternatives on groundwater resources to a less than significant level.

The following measures are recommended for Alternatives A, B, C:

- P. The Tribe shall implement a groundwater monitoring program (described in **Appendix L**) as soon as is feasible after project approval and preferably at least one year before opening of the project facilities to the public (to allow for baseline monitoring).
- Q. The Tribe shall implement a program to compensate neighboring well owners for impacts to well operation. The actual amount of interference drawdown associated with the project and the future rate of regional groundwater level decline shall be estimated from the groundwater monitoring program (**Appendix L**). At least one year of baseline data and one year of data after project pumping begins should be collected prior to implementation of the following well impact compensation program:
 - a. Reduction in usable well life –The tribe shall reimburse the owners of wells that become unusable within 30 years of the onset of project pumping for a portion of the prevailing, customary cost for well replacement, rehabilitation or deepening. In order to be eligible, the well owner will need to provide the tribe with documentation of the well location and completion data, and prove that the well was constructed and usable before project

pumping was initiated. The percentage of the cost reimbursed by the tribe shall depend upon the degree to which the well's usable life is shortened as determined from data gathered during the groundwater level monitoring program and water level data gathered by others. Specifically, the following approach shall be used:

- i. Regional groundwater monitoring data for the period between the time that pumping for the project begins and the well becomes unusable will be analyzed using a best-fit line approach to determine the regional rate of groundwater level decline in feet per year;
 - ii. Groundwater monitoring data for the project will be used to assess the amount of drawdown in feet experienced by the affected well for which the project is responsible;
 - iii. The number of years by which the well's life is shortened due to the project will be calculated by dividing the amount of drawdown induced by the project by the calculated annual rate of regional water level decline; and
 - iv. The Tribe shall reimburse the well owner for the cost of replacing or deepening the unusable well at a rate of 10 percent of the customary and prevailing cost for each year that the well life is shortened due to the project.
- b. Groundwater level falling near or below pump intake – The concept of usable well life can also be applied to this impact, except that the well's usable life is extended by lowering the pump intake. The impact of project pumping on shortening this time period would be similar to the impact on shortening well life, and shall be determined using the same methodology described above. The tribe shall reimburse the owners of wells with pumps that require lowering within 30 years of the onset of project pumping for a portion of the prevailing, customary cost for this service. The percentage of the cost reimbursed by the tribe shall depend upon the degree to which the time period until a well's pump intakes require lowering at a rate of 10% of the cost of lowering the pump or pump intake for each year that the well's life with the pump at the original position is shortened. In order to be eligible, the well owner will need to provide the tribe with documentation of the well location and completion data, including pump intake depth, and prove that the well was constructed and usable before project pumping was initiated. The Tribe must be made aware of the cost reimbursement claim prior to lowering of the pump intake, so that the need for possible well deepening, replacement or rehabilitation can be assessed and inefficiencies can be avoided. At the Tribe's discretion, compensation may be paid toward well deepening, replacement or rehabilitation in lieu of toward lowering the pump intake.
- c. Increased Electrical and Maintenance Cost – The Tribe shall reimburse well owners pumping more than 100 AF/year for their additional annual electrical costs (for no longer than 30 years) at the prevailing electrical rate based on the following formula:

$$\text{KWhr/year} = \frac{(\text{gallons Pumped/year}) \times (\text{feet of interference drawdown})}{1621629}$$

In order to qualify for reimbursement, the well owner must provide proof of the actual annual volume of water pumped. As an alternative to annual payments, a one-time lump sum payment of a mutually agreeable amount could be made.

- d. No reimbursement would be made available for wells installed after operation of the project.
- e. For any of the above impacts, the Tribe may choose at its discretion to provide the well owner with a connection to a local public or private water supply system in lieu of the above mitigation measures, at a reduced cost in proportion to the extent the impact was caused by project pumping.
- f. The known owners of identified wells within two miles of the project pumping well shall be notified of the well impact compensation program outlined above before project pumping begins.
- g. The Tribe shall contract with a third party such as the County of Madera to oversee this well impact compensation program.

Adoption of the above mitigation will further reduce the less than significant operational impacts of the alternatives on neighboring wells.

The following measures are recommended for Alternative D:

- R. Stormwater BMPs that promote infiltration of water from stormwater runoff and on-site disposal of treated wastewater shall be implemented. BMPs for enhancing infiltration of stormwater runoff have the potential to increase the rate of natural recharge at the site, while on-site disposal of treated wastewater will return groundwater originating from the casino wells back to the aquifer.
- S. If on-site groundwater resources are used for water supply, groundwater sampling and analysis shall be performed to determine if treatment is necessary. If treatment is necessary, an on-site water treatment plant shall be constructed to treat drinking water to USEPA standards.
- T. The Tribe shall adopt water conservation measures, such as electronic dispensing devices in faucets, low flow toilets, and the use of native plants in landscaping, to reduce the consumption of groundwater as recommended by the regional groundwater management plan.

- U. The Tribe shall implement a groundwater monitoring program (described in **Appendix L**) as soon as is feasible after project approval and preferably at least one year before opening of the project facilities to the public (to allow for baseline monitoring).
- V. The Tribe shall implement a program to compensate neighboring well owners for impacts to well operation. The actual amount of interference drawdown associated with the project and the future rate of regional groundwater level decline shall be estimated from the groundwater monitoring program (**Appendix L**). At least one year of baseline data and one year of data after project pumping begins should be collected prior to implementation of the following well impact compensation program:
 - a. Reduction in usable well life –The tribe shall reimburse the owners of wells that become unusable within 30 years of the onset of project pumping for a portion of the prevailing, customary cost for well replacement, rehabilitation or deepening. The percentage of the cost reimbursed by the tribe shall depend upon the degree to which the well’s usable life is shortened: 5 % for one year, 10% for two years and 15 % for three years. In order to be eligible, the well owner will need to provide the tribe with documentation of the well location and completion data, and prove that the well was constructed and usable before project pumping was initiated.
 - b. Groundwater level falling near or below pump intake – The concept of usable well life can also be applied to this impact, except that the well’s usable life is extended by lowering the pump intake. The impact of project pumping on shortening this time period would be similar to the impact on shortening well life, and shall be determined by dividing the amount of interference drawdown at the off-Site well by the regional rate of groundwater decline. The tribe shall reimburse the owners of wells with pumps that require lowering within 30 years of the onset of project pumping for a portion of the prevailing, customary cost for this service. The percentage of the cost reimbursed by the tribe shall depend upon the degree to which the time period until a well’s pump intakes require lowering at a rate of 10% for each year. In order to be eligible, the well owner will need to provide the tribe with documentation of the well location and completion data, including pump intake depth, and prove that the well was constructed and usable before project pumping was initiated. The Tribe must be made aware of the cost reimbursement claim prior to lowering of the pump intake, so that the need for possible well deepening, replacement or rehabilitation can be assessed and inefficiencies can be avoided. At the Tribe’s discretion, compensation may be paid toward well deepening, replacement or rehabilitation in lieu of toward lowering the pump intake.
 - c. Increased Electrical and Maintenance Cost – The Tribe shall reimburse well owners pumping more than 100 AF/year for their additional annual electrical costs (for no longer than 30 years) at the prevailing electrical rate based on the following formula:

$$\text{KWhr/year} = \frac{(\text{gallons Pumped/year}) \times (\text{feet of interference drawdown})}{1621629}$$

In order to qualify for reimbursement, the well owner must provide proof of the actual annual volume of water pumped. As an alternative to annual payments, a one-time lump sum payment of a mutually agreeable amount could be made.

- d. No reimbursement would be made available for wells installed after operation of the project.
- e. For any of the above impacts, the Tribe may choose at its discretion to provide the well owner with a connection to a local public or private water supply system in lieu of the above mitigation measures, at a reduced cost in proportion to the extent the impact was caused by project pumping.
- f. The known owners of identified wells within two miles of the project pumping well shall be notified of the well impact compensation program outlined above before project pumping begins.
- g. The Tribe shall contract with a third party such as the County of Madera to oversee this well impact compensation program.

Adoption of the above mitigation will reduce the operational impacts of Alternative D on groundwater resources and neighboring wells to a less than significant level.

5.2.3 AIR QUALITY

CONSTRUCTION IMPACTS

A Construction Emissions Mitigation Plan, that includes the below mitigation measures for construction impacts, is included in **Appendix T**.

The following mitigation measures are recommended for Alternatives A, B, C, and D:

- A. All construction mitigation measures shall be incorporated into a Construction Emissions Mitigation Plan.
- B. During construction, the Tribe shall comply with San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation VIII (Fugitive Dust Rules).
- C. Prior to the start of any construction activity on the site, the Tribe shall create a Dust Control Plan pursuant to SJVAPCD Rule 8021. Implementation of SVAPCD Rule 8021 would limit visible dust emissions to 20 percent opacity.
- D. In addition to full compliance with all applicable Regulation VIII requirements, the Tribe shall implement the following dust control practices, drawn from Tables 6-2 and 6-3 of SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI), during construction:

- a. All disturbed areas, including soil stockpiles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover.
 - b. All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
 - c. All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
 - d. When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, or at least six inches of freeboard space from the top of the container shall be maintained.
 - e. All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.)
 - f. Following the addition of materials to, or the removal of materials from, the surface of outdoor soil stockpiles, piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
 - g. Limit traffic speeds on unpaved roads to 15 mph; and
 - h. Install erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- E. The Tribe shall prepare an inventory of all equipment prior to construction and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking. Control technologies such as particle traps control approximately 80 percent of diesel particulate matter. Specialized catalytic converters (oxidation catalysts) control approximately 20 percent of diesel particulate matter, 40 percent of carbon monoxide emissions, and 50 percent of hydrocarbon emissions.
- F. The Tribe shall ensure that diesel-powered construction equipment is properly tuned and maintained, and shut off when not in direct use.
- G. The Tribe shall prohibit engine tampering to increase horsepower, except when meeting manufacturer's recommendations.
- H. The Tribe shall locate diesel engines, motors, and equipment staging areas as far as possible from the closest residences.
- I. The Tribe shall require the use of low sulfur diesel fuel (<15 parts per million sulfur) for diesel construction equipment, if available.

- J. The Tribe shall reduce construction-related trips of workers and equipment, including trucks. A construction traffic and parking management plan shall be developed that minimizes traffic interference and maintains traffic flow.
- K. The Tribe shall lease or buy newer, cleaner equipment (1996 or newer model), using a minimum of 75 percent of the equipment's total horsepower.
- L. The Tribe shall use lower-emitting engines and fuels, including electric, liquefied gas, hydrogen fuel cells, and/or alternative diesel formulations.

Adoption of the above mitigation will reduce the construction impacts of the alternatives on air quality to a less than significant level.

OPERATIONAL IMPACTS

The following mitigation measures are recommended for Alternatives A, B, and C:

- M. The Tribe shall provide transportation (e.g., shuttles) to major transit stations and multi-modal centers.
- N. The Tribe shall provide transit amenities such as bus turnouts; shelter benches; street lighting, route signs, and displays in and around the transit shelter benches to encourage public use of the transit service.
- O. The Tribe shall contribute to dedication of land for off-site bicycle trails linking the project to designated bicycle commuting routes in accordance with the regional Bikeway Master Plan.
- P. The Tribe shall maximize the potential of passive solar design principles where feasible.
- Q. The Tribe shall ensure the use of clean fuel vehicles in the vehicle fleet where practicable.
- R. The Tribe shall provide a parking lot design that includes clearly marked and shaded pedestrian pathways between transit facilities and building entrances.
- S. The Tribe shall provide amenities such as personal lockers and showers, bicycle lockers and racks, bus pass subsidies and flexible schedules for employees who walk, bike, or utilize public transit to work.
- T. The Tribe shall provide electric vehicle charging facilities.
- U. The Tribe shall provide preferential parking for vanpools and carpools.
- V. The Tribe shall provide on-site pedestrian facility enhancements such as walkways, benches, proper lighting, vending machines, and building access, which are physically separated from parking lot traffic.

The following measures are recommended for Alternatives A and B only:

- W. A parking structure is proposed in Alternatives A and B. If the parking structure includes mechanical ventilation and exhaust, the exhaust should be vented in a direction away from inhabited areas.
- X. The Tribe shall provide adequate ingress and egress at entrances to the Casino to minimize vehicle idling and traffic congestion.
- Y. The Tribe shall contract only with commercial landscapers who operate equipment that complies with the most recent California Air Resources Board certification standards, or standards adopted no more than three years prior to date of use.

The following mitigation measures are recommended for Alternative C only:

- Z. The Tribe shall encourage reduced setbacks for retail and employment land uses on streets with bus services consistent with zoning code requirements.
- AA. The Tribe shall provide adequate ingress and egress at entrances to public facilities to minimize vehicle idling and traffic congestion.
- BB. The Tribe shall encourage a development pattern that discourages auto-oriented uses in areas adjacent to bus stops and other transit facilities.

The following mitigation measure is recommended for Alternatives A, B, C, and D:

- CC. The Tribe shall adopt an anti-idling ordinance for the facility. To help maintain compliance with this ordinance, the Tribe should consider creating a driver's lounge, where drivers can wait and occupy themselves comfortably instead of sitting in their buses or trucks.

Adoption of the above mitigation will reduce the operational impacts of the alternatives on air quality, but not to a less than significant level.

The following mitigation measure is recommended for Alternatives A, B, and C:

- DD. The Tribe shall implement or fund the implementation of one or more of the following measures ~~will be implemented~~ to reduce NO_x, ROG, and PM₁₀ emissions to less than the SJVAPCD thresholds, which would result in a less than significant impact from Alternatives A, B, and C.

Table 5-1 shows the reductions necessary for each alternative.

- a. Pave or resurface unpaved roadway(s) or roadway(s) in a deteriorated state within the San Joaquin Valley Air Basin, which have a minimum daily vehicle count of 100 vehicles.
- b. Contribute to a program to retrofit residential fireplaces that do not meet EPA certification standards within the San Joaquin Valley Air Basin.
- c. Purchase low emission buses to replace older municipal or school buses used within the San Joaquin Valley Air Basin.
- d. Purchase hybrid vehicles to replace existing governmental fleet vehicles within the San Joaquin Valley Air Basin.

- e. Purchase and install on-site or within the San Joaquin Valley Air Basin; a photovoltaic array, wind powered energy, and/or other form(s) of renewable energy.
- f. Contribute a fair share percentage to the synchronization of traffic signals within the San Joaquin Valley Air Basin.
- g. Purchase Emission Reduction Credits that are available from sources within the San Joaquin Valley Air Basin.

TABLE 5-1
OPERATIONAL MITIGATED EMISSIONS AND SIGNIFICANCE

Emission Source	ROG	NO_x
Alternative A	Pounds per Day	
Mitigated Emissions (all mitigation except DD)	22.99	46.64
Reduction from Mitigation Measure DD	12.99	36.64
Final Mitigated Emissions	10	10
<i>Significance Effect?</i>	<i>No</i>	<i>No</i>
Alternative B		
Mitigated Emissions (all mitigation except DD)	16.49	33.77
Reduction from Mitigation Measure DD	6.49	23.77
Final Mitigated Emissions	10	10
<i>Significance Effect?</i>	10	10
Alternative C		
Mitigated Emissions (all mitigation except DD)	21.89	39.39
Reduction from Mitigation Measure DD	11.89	29.39
Final Mitigated Emissions	10	10
<i>Significance Effect?</i>	<i>No</i>	<i>No</i>
Alternative D		
Mitigated Emissions (all mitigation except DD)	2.26	4.62
Reduction from Mitigation Measure DD	0	0
Final Mitigated Emissions	10	10
<i>Significance Effect?</i>	<i>No</i>	<i>No</i>

Source: URBEMIS 9.2.4, 2007.

ODOR IMPACTS

To avoid/reduce potential adverse odor effects associated with potential wastewater treatment and disposal facility, the following mitigation measures are recommended for Alternatives A, B, C, and D:

EE. The wastewater treatment plant shall be constructed with comprehensive odor control facilities, including the injection of odor control oxidants at the sewage lift station and construction of covered headworks with odor scrubber at the wastewater treatment plant.

FF. Spray drift from the wastewater treatment plant or spray disposal field shall not migrate out of the disposal field boundaries.

GG. Spray field irrigation shall cease when winds exceed 30 mph.

HH. The WWTP shall be staffed with operators who are qualified to operate the plant safely, effectively, and in compliance with all permit requirements and regulations. The operators shall have qualifications similar to those required by the State Water Resources Control Board Operator Certification Program for municipal wastewater treatment plants. This program specifies that for tertiary level wastewater treatment plants with design capacities of 1.0 MGD or less, the chief plant operator must be a Grade III operator. Supervisors and Shift Supervisors must be Grade II operators. An Operations and Maintenance Program must be followed by the plant operators. Emergency preparedness shall include all appropriate measures, including a high level of redundancy in the major systems.

The following mitigation measure is recommended for Alternative C only:

II. Prior to construction, the Tribe shall obtain a letter from the SJVAPCD confirming that the proposed use will not create an objectionable odor.

Adoption of the above mitigation will reduce the odor air quality impacts of the alternatives to a less than significant level.

TOXIC AIR CONTAMINANTS IMPACTS

To avoid/reduce potential adverse toxic air contaminant effects associated with this facility, the following measures are recommended for Alternatives A, B, C and D:

JJ. Air intakes associated with the heating and cooling system for buildings shall not be located next to potential TAC-emitting locations (e.g., loading docks) in accordance with CARB's Air Quality and Land Use Handbook.

Adoption of the above mitigation will reduce the toxic air contaminant air quality impacts of the alternatives to a less than significant level.

ASBESTOS IMPACTS

To avoid/reduce potential adverse effects associated with asbestos, the following measures are recommended for Alternative D:

KK. Prior to any grading activities at the site, the Tribe shall ensure that a geologic evaluation is conducted to determine if naturally occurring asbestos (NOA) is present within the construction

area. Should NOA or evidence of NOA be found on-site, the primary contractor shall be notified of and required to comply with construction standards equivalent to CARB's Asbestos Airborne Toxic Control Measure (ATCM) regulating serpentine and asbestos-bearing ultramafic rock materials used for surfacing applications subjected to vehicular, pedestrian, or non-pedestrian use, such as cycling and horse-back riding.

Adoption of the above mitigation will reduce the asbestos air quality impacts of Alternative D to a less than significant level.

INDOOR AIR QUALITY IMPACTS

The following mitigation measures are recommended for Alternatives A, B, and D:

- LL. The casino floor shall be ventilated to at least the standards of the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE), *Ventilation for Acceptable Indoor Air Quality*, ASHRAE Standard 62-2001.
- MM. The Tribe shall ensure that comfort levels are acceptable to most occupants, and consistent with ASHRAE Standard 55-1992, under all operating conditions.
- NN. The Tribe shall ensure that significant expected sources of pollutant emissions are isolated from occupants using physical barriers, exhausts, and pressure controls.
- OO. The Tribe shall ensure that outdoor air entering the building is protected from contamination from local outdoor sources and from building exhausts and sanitation vents.
- PP. The Tribe shall ensure that provisions are made for easy access to heating, ventilation, and air conditioning (HVAC) equipment requiring periodic maintenance.
- QQ. The Tribe shall ensure the use of low-emitting building products pursuant to Integrated Waste Management Board's Section 01350 where feasible.
- RR. The Tribe shall ensure that occupant exposure to construction contaminants is minimized using protocols for material selection, preventive installation procedures, and special ventilation and pressure control isolation techniques.
- SS. A non-smoking gaming area shall be provided.
- TT. Signage shall be displayed or brochures made available to casino patrons describing the health effects of second-hand smoke.
- UU. The Tribe shall provide notice of the health effects of secondhand smoke exposure to employees upon hire.

The following mitigation measure is recommended for Alternative C:

- VV. A non-smoking area shall be provided in restaurants.

WW. Signage shall be displayed or brochures made available to restaurant (that permit smoking) guests describing the health effects of second-hand smoke.

XX. The Tribe shall provide notice of the health effects of secondhand smoke exposure to employees upon hire.

YY. The Tribe shall ensure that significant expected sources of pollutant emissions are isolated from occupants using physical barriers, exhausts, and pressure controls.

ZZ. The Tribe shall ensure that outdoor air entering the building is protected from contamination from local outdoor sources and from building exhausts and sanitation vents.

AAA. The Tribe shall ensure that occupant exposure to construction contaminants is minimized using protocols for material selection, preventive installation procedures, and special ventilation and pressure control isolation techniques.

BBB. The Tribe shall ensure that provisions are made for easy access to HVAC equipment requiring periodic maintenance.

Adoption of the above mitigation will reduce the indoor air quality impacts of the alternatives to a less than significant level.

The following measure is recommended, but not required to reduce indoor air quality impacts to a less than significant level for Alternatives A, B, C, and D:

CCC. The Tribe shall seek LEED certification for project components, where possible.

CLIMATE CHANGE

As noted in **Table 5-1**, a less than significant cumulative impact to global climate change would result for all Alternatives after the implementation of Mitigation Measure CCC. In addition, the implementation of mitigation measures DDD through JJJ are recommended for all Alternatives to further reduce project climate change impacts.

DDD. Buses and other commercial diesel-fueled vehicles shall comply with the California Air Resource Board's (CARB) Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling (California Code of Regulations, Title 13, Division 3, Article 1, Chapter 10, Section 2485), which requires that the driver of any diesel bus shall not idle for more than five minutes at any location, except in the case of passenger boarding where a ten minute limit is imposed, or when passengers are onboard. Furthermore, the Tribe will provide a "Drivers Lounge" for bus and truck drivers to discourage idling.

EEE. The Tribe shall ensure the use of low-emitting building products pursuant to Integrated Waste Management Board's Section 01350 where feasible.

FFF. The Tribe shall ensure use of low-emission, central, or tankless water heaters and install wall insulation that shall exceed Title 24 requirements.

GGG. The Tribe shall use energy efficient appliances in the hotel and casino.

HHH. Environmentally preferable materials shall be used to the extent practical for construction of facilities.

III. Implementation of Mitigation Measures P, Q, U, and V

JJJ. The Tribe shall maintain all vehicles to manufacturers' specifications. This mitigation measure would reduce emission that occurs when vehicles are not maintained.

KKK. The Tribe shall ensure that the project will provide multiple and/or direct pedestrian access to adjacent, complementary land uses and throughout the project. This mitigation measure would encourage walking to destinations adjacent to the proposed project and thus, reducing vehicle trips.

TABLE 5-2
COMPLIANCE WITH STATE EMISSIONS REDUCTION STRATEGES

CAT Strategies and Early Action Measures	Project Design / Mitigation Measure Compliance
Diesel Anti-Idling: In July 2004, the CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling.	Development alternatives would be in compliance after implementation of Mitigation Measure CCC.
Achieve 50 percent statewide Recycling Goal: Achieving the State's 50 percent waste diversion mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. A diversion rate of 48 percent has been achieved on a statewide basis. Therefore, a 2 percent additional reduction is needed.	Solid waste services are expected to be provided by the City or County of Madera, which are subject to the state's recycling requirements. The development would not affect City or County diversion goals as waste from tribal land is classified as out-of-state waste and is not calculated in local waste diversion statistics. Thus, all development alternatives would be in compliance with this strategy.
Water Use Efficiency: Approximately 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce greenhouse gas emissions	As discussed in Section 2.0, the alternatives include substantial water conservation measures, including the extensive use of recycled water, thus complying with the strategy to use water efficiently.

Source: State of California, Environmental Protection Agency, and Climate Action Team, 2006

5.2.4 BIOLOGICAL RESOURCES

The following mitigation measures are recommended for Alternatives A, B, and C:

State Special-Status Species***Swainson's Hawk***

- A. The pre-construction survey shall be conducted within 30 days prior to initiation of construction activity, and cover all potential nesting trees. If active nests are found, consultation with USFWS shall occur. Appropriate measures shall be adopted similar to California Department of Fish & Game (CDFG) mitigation guidelines, regarding losses of suitable foraging habitat. Impacts within 10 miles of a Swainson's hawk nest site shall be mitigated by protecting or creating equally suitable foraging habitat elsewhere within the territory's 10-mile radius (CDFG 1994). The acreage of Habitat Management (HM) lands provided shall be derived from the 1994 CDFG staff report.

Projects within five miles of an active nest tree but greater than one mile from the nest tree shall provide 0.75 acres of HM land for each acre of urban development planned (0.75:1 ratio). All HM lands protected under this requirement shall be protected through fee title acquisition or conservation easement (acceptable to the CDFG) on agricultural lands or other suitable habitats that provide foraging habitat for Swainson's hawks. Management Authorization holders/project sponsors shall provide for the long-term management of the HM lands by funding a management endowment (the interest on which shall be used for managing the HM lands).

- B. Informal consultation with CDFG shall occur prior to construction activities to discuss potential on-site impacts to state special-status species.

Migratory and Nesting Birds

- C. If feasible, vegetation removal activities shall occur outside of the nesting season (approximately March through September) for migratory birds. If vegetation removal activities are to be conducted during the nesting season, a qualified biologist shall conduct a pre-construction survey for active migratory bird nests in and around proposed disturbance areas within one month prior to vegetation removal. If vegetation removal activities are delayed or suspended for more than one month after the pre-construction survey, the site shall be resurveyed. If a migratory bird nest is present, consultation with USFWS shall occur. A disturbance-free buffer of 250 feet shall be established around the nest and demarcated with fencing or flagging. No project-related construction activities, including vegetation removal, shall occur within the buffer zone until a qualified biologist determines the young have fledged and are independent of the nest.
- D. A pre-construction survey for Western burrowing owls shall be conducted to ensure that impacts to burrowing owls, if present, do not occur during the nesting season. The pre-construction survey shall be conducted within 30 days prior to initiation of construction activity. If active burrows are found prior to the nesting season, consultation with USFWS shall occur. If feasible,

passive relocation measures shall be provided for each burrow in the area of the Madera Site that is rendered biologically unsuitable. Passive relocation measures shall include the creation of two natural or artificial burrows for each burrow rendered biologically unsuitable. Daily monitoring will be implemented until the owls have been relocated to the new burrows. This measure will reduce potential impacts to burrowing owl species.

- E. The following measures shall be implemented to minimize the effects of lighting and glare:
- a. Install downcast lights with top and side shields to reduce upward and sideways illumination. This shall reduce potential disorientation affects from non-directed shine to birds and wildlife species.
 - b. Turn off as many exterior and interior lights as possible during the peak bird migration hours of midnight to dawn to reduce potential building collisions with migratory birds.

Waters of the U.S.

- F. Permanent fencing shall be installed around areas of wetlands and identified jurisdictional waters of the U.S., as shown on the U.S. Army Corps of Engineers (USACE) verified, waters of the U.S. map. Fencing shall be located no closer than a minimum of 50 feet from boundaries of waters of the U.S. Fencing shall be installed prior to any construction to protect water quality and shall remain in place after construction to maintain the wetlands and waters of the U.S.
- G. Construction staging areas shall be located at least 50 feet away from the wetlands and identified jurisdictional waters of the U.S. Temporary stockpiling of excavated or imported material shall occur only in approved construction staging areas. Excess excavated soil shall be used on site or disposed of at a regional landfill or other appropriate facility. Stockpiles that are to remain on the site through the wet season shall be protected to prevent erosion (e.g. seeding and silt fences or straw bales).

Aquatic Habitat

- H. To prevent impacts to aquatic habitat due to a change in water temperature, the water temperature of Dry Creek above its confluence with Schmidt Creek shall be monitored. Measures such as a cooling pond or cooling tower shall be used if necessary to decrease the temperature of the effluent to within five degrees Fahrenheit of the temperature of the creek. In accordance with the RWQCB Basin Plan, at no time shall the temperature of the receiving body of water be altered more than five degrees Fahrenheit.

Roosting Bats

- I. Within one month prior to tree removal, a qualified bat biologist shall conduct surveys to determine whether special-status bat species are roosting in the trees. If tree removal activities are delayed or suspended for more than one month after the pre-construction survey, the trees

shall be resurveyed. If special-status bat species are roosting in trees at the site, a qualified bat biologist will remove or relocate the bats.

The following mitigation measures are recommended for Alternative D:

Native Species

- J. Where appropriate, vegetation removed as a result of project activities shall be replaced with native species that are of value to local wildlife. Native plants have a significant cultural value, are generally more valuable as wildlife food sources, and require less irrigation, fertilizers, and pesticides than exotic species.

Mariposa Pussypaws

- K. Protocol-level plant surveys for the Mariposa pussypaws, the Federally-listed plant species identified in **Section 4.5** shall occur prior to development activities. Surveys shall be conducted within the blooming period for this species (April to August). If this species is not detected on site, no mitigation is necessary. However, if this species is detected and will be affected by the development of Alternative D, populations and/or individual plants of Mariposa pussypaws shall be flagged and a disturbance-free buffer of 50 feet surrounding each individual or population shall be established and demarcated with fencing or flagging. The project shall be redesigned to avoid all soil disturbance or other habitat impacts within the 50-foot buffer.

Valley Elderberry Longhorn Beetle

Suitable habitat for the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) occurs on the North Fork site in the form of elderberry (*Sambucus* sp.) shrubs. According to the elderberry survey conducted by AES biologists, Alternative D has the potential to impact 50 elderberry plants. The two elderberry shrubs at location eld7 shall be avoided. The following mitigation measures will reduce potential project impacts to less than significant impacts:

- L. Two of the elderberry plants on the North Fork site (location eld7) shall be avoided using the following measures.
 - a. If feasible, the elderberry shrubs shall be completely avoided using a 100-foot buffer. This buffer shall be fenced using standard construction fencing material. Signs shall be placed every 50 feet along the fencing with the following information:

“This area is habitat for the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment.”

These signs shall be clearly readable from a distance of 20 feet and shall be maintained for the duration of the construction activity.

- b. If it is necessary to disturb areas within the 100-foot avoidance buffers, USFWS shall be consulted before any disturbance is begun. In areas where encroachment on the 100-foot avoidance buffer has been approved by the USFWS, a buffer at least 20 feet from the dripline of the shrubs shall be maintained. Any habitat within the 100-foot buffer that was damaged during construction shall be restored once the construction activities have been completed. This includes erosion control and re-vegetation with appropriate native plants.
 - c. Once the construction of the Alternative D facilities have been completed, permanent measures shall be taken to protect the elderberry shrubs from adverse impacts from the project. These measures can include fencing, signs, weeding, and trash removal. Additionally, no mowing shall take place within five feet of the driplines of the elderberry shrubs.
- M. Alternative D will impact 50 of the elderberry shrubs on the North Fork site. The following mitigation measures will ensure that the impacts to elderberry shrubs are less than significant:
- a. All elderberry shrubs with at least one stem greater than one inch in diameter at ground level and are healthy enough to survive transplanting shall be transplanted to a USFWS-approved conservation area. The transplanting shall take place between November and January, when the shrubs will be dormant. Transplanting methods shall be in accordance with the USFWS' conservation guidelines (**Appendix H**). If it is not possible to transplant one or more of the elderberry shrubs, the USFWS may increase the minimization ratios shown in **Table 5-1** to mitigate for the loss of the shrub.
 - b. For each elderberry stem at least one inch in diameter at ground level that is impacted by Alternative D (e.g. pruned, damaged, or transplanted), additional elderberry seedlings or cuttings shall be planted in a USFWS-approved conservation area at the ratios given in **Table 5-2**. These ratios are based upon the ratios given in Table 1 of the USFWS VELB conservation guidelines (**Appendix E**). Additionally, for each elderberry stem at least one inch in diameter at ground level impacted by Alternative D, a variety of associated species native to the conservation area shall be interspersed with the elderberry seedlings. The number of individual plants (of the associated species) required to mitigate for the impacts to the elderberry shrubs is listed in **Table 5-2**.

As shown in **Table 5.2-2**, mitigation measures for impacts to VELB from Alternative D would require the transplanting of 50 elderberry shrubs from the North Fork site and the additional planting of 241

elderberry seedlings or cuttings in a USFWS-approved conservation area. The mitigation measures would also require the planting of 146 native plants of various species that are associated with elderberry shrubs.

TABLE 5-3
ELDERBERRY IMPACT MINIMIZATION RATIOS

No. of Stems	Riparian	Stem Size	Exit Holes	Mitigation Ratio	Elderberry Seedlings Required	Assoc. Native Plant Ratio	Assoc. Native Plants Required
37	No	1"-3"	No	1:1	37	1:1	37
7	No	1"-3"	Yes	2:1	14	2:1	14
2	No	3"-5"	No	2:1	4	1:1	2
19	Yes	1"-3"	No	2:1	38	1:1	19
37	Yes	1"-3"	Yes	4:1	148	2:1	74
Totals					241		146

SOURCE: AES 2006.

Migratory and Nesting Birds

- N. If feasible, vegetation removal shall occur outside of the nesting season (the nesting season is approximately March through September) for migratory birds. If vegetation removal activities are to be conducted during the nesting season, a pre-construction survey for active migratory bird nests in and around proposed disturbance areas shall be conducted by a qualified biologist within one month prior to vegetation removal. If vegetation removal activities are delayed or suspended for more than one month after the pre-construction survey, the site shall be resurveyed. If a migratory bird nest is present, a disturbance-free buffer of 250 feet shall be established around the nest and demarcated with fencing or flagging. This distance may be reduced, depending on the sensitivity of the species and nest location, in consultation with CDFG. No project-related construction activities, including vegetation removal, shall occur within the buffer zone until a qualified biologist determines the young have fledged and are independent of the nest.

Waters of the U.S.

- O. USACE verification of identified waters of the U.S shall be obtained and a Clean Water Act, Section 404 permit shall be obtained from USACE prior to any discharge of dredged or fill material into "waters of the U.S." The Tribe shall comply with all the terms and conditions of the permit and compensatory mitigation shall be in place prior to any direct effects to "waters of the U.S."
- P. A wetland mitigation plan to mitigate impacts to jurisdictional wetlands shall be developed as part of the USACE permit process. Wetland mitigation shall be accomplished through

creation/restoration of seasonal wetlands within an open space preserve subject to conservation easements. This creation/restoration shall provide an increase in the inventory of seasonal wetlands for the area. The scale of seasonal wetland restoration (ratio to be set by USACE when they issue their permit) shall be sufficient to satisfy the ratio of replacement acreage to impacted acreage required by regulatory agencies based on wetland functions and values present on the North Fork site. However, the proposed 2:1 ratio is subject to USACE mitigation guidelines. A detailed mitigation plan shall be designed that shall include monitoring and reporting requirements, responsibilities, performance success criteria, reporting procedures and contingency requirements.

- Q. A Clean Water Act NPDES permit shall be obtained from the USEPA prior to the discharge of tertiary-treated effluent into any of the drainages on the site. The Tribe shall comply with all the terms and conditions of the permit as mitigation for all impacts to downstream habitat and fish species.

Aquatic Habitat

- R. To prevent impacts to aquatic habitat due to a change in water temperature, the water temperature of Willow Creek above its confluence with the unnamed stream shall be monitored. Measures such as a cooling pond or cooling tower shall be used if necessary to decrease the temperature of the effluent to within five degrees Fahrenheit of the temperature of the creek. In accordance with the RWQCB Basin Plan, at no time shall the temperature of the receiving body of water be altered more than five degrees Fahrenheit.

Roosting Bats

- S. Within one month prior to tree removal or building demolition, a qualified bat biologist shall conduct surveys to determine whether special-status bat species are roosting in the trees or buildings. If tree removal or building demolition activities are delayed or suspended for more than one month after the pre-construction survey, the trees or buildings shall be resurveyed. If special-status bat species are roosting in trees or buildings at the site, a qualified bat biologist will remove or relocate the bats.

Adoption of the above mitigation will reduce the impacts of the alternatives on biological resources to a less than significant level.

5.2.5 CULTURAL AND PALEONTOLOGICAL RESOURCES

The following mitigation measures are recommended for Alternatives A, B, C and D:

- A. Any inadvertent discovery of archaeological resources, shall be subject to Section 106 of the National Historic Preservation Act as amended (36 CFR 800), the Native American Graves

Protection and Repatriation Act (25 USC 3001 et seq.), and the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa-mm). Specifically, procedures for post review discoveries without prior planning pursuant to 36 CFR 800.13 shall be followed.

All work within 50 feet of the find shall be halted until a professional archaeologist, can assess the significance of the find. If any find is determined to be significant by the archaeologist, then representatives of the Tribe, the NIGC and the BIA shall meet with the archaeologist, to determine the appropriate course of action, including the development of a Treatment Plan, if necessary. All significant cultural materials recovered shall be subject to scientific analysis, professional curation, and a report prepared by the professional archaeologist, according to current professional standards.

- B. If human remains are discovered during ground-disturbing activities on Tribal lands, work shall halt in the vicinity, the Madera County Coroner should be notified immediately, and, pursuant to the Native American Graves Protection and Repatriation Act (NAGPRA), Section 10.4 Inadvertent Discoveries, a Tribal Official and BIA representative will be contacted immediately. No further ground disturbances shall occur until the Tribal Official and BIA representative have examined the findings and agreed on the appropriate course of action.
- C. Monitoring of construction activities by a qualified paleontologist shall occur during any trenching or excavation associated with development under the Alternatives.
- D. Should paleontological resources be unearthed, a paleontological resource impact mitigation plan (PRIMP) shall be created prior to further earthmoving in the vicinity of the find. The PRIMP shall detail the procedures for collecting and preserving the discovered fossils. Any fossils discovered during construction shall be accessioned in an accredited scientific institution for future study.

The following mitigation measure is recommended for Alternative D:

- E. Temporary protective construction fencing shall be placed around site P-20-2358, including a 5 foot buffer, to prevent damage to the resource from slope stabilization activities. If the site can not be avoided during construction, a professional archaeologist will consult with the Tribe and the BIA to determine the appropriate action.

Adoption of the above mitigation will reduce the impacts of the alternatives on cultural and paleontological resources to a less than significant level.

5.2.6 SOCIOECONOMIC CONDITIONS

The following mitigation measures are recommended for Alternatives A, B, C, and D:

- A. The Tribe shall pay the fair-share cost of traffic mitigation, including the cost of any required land acquisition.

The following mitigation measures are recommended for Alternatives A, B, and D:

- B. The Tribe shall contract with a gambling treatment professional to train management and staff to develop strategies for recognizing and addressing customers whose gambling behavior may strongly suggest they are experiencing serious to severe difficulties.
- C. The Tribe shall refuse service to any customer whose gambling behavior convincingly exhibits indications of problem or pathological gambling.
- D. The Tribe shall respectfully and confidentially provide the customer (as described above) with written information that includes a list of professional gambling treatment programs and self-help groups.
- E. The Tribe shall implement procedures to allow for voluntary self-exclusion, enabling gamblers to ban themselves from a gambling establishment for a specified period of time.
- F. The Tribe shall prominently display (including on any automatic teller machines (ATMs) located on-site) materials describing the risk and signs of problem and pathological gambling behaviors. Materials shall also be prominently displayed (including on any ATMs located on-site) that provide available programs for those seeking treatment for problem and pathological gambling disorders, including, but not limited to a toll-free hotline telephone number.
- G. The Tribe shall offer insurance coverage for problem/pathological gambling treatment programs to its casino employees.

The following mitigation measure is recommended for Alternative A:

- H. The Tribe shall reimburse Madera County in the following amounts: \$835,110 (one-time, prior to the opening of the Alternative A developments to the public) and \$1,038,310 (annually) for fiscal impacts.

The following mitigation measures are recommended for Alternative B:

- I. The Tribe shall reimburse Madera County in the following amounts: \$1,988,560 (one-time, prior to the opening of the Alternative B developments to the public) and \$2,089,317 (annually) for fiscal impacts.
- J. The Tribe shall reimburse the City of Madera for \$110,656 annually for fiscal impacts.

The following mitigation measures are recommended for Alternative C:

- K. The Tribe shall reimburse Madera County in the following amounts: \$2,083,251 (one-time, prior to the opening of the Alternative C developments to the public) and \$1,470,885 (annually) for fiscal impacts.
- L. The Tribe shall reimburse the City of Madera for \$40,095 annually for fiscal impacts.

The following mitigation measures are recommended for Alternative D:

- M. The Tribe shall reimburse Madera County in the following amounts: \$756,298 (one-time, prior to the opening of the Alternative D developments to the public) and \$2,436,264 (annually) for fiscal impacts.
- N. The Tribe shall reimburse the City of Madera for \$4,834 annually for fiscal impacts.

Adoption of the above mitigation will reduce the impacts of the alternatives on socioeconomic resources to a less than significant level.

The following mitigation measures are recommended for Alternatives B and C:

- O. The Tribe shall reimburse the MID in the amount of \$6,800 (annually) for fiscal impacts.
- P. The Tribe shall implement groundwater mitigation measures discussed in **Section 5.2.2**.

Adoption of the above mitigation measure will further reduce less than significant fiscal impacts to the MID and neighboring well owners.

The following mitigation measure is recommended for Alternative D:

- Q. The Tribe shall implement groundwater mitigation measures discussed in **Section 5.2.2**.

Adoption of the above mitigation measure will reduce the potentially significant impact of Alternative D groundwater pumping on neighboring well owners to a less than significant level.

5.2.7 RESOURCE USE PATTERNS

TRANSPORTATION

Signal Warrants

Traffic signals may be justified when traffic operations fall below acceptable thresholds and when one or more signal warrants are satisfied. Traffic volumes at the unsignalized study intersections were compared against the peak hour warrant in the Caltrans Traffic Manual. Traffic Signal Warrant #3 – Peak Hour Volume Warrant is satisfied when traffic volumes on the major and minor approaches exceed thresholds for one hour of the day. This warrant is generally the first warrant to be satisfied. The warrant applies to traffic conditions during a one-hour peak that are sufficiently high such that minor street traffic experiences excessive delay in entering and crossing the street.

IMPROVEMENTS

Roadway segment and intersection improvements recommended under each alternative are listed chronologically below. Mitigation measures for each roadway segment and intersection are identified in the year of need. Measures identified in 2008 are considered in place for the cumulative plus project (any build alternative) scenario. If additional measures are needed to mitigate cumulative year impacts, mitigation measures are recommended and indicated as being needed in 2030. Post mitigation Level of Service (LOS) and volume information is contained in **Tables 5-4, 5-5, 5-6, and 5-7**.

Where roadway segments and intersections are shown as having an unacceptable LOS with the addition of traffic from the project alternatives (and caused at least in part from project traffic) the Tribe shall pay for a proportionate share of costs for the recommended mitigation. The proportionate share percentage is calculated using the following formula: $\text{Proportionate Share Percentage} = \frac{\text{Project Trips}}{(2030 \text{ Project Volume} - \text{Existing Volume})}$. Proportionate share percentages are listed in **Appendix M** (see Table 19). Alternatively, proportionate share percentages may be calculated through an established traffic impact fee program.

The Tribe shall make funding for implementation of the recommended near term (2010) road improvements available within one week of initiation of project construction. Funds shall be placed in an escrow account for use by the governmental entity with jurisdiction over the road to be improved so that the entity may design (funding shall be for design standards consistent with those required for similar facilities in the region, unless a deviation is approved by the entity with jurisdiction), obtain approvals/permits for, and construct the recommended road improvement (note that the entity may request that the Tribe directly perform some of these tasks). In some cases, the governmental entity may feel that an improvement slightly differing from that recommended may better facilitate traffic flow while still mitigating the alternative's impact. In this case, the terms of the escrow account shall allow use of the funds provided by the Tribe to implement the improvement even though the improvement differs slightly from that recommended by the traffic impact study.

Mitigation measures recommended in 2010 and 2030 are presented in graphic format for each alternative. **Figures 5-1 through 5-7** display Alternatives A through D measures for 2010, while **Figures 5-8 through 5-14** display Alternatives A through D measures for 2030.

TABLE 5-4
MITIGATED INTERSECTION AND ROAD SEGMENT PERFORMANCE – ALTERNATIVE A

	Existing		2010 No Project		2010 Project		Mitigated 2010 Project		2030 No Project		2030 Project		Mitigated 2030 Project	
County Segment	LOS AM/PM		LOS AM/PM		LOS AM/PM		LOS AM/PM		LOS AM/PM		LOS AM/PM		LOS AM/PM	
Avenue 18 ½ – Road 24 to Road 23	A/A		A/A		A/A		A/A		A/B		A/B		A/B	
Road 23 – Avenue 18 ½ to Avenue 17	A/A		B/B		B/B		B/B		D/D		D/D		D/D	
Avenue 17 – Road 23 to SR 99	A/A		A/A		A/D		A/D		F/F		F/F		A/C	
Avenue 17 – SR 99 to Road 27	A/A		B/E		C/F		A/B		E/F		F/F		A/B	
Golden State Blvd – Avenue 17 to Road 23	A/A		A/A		A/A		A/A		A/A		A/D		A/D	
Freeway Segment	LOS AM/PM	Density (pc/mi/ln) AM/PM	LOS AM/PM	Density (pc/mi/ln) AM/PM	LOS AM/PM	Density (pc/mi/ln) AM/PM	LOS AM/PM	Density (pc/mi/ln) AM/PM	LOS AM/PM	Density (pc/mi/ln) AM/PM	LOS AM/PM	Density (pc/mi/ln) AM/PM	LOS AM/PM	Density (pc/mi/ln) AM/PM
SR 99 north of Avenue 18 ½														
• NB	C/C	22.6/22.1	C/C	23.9/24.2	C/C	24.3/25.2	C/C	24.3/25.2	D/D	26.5/33.2	D/D	26.6/33.6	C/C	19.3/22.7
• SB	C/D	18.4/28.1	C/D	19.6/31.1	C/D	20.0/32.5	B/C	13.3/19.7	C/E	23.9/41.4	C/E	24.1/42.2	B/C	17.8/25.7
SR 99 between Avenue 18 ½ and Avenue 17														
• NB	C/C	23.6/23.0	C/C	24.9/25.5	C/D	25.3/27.0	B/B	16.5/17.4	D/D	26.4/31.4	D/D	26.4/31.4	C/C	19.2/21.7
• SB	C/D	19.1/29.7	C/D	20.4/33.6	C/E	21.0/36.1	B/C	14.0/20.8	C/E	23.5/40.5	C/E	23.5/40.5	B/C	17.5/25.2
SR 99 south of Avenue 17														
• NB	C/C	25.1/24.5	D/D	28.7/31.0	D/E	31.5/38.7	C/C	19.3/21.6	E/F	39.0/---	E/F	42.6/---	C/E	25.9/41.8
• SB	C/D	20.2/32.4	C/E	22.8/44.4	C/F	24.7/---	B/C	16.2/25.8	D/F	29.2/---	D/F	30.1/---	C/F	21.1/---
Intersection	LOS AM/PM	Delay ¹ AM/PM (secs)	LOS AM/PM	Delay ¹ AM/PM (secs)	LOS AM/PM	Delay ¹ AM/PM (secs)	LOS AM/PM	Delay ¹ AM/PM (secs)	LOS AM/PM	Delay ¹ AM/PM (secs)	LOS AM/PM	Delay ¹ AM/PM (secs)	LOS AM/PM	Delay ¹ AM/PM (secs)
Avenue 18 ½ at SR 99 NB ramps							B/B	13.4/13.4			B/B	14.7/13.2	B/B	13.5/12.8
• EB Left	A/A	8.2/7.9	A/A	6.4/5.6	A/A	8.4/8.1			A/B	7.5/10.1				
• NB Approach	C/B	16.3/14.8	C/C	21.3/21.4	C/D	22.7/26.4			F/F	337.7/523.8				
Avenue 18 ½ at SR 99 SB ramps/Road 23							A/B	9.1/11.3			B/E	17.8/58.6	A/B	9.6/14.2
• WB Left-Through	A/A	0.6/1.2	A/A	0.8/1.5	A/A	0.8/1.4								
• NB Approach	B/C	13.9/17.2	C/E	18.5/36.5	C/F	20.8/33.1								
• SB Approach	B/C	13.5/17.2	C/D	16.5/28.5	C/E	17.2/36.5			F/F	52.0/332.3				
Avenue 18 ½ at Pistachio Drive														
• EB Left-Through	A/A	0.0/0.4	A/A	0.0/0.4	A/A	0.0/0.4	A/A	0.0/0.4	A/A	0.7/2.2	A/A	0.7/2.5	A/A	0.7/2.6
• SB Approach	B/B	12.7/13.8	B/C	14.3/17.3	B/C	15.0/20.3	B/C	15.0/20.3	C/F	24.8/187.5	D/F	27.8/309.6	B/C	14.2/17.9
Avenue 18 ½ at Golden State Boulevard													B/B	12.6/17.4
• EB Left-Through	A/A	0.4/0.1	A/A	0.3/0.1	A/A	0.3/0.1	A/A	0.3/0.1						

5.0 Mitigation Measures

• SB Approach	B/B	10.9/1 0.9	B/B	11.8/1 2.2	B/B	12.1/1 2.9	B/B	12.1/ 12.9						
• EB Left-Through-Right									A/A	1.0/0.9	A/A	1.0/0. 9		
• WB Left-Through									A/A	6.6/7.5	A/A	6.9/7. 9		
• NB Approach									C/F	19.2/13 7.3	C/F	23.7/ 360.3		
• SB Approach									F/F	429.1/9 379.8	F/F	685.3 /---		
Avenue 18 at Road 23													A/A	5.1/7.4
• NB Left-Through-Right	A/A	0.1/0. 5	A/A	0.1/0.2	A/A	0.1/0.2	A/A	0.1/0. 2	A/A	0.0/0.2	A/A	0.0/0. 2		
• SB Left-Through-Right	A/A	0.4/0. 6	A/A	1.4/1.4	A/A	1.7/1.7	A/A	1.7/1. 7	A/A	0.8/1.0	A/A	2.3/2. 7		
• WB Approach	A/A	9.4/9. 8	A/B	9.7/10. 2	A/B	9.6/10. 1	A/B	9.6/1 0.1	B/C	14.5/17 .9	C/C	15.3/ 21.2		
• EB Approach	A/B	9.9/10 .1	B/B	10.7/1 1.9	B/B	10.8/1 2.1	B/B	10.8/ 12.1	C/C	16.4/24 .8	C/D	18.8/ 31.5		
Avenue 17 at SR 99 NB ramps							B/B	13.0/ 18.1			E/F	75.1/ 268.4	C/F	22.2/96.0
• EB Left	A/A	9.0/8. 0	B/B	10.0/1 0.2	B/B	11.0/1 3.9			D/F	27.7/61 7.2				
• NB Approach	B/B	11.9/1 3.3	F/F	114.6/ 371.0	F/F	6015.5 /4113. 0			F/F	6790.7/ ---				
• Avenue 17 at SR 99 SB off-ramp							A/A	2.7/5. 5			C/F	24.4/ 336.6	A/B	5.1/13.6
• SB Approach	B/B	10.2/1 1.1	C/F	16.6/1 74.5	E/F	37.6/6 974.5			F/F	7445.5/ ---				
Avenue 17 at Golden State Boulevard							B/C	18.8/ 21.5			E/F	65.1/ 416.9	C/F	23.3/133. 2
• EB Left	A/A	0.0/0. 0	A/A	8.2/8.7	A/B	9.2/10. 7			B/D	12.5/29 .4				
• WB Left	A/A	7.6/7. 5	A/A	8.5/8.9	A/B	9.2/10. 8			F/F	71.5/27 5.4				
• NB Approach	A/A	9.7/9. 3	C/ D	22.2/3 2.4	F/F	250.4/ ---			F/F	---/---				
• SB Approach	B/B	12.2/1 1.9	F/F	113.9/- --	F/F	---/---			F/F	---/---				
Avenue 17 at Road 23							A/A	7.6/9. 7			E/F	58.6/ 256.4	B/B	13.3/16.4
• NB Left-Through-Right	A/A	0.1/0. 4	A/A	0.7/1.4	A/A	0.7/1.7			A/A	3.2/3.3				
• SB Left-Through-Right	A/A	1.1/0. 7	A/A	0.7/0.6	A/A	0.7/0.6			A/A	0.8/0.3				
• WB Approach	B/B	10.5/1 0.6	B/C	13.9/1 8.9	C/E	15.5/3 9.0			F/F	---/---				
• EB Approach	B/B	10.3/1 0.4	B/B	12.3/1 4.9	B/C	13.1/1 9.2			F/F	---/---				
Ellis Street at Road 26	A/A	4.8/5. 5	A/A	6.6/9.5	A/B	7.6/13. 3	A/B	7.6/1 3.3	B/C	10.1/22 .2	A/B	9.9/1 9.8	A/B	9.9/19.8
Gateway/Avenue 16 at SR 99 NB ramps														
• SB Approach	B/B	10.3/1 1.0	B/B	10.6/1 1.4	B/B	10.7/1 1.5	B/B	10.7/ 11.5						
Avenue 16/Avenue 16 connector at SR 99 NB ramps														
• EB Left	A/B	9.7/10 .6	B/B	10.1/1 1.4	B/B	10.3/1 1.9	B/B	10.3/ 11.9						
Avenue 16 at SR 99 NB ramp connector														
• EB Left-Through	A/A	4.7/4. 8	A/A	5.0/5.4	A/A	5.2/5.8	A/A	5.2/5. 8						
• SB Approach	A/A	9.0/9. 6	A/A	9.1/9.9	A/A	9.2/9.9	A/A	9.2/9. 9						
Avenue 16/Ellis Overcrossing at SR 99 NB ramps									B/B	11.7/13 .9	B/B	11.7/ 13.8	B/B	11.7/13.8
Avenue 16 at SR 99 SB ramps			A/A	9.3/10. 0	A/B	9.2/10. 1	A/B	9.2/1 0.1	A/B	7.3/10. 6	A/B	7.4/1 0.9	A/B	7.4/10.9
• EB Left	A/A	7.7/7. 9												
• SB Approach	B/B	11.0/1 3.0												
Avenue 16 at Schnoor Avenue/Golden State	A/B	8.4/10 .9												

5.0 Mitigation Measures

Avenue 16/Ellis Overcrossing at Aviation Drive			B/C	18.1/2 1.2	B/C	18.5/2 5.9	B/C	18.5/ 25.9	F/F	115.7/3 99.6	F/F	126.3 /415. 2	C/D	22.7/53.8
Cleveland Avenue/Avenue 15 ½ at SR 99 NB ramps	B/B	12.1/1 5.1	B/C	14.3/2 2.7	B/D	14.9/3 6.4	B/C	12.1/ 24.4	C/F	26.8/19 9.2	B/F	16.8/ 93.9	B/C	12.5/29.2
Cleveland Avenue/Avenue 15 ½ at SR 99 SB ramps	B/B	14.2/1 2.2	B/B	15.2/1 4.2	B/B	15.4/1 8.6	B/B	10.1/ 14.0	C/F	31.4/13 3.0	C/E	27.5/ 80.3	B/C	18.3/27.9
Avenue 15 ½ at Road 23													A/A	5.4/7.4
• NB Left-Through-Right	A/A	0.0/0. 0	A/A	0.0/0.0	A/A	0.0/0.0	A/A	0.0/0. 0	A/A	0.0/0.0	A/A	0.0/0. 0		
• SB Left-Through-Right	A/A	1.0/1. 7	A/A	1.0/1.8	A/A	1.1/2.0	A/A	1.1/2. 0	A/A	1.1/1.7	A/A	1.1/1. 7		
• WB Approach	B/B	10.1/1 0.7	B/B	10.8/1 2.0	B/B	11.0/1 2.7	B/B	11.0/ 12.7	C/D	16.9/34 .4	C/E	17.5/ 38.1		
• EB Approach	A/B	0.0/10 .2	A/B	0.0/11. 1	A/B	0.0/11. 6	A/B	0.0/1 1.6	A/C	0.0/19. 0	A/C	0.0/1 9.8		
SR 145/Madera Avenue at SR 99 NB ramps	A/B	9.1/13 .1	A/A	5.6/6.6	A/B	5.6/10. 7	A/A	6.4/7. 3	D/F	37.0/24 2.9	D/F	51.2/ 264.3	B/C	16.6/30.7
Olive Avenue/Avenue 14/SR 99 SB on-ramp at SR 145	C/C	22.1/3 1.2	C/ C	21.1/3 3.3	C/D	22.2/3 8.7	B/B	10.6/ 13.1	E/F	70.9/23 8.7	C/F	24.4/ 99.2	B/C	15.3/25.1
Olive Avenue/Avenue 14 at SR 99 SB off-ramp	B/B	10.6/1 1.0	B/B	13.1/1 4.1	B/B	13.9/1 7.0	B/B	11.1/ 10.4	C/F	29.7/16 3.2	B/C	16.2/ 24.4	B/B	12.7/16.6
Avenue 14 at Road 23	A/A	8.4/8. 4	A/A	8.8/9.3	A/A	9.0/9.8	A/A	9.0/9. 8	B/C	11.6/16 .6	B/C	11.8/ 17.8	A/A	7.0/6.9
Avenue 12/Golden State Boulevard at SR 99 SB ramps							B/B	14.1/ 13.1			C/C	21.7/ 24.1	C/B	20.6/17.8
• SB Left-Through	A/A	4.6/3. 4	A/A	6.1/3.7	A/A	6.1/3.7			A/A	9.1/7.5				
• WB Approach	C/C	15.3/1 6.8	E/D	43.3/3 0.0	F/E	50.7/4 4.3			F/F	9323.4/ 9051.8				
Avenue 12 at Golden State Boulevard	D/F	51.0/9 0.1	D/ D	54.0/5 2.0	D/E	54.3/5 8.4	D/D	39.8/ 41.2	F/F	205.2/3 28.4	E/F	75.6/ 155.1	C/D	34.4/39.5
Avenue 12 at SR 99 NB ramps			B/C	17.9/2 1.7	B/C	19.1/2 1.9	B/B	12.9/ 12.8	C/E	21.5/57 .9	C/E	22.9/ 63.8	B/B	16.5/18.0
• EB Left-Through	A/A	2.3/4. 1												
• NB Approach	F/F	119.1/ 182.2												

Source: TPG Consulting, 2008; AES, 2008

TABLE 5-5
MITIGATED INTERSECTION AND ROAD SEGMENT PERFORMANCE – ALTERNATIVE B

	Existing		2010 No Project		2010 Project		Mitigated 2010 Project		2030 No Project		2030 Project		Mitigated 2030 Project	
County Segment	LOS AM/PM		LOS AM/PM		LOS AM/PM		LOS AM/PM		LOS AM/PM		LOS AM/PM		LOS AM/PM	
Avenue 18 ½ – Road 24 to Road 23	A/A		A/A		A/A		A/A		A/B		A/B		A/B	
Road 23 – Avenue 18 ½ to Avenue 17	A/A		B/B		B/B		B/B		D/D		D/D		D/D	
Avenue 17 – Road 23 to SR 99	A/A		A/A		A/D		A/D		F/F		F/F		A/C	
Avenue 17 – SR 99 to Road 27	A/A		B/E		C/F		A/B		E/F		F/F		A/B	
Golden State Blvd – Avenue 17 to Road 23	A/A		A/A		A/A		A/A		A/A		A/C		A/C	
Freeway Segment	LOS AM/PM	Density (pc/mi/ln) AM/PM	LOS AM/PM	Density (pc/mi/ln) AM/PM	LOS AM/PM	Density (pc/mi/ln) AM/PM	LOS AM/PM	Density (pc/mi/ln) AM/PM	LOS AM/PM	Density (pc/mi/ln) AM/PM	LOS AM/PM	Density (pc/mi/ln) AM/PM	LOS AM/PM	Density (pc/mi/ln) AM/PM
SR 99 north of Avenue 18 ½														
• NB	C/C	22.6/ 22.1	C/C	23.9/2 4.2	C/C	24.2/25 .2	C/C	24.2/ 25.2	D/D	26.5/33 .2	D/D	26.6/3 4.3	C/C	19.4/23. 0

	Existing		2010 No Project		2010 Project		Mitigated 2010 Project		2030 No Project		2030 Project		Mitigated 2030 Project	
• SB	C/D	18.4/28.1	C/D	19.6/31.1	C/D	20.0/32.5	B/C	13.3/19.7	C/E	23.9/41.4	C/E	24.1/43.0	B/C	17.8/26.0
SR 99 between Avenue 18 ½ and Avenue 17														
• NB	C/C	23.6/23.0	C/C	24.9/25.5	C/D	25.3/27.0	B/B	16.5/17.4	D/D	26.4/31.4	D/D	26.5/32.5	C/C	19.3/22.2
• SB	C/D	19.1/29.7	C/D	20.4/33.6	C/E	21.0/36.1	B/C	14.0/20.8	C/E	23.5/40.5	C/E	23.7/42.1	B/C	17.6/25.7
SR 99 south of Avenue 17														
• NB	C/C	25.1/24.5	D/D	28.7/31.0	D/E	31.5/38.6	C/C	19.3/21.5	E/F	39.0/---	E/F	41.5/---	C/E	25.5/40.9
• SB	C/D	20.2/32.4	C/E	22.8/44.4	C/F	24.7/---	B/C	16.2/25.8	D/F	29.2/---	D/F	29.8/---	C/F	21.0/---
Intersection	LOS AM/PM	Delay ¹ AM/PM (secs)	LOS AM/PM	Delay ¹ AM/PM (secs)	LOS AM/PM	Delay ¹ AM/PM (secs)	LOS AM/PM	Delay ¹ AM/PM (secs)	LOS AM/PM	Delay ¹ AM/PM (secs)	LOS AM/PM	Delay ¹ AM/PM (secs)	LOS AM/PM	Delay ¹ AM/PM (secs)
Avenue 18 ½ at SR 99 NB ramps														
• EB Left	A/A	8.2/7.9	A/A	6.4/5.6	A/A	8.4/8.1			A/B	7.5/10.1				
• NB Approach	C/B	16.3/14.8	C/C	21.3/21.4	C/D	22.7/26.4			F/F	337.7/7523.8				
Avenue 18 ½ at SR 99 SB ramps/Road 23														
• WB Left-Through	A/A	0.6/1.2	A/A	0.8/1.5	A/A	0.8/1.4			A/B	8.9/11.3			B/D	17.3/54.9
• NB Approach	B/C	13.9/17.2	C/E	18.5/36.5	C/F	20.8/63.1								
• SB Approach	B/C	13.5/17.2	C/D	16.5/28.5	C/E	17.2/36.5			F/F	52.0/332.3				
Avenue 18 ½ at Pistachio Drive														
• EB Left-Through	A/A	0.0/0.4	A/A	0.0/0.4	A/A	0.0/0.4	A/A	0.0/0.4	A/A	0.7/2.2	A/A	0.7/2.6	A/A	0.7/2.5
• SB Approach	B/B	12.7/13.8	B/C	14.3/7.3	B/C	15.0/20.3	B/C	15.0/20.3	C/F	26.7/277.0	D/F	26.7/277.0	B/C	14.0/17.4
Avenue 18 ½ at Golden State Boulevard														
• EB Left-Through	A/A	0.4/0.1	A/A	0.3/0.1	A/A	0.3/0.1	A/A	0.3/0.1						
• SB Approach	B/B	10.9/10.9	B/B	11.8/2.2	B/B	12.1/12.9	B/B	12.1/12.9						
• EB Left-Through-Right									A/A	1.0/0.9	A/A	1.0/0.9		
• WB Left-Through-Right									A/A	6.6/7.5	A/A	7.3/8.7		
• NB Approach									C/F	19.2/137.3	D/F	31.1/---		
• SB Approach									F/F	429.1/9397.8	F/F	593.0/---		
Avenue 18 at Road 23														
• NB Left-Through-Right	A/A	0.1/0.5	A/A	0.1/0.2	A/A	0.1/0.2	A/A	0.1/0.2	A/A	0.0/0.2	A/A	0.0/0.2		
• SB Left-Through-Right	A/A	0.4/0.6	A/A	1.4/1.4	A/A	1.7/1.7	A/A	1.7/1.7	A/A	0.8/1.0	A/A	1.9/2.2		
• WB Approach	A/A	9.4/9.8	A/B	9.7/10.2	A/B	9.6/10.1	A/B	9.6/10.1	B/C	14.5/17.9	B/C	14.9/20.3		
• EB Approach	A/B	9.9/10.1	B/B	10.7/11.9	B/B	10.8/12.1	B/B	10.8/12.1	C/C	16.4/24.8	C/D	18.0/29.3		
Avenue 17 at SR 99 NB ramps														
							B/B	13.0/18.1			E/F	69.3/260.2	C/F	21.5/91.1

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	Existing		2010 No Project		2010 Project		Mitigated 2010 Project		2030 No Project		2030 Project		Mitigated 2030 Project	
• EB Left	A/A	9.0/8.0	B/B	10.0/10.2	B/B	11.0/13.9			D/F	27.7/617.2				
• NB Approach	B/B	11.9/13.3	F/F	114.6/371.0	F/F	6001.8/4093.9			F/F	6790.7/---				
Avenue 17 at SR 99 SB off-ramp							A/A	2.7/5.5			B/F	17.1/277.5	A/B	5.1/11.8
• SB Approach	B/B	10.2/11.1	C/F	16.6/174.5	E/F	37.6/6974.5			F/F	7445.5/---				
Avenue 17 at Golden State Boulevard							B/C	18.9/21.5			E/F	62.5/409.1	C/F	22.4/118.6
• EB Left	A/a	0.0/0.0	A/A	8.2/8.7	A/B	9.2/10.7			B/D	12.5/29.4				
• WB Left	A/A	7.6/7.5	A/A	8.5/8.9	A/B	9.2/10.8			F/F	71.5/275.4				
• NB Approach	A/A	9.7/9.3	C/D	22.2/32.4	F/F	250.4/---			F/F	---/---				
• SB Approach	B/B	12.2/11.9	F/F	113.9/---	F/F	---/---			F/F	---/---				
Avenue 17 at Road 23							A/A	7.4/9.5			E/F	56.3/248.6	B/B	13.2/16.0
• NB Left-Through-Right	A/A	0.1/0.4	A/A	0.7/1.4	A/A	0.7/1.7			A/A	3.2/3.3				
• SB Left-Through-Right	A/A	1.1/0.7	A/A	0.7/0.6	A/A	0.7/0.6			A/A	0.8/0.3				
• WB Approach	B/B	10.5/10.6	B/C	13.9/18.9	C/E	15.5/39.2			F/F	---/---				
• EB Approach	B/B	10.3/10.4	B/B	12.3/14.9	B/C	13.1/19.1			F/F	---/---				
Ellis Street at Road 26	A/A	4.8/5.5	A/A	6.6/9.5	A/B	7.6/13.2	A/B	7.6/13.2	B/C	10.1/22.2	A/B	9.9/19.7	A/B	9.9/19.7
Gateway/Avenue 16 at SR 99 NB ramps														
• SB Approach	B/B	10.3/11.0	B/B	10.6/11.4	B/B	10.7/11.5	B/B	10.7/11.5						
Avenue 16/Avenue 16 connector at SR 99 NB ramps														
• EB Left	A/B	9.7/10.6	B/B	10.1/11.4	B/B	10.3/11.9	B/B	10.3/11.9						
Avenue 16 at SR 99 NB ramp connector														
• EB Left-Through	A/A	4.7/4.8	A/A	5.0/5.4	A/A	5.2/5.9	A/A	5.2/5.9						
• SB Approach	A/A	9.0/9.6	A/A	9.1/9.9	A/A	9.2/9.9	A/A	9.2/9.9						
Avenue 16/Ellis Overcrossing at SR 99 NB ramps									B/B	11.7/13.9	B/B	11.7/13.9	B/B	11.7/13.9
Avenue 16 at SR 99 SB ramps			A/A	9.3/10.0	A/B	9.2/10.1	A/B	9.2/10.1	A/B	7.3/10.6	A/B	7.4/10.8	A/B	7.4/10.8
• EB Left	A/A	7.7/7.9												
• SB Approach	B/B	11.0/13.0												
Avenue 16 at Schnoor Avenue/Golden State	A/B	8.4/10.9	B/C	18.1/21.2	B/C	18.5/25.9	B/C	18.5/25.9						
Avenue 16/Ellis Overcrossing at Aviation Drive									F/F	115.7/399.6	F/F	123.5/409.2	C/D	22.4/52.4
Cleveland Avenue/Avenue 15 ½ at SR 99 NB ramps	B/B	12.1/15.1	B/C	14.3/22.7	B/D	14.9/36.8	B/C	12.1/24.9	C/F	26.8/199.2	B/F	16.9/91.7	B/C	12.4/28.9
Cleveland Avenue/Avenue 15 ½	B/B	14.2/12.2	B/B	15.2/14.2	B/B	15.4/18.6	B/B	10.1/14.1	C/F	31.4/133.0	C/E	27.0/78.2	B/C	18.2/27.2

	Existing		2010 No Project		2010 Project		Mitigated 2010 Project		2030 No Project		2030 Project		Mitigated 2030 Project	
at SR 99 SB ramps														
Avenue 15 ½ at Road 23													A/A	5.4/7.1
• NB Left-Through-Right	A/A	0.0/0.0	A/A	0.0/0.0	A/A	0.0/0.0	A/A	0.0/0.0	A/A	0.0/0.0	A/A	0.0/0.0	A/A	0.0/0.0
• SB Left-Through-Right	A/A	1.0/1.7	A/A	1.0/1.8	A/A	1.1/2.0	A/A	1.1/2.0	A/A	1.1/1.7	A/A	1.1/1.7		
• WB Approach	B/B	10.1/10.7	B/B	10.8/12.0	B/B	11.0/12.7	B/B	11.0/12.7	C/D	16.9/34.4	C/E	17.3/37.1		
• EB Approach	A/B	0.0/1.0	A/B	0.0/1.1	A/B	0.0/1.6	A/B	0.0/1.6	A/C	0.0/19.0	A/C	0.0/19.6		
SR 145/Madera Avenue at SR 99 NB ramps	A/B	9.1/13.1	A/A	5.6/6.6	A/B	5.6/10.2	A/A	6.3/7.6	D/F	37.0/242.9	D/F	48.5/257.0	B/C	15.2/23.3
Olive Avenue/Avenue 14/SR 99 SB on-ramp at SR 145	C/C	22.1/31.2	C/C	21.1/33.3	C/D	22.0/38.7	B/B	10.5/13.5	E/F	70.9/238.7	C/F	24.4/98.0	B/C	15.8/28.6
Olive Avenue/Avenue 14 at SR 99 SB off-ramp	B/B	10.6/11.0	B/B	13.1/14.1	B/B	13.9/17.0	B/B	11.2/12.1	C/F	29.7/163.2	B/C	16.2/24.3	B/B	12.7/19.0
Avenue 14 at Road 23	A/A	8.4/8.4	A/A	8.8/9.3	A/A	9.0/9.8	A/A	9.0/9.8	B/C	11.6/16.6	B/C	11.7/17.5	A/A	7.0/7.0
Avenue 12/Golden State Boulevard at SR 99 SB ramps							B/B	18.1/14.8			C/C	21.7/24.0	B/B	17.1/17.1
• SB Left-Through	A/A	4.6/3.4	A/A	6.1/3.7	A/A	6.1/3.7			A/A	9.1/7.5				
• WB Approach	C/C	15.3/16.8	E/D	43.3/30.0	F/E	50.7/44.3			F/F	9323.4/9051.8				
Avenue 12 at Golden State Boulevard	D/F	51.0/90.1	D/D	54.0/52.0	D/E	54.3/58.4	C/D	33.5/41.6	F/F	205.2/328.4	E/F	75.2/154.2	C/D	27.3/39.9
Avenue 12 at SR 99 NB ramps			B/C	17.9/21.7	B/C	19.1/21.9	B/B	12.9/13.8	C/E	21.5/57.9	C/E	22.8/22.8	B/B	11.5/15.0
• EB Left-Through	A/A	2.3/4.1												
• NB Approach	F/F	119.1/182.2												

Source: TPG Consulting, 2008; AES, 2008

TABLE 5-6
MITIGATED INTERSECTION AND ROAD SEGMENT PERFORMANCE – ALTERNATIVE C

	Existing		2010 No Project		2010 Project		Mitigated 2010 Project		2030 No Project		2030 Project		Mitigated 2030 Project	
County Segment	LOS AM/PM		LOS AM/PM		LOS AM/PM		LOS AM/PM		LOS AM/PM		LOS AM/PM		LOS AM/PM	
Avenue 18 ½ – Road 24 to Road 23	A/A		A/A		A/A		A/A		A/B		A/B		A/B	
Road 23 – Avenue 18 ½ to Avenue 17	A/A		B/B		B/B		B/B		D/D		D/E		A/A	
Avenue 17 – Road 23 to SR 99	A/A		A/A		A/D		A/D		F/F		F/F		A/C	
Avenue 17 – SR 99 to Road 27	A/A		B/E		C/F		A/B		E/F		F/F		A/B	
Golden State Blvd – Avenue 17 to Road 23	A/A		A/A		A/A		A/A		A/A		A/C		A/C	
Freeway Segment	LOS AM/PM	Density (pc/mi/ln) AM/PM	LOS AM/PM	Density (pc/mi/ln) AM/PM	LOS AM/PM	Density (pc/mi/ln) AM/PM	LOS AM/PM	Density (pc/mi/ln) AM/PM	LOS AM/PM	Density (pc/mi/ln) AM/PM	LOS AM/PM	Density (pc/mi/ln) AM/PM	LOS AM/PM	Density (pc/mi/ln) AM/PM
SR 99 north of														

5.0 Mitigation Measures

	Existing		2010 No Project		2010 Project		Mitigated 2010 Project		2030 No Project		2030 Project		Mitigated 2030 Project	
Avenue 18 ½														
• NB	C/ C	22.6/ 22.1	C/ C	23.9/2 4.2	C/C	24.2/25 .1	C/C	24.2/2 5.1	D/ D	26.5/3 3.2	D/D	26.6/3 4.3	C/C	19.4/23. 0
• SB	C/ D	18.4/ 28.1	C/ D	19.6/3 1.1	C/D	19.9/32 .5	B/C	13.3/1 9.7	C/ E	23.9/4 1.4	C/E	24.1/4 3.0	B/C	17.8/26. 0
SR 99 between Avenue 18 ½ and Avenue 17														
• NB	C/ C	23.6/ 23.0	C/ C	24.9/2 5.5	C/D	25.3/27 .0	B/B	16.5/1 7.4	D/ D	26.4/3 1.4	D/D	26.5/3 2.5	C/C	19.3/22. 2
• SB	C/ D	19.1/ 29.7	C/ D	20.4/3 3.6	C/E	21.0/36 .1	B/C	14.0/2 0.8	C/ E	23.5/4 0.5	C/E	23.7/4 0.6	B/C	17.6/25. 2
SR 99 south of Avenue 17														
• NB	C/ C	25.1/ 24.5	D/ D	28.7/3 1.0	D/E	31.6/38 .8	C/C	19.3/2 1.6	E/ F	39.0/-- -	E/F	41.2/-- --	C/E	25.4/41. 9
• SB	C/ D	20.2/ 32.4	C/E	22.8/4 4.4	C/F	24.8/--- -	B/C	16.2/2 5.9	D/ F	29.2/-- -	D/F	30.3/-- --	C/F	21.2/--- -
Intersection	LO S AM/ PM	Delay ¹ AM/PM (secs)	LOS AM/ PM	Delay ¹ AM/PM (secs)	LOS AM/ PM	Delay ¹ AM/PM (secs)	LOS AM/ PM	Delay ¹ AM/PM (secs)	LO S AM/ PM	Delay ¹ AM/PM (secs)	LOS AM/ PM	Delay ¹ AM/PM (secs)	LOS AM/ PM	Delay ¹ AM/PM (secs)
Avenue 18 ½ at SR 99 NB ramps							B/B	13.3/1 3.4			B/B	14.9/1 3.5	B/B	12.9/12. 8
• EB Left	A/ A	8.2/7. 9	A/A	6.4/5. 6	A/A	8.4/8.1			A/ B	7.5/10. 1				
• NB Approach	C/ B	16.3/1 4.8	C/ C	21.3/2 1.4	C/D	22.7/26 .4			F/ F	337.7/ 7523.8				
Avenue 18 ½ at SR 99 SB ramps/Road 23							A/B	8.9/11. 3			B/E	18.2/6 4.4	A/B	9.8/14.1
• WB Left-Through	A/ A	0.6/1. 2	A/A	0.8/1. 5	A/A	0.8/1.4								
• NB Approach	B/ C	13.9/1 7.2	C/E	18.5/3 6.5	C/F	20.8/60 .2								
• SB Approach	B/ C	13.5/1 7.2	C/ D	16.5/2 8.5	C/E	17.2/36 .3			F/ F	52.0/3 32.3				
Avenue 18 ½ at Pistachio Drive														
• EB Left-Through	A/ A	0.0/0. 4	A/A	0.0/0. 4	A/A	0.0/0.4	A/A	0.0/0.4	A/ A	0.7/2.3	A/A	0.7/2. 5	A/A	0.7/2.6
• SB Approach	B/ B	12.7/1 3.8	B/C	14.3/1 7.3	B/C	15.0/20 .2	B/C	15.0/2 0.2	C/ F	24.8/1 87.5	D/F	26.9/3 14.1	B/C	14.0/17. 9
Avenue 18 ½ at Golden State Boulevard													B/B	14.7/17. 4
• EB Left-Through	A/ A	0.4/0. 1	A/A	0.3/0. 1	A/A	0.3/0.1	A/A	0.3/0.1						
• SB Approach	B/ B	10.9/1 0.9	B/B	11.8/1 2.2	B/B	12.1/12 .9	B/B	12.1/1 2.9						
• EB Left-Through-Right									A/ A	1.0/0.9	A/A	1.0/0. 9		
• WB Left-Through-Right									A/ A	6.6/7.5	A/A	6.8/7. 9		
• NB Approach									C/ F	19.2/1 37.3	C/F	23.0/1 155.7		
• SB Approach									F/ F	429.1/ 9379.8	F/F	633.7/ ---		
Avenue 18 at Road 23													A/A	5.2/7.9
• NB Left-Through-Right	A/ A	0.1/0. 5	A/A	0.1/0. 2	A/A	0.1/0.2	A/A	0.1/0.2	A/ A	0.0/0.2	A/A	0.0/0. 2		
• SB Left-Through-Right	A/ A	0.4/0. 6	A/A	1.4/1. 4	A/A	1.7/1.6	A/A	1.7/1.6	A/ A	0.8/1.0	A/A	1.7/2. 7		
• WB Approach	A/ A	9.4/9. 8	A/B	9.7/10 .2	A/B	9.6/10. 1	A/B	9.6/10. 1	B/ C	14.5/1 7.9	B/C	14.7/2 2.0		
• EB Approach	A/ A	9.9/10	B/B	10.7/1	B/B	10.8/12	B/B	10.8/1	C/ C	16.4/2	C/D	17.8/3		

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	Existing		2010 No Project		2010 Project		Mitigated 2010 Project		2030 No Project		2030 Project		Mitigated 2030 Project	
	B	.1		1.9		.0		2.0	C	4.8		1.9		
Avenue 17 at SR 99 NB ramps							B/B	13.1/17.8			E/F	67.9/267.6	C/F	21.3/95.8
• EB Left	A/A	9.0/8.0	B/B	10.0/10.2	B/B	11.0/13.9			D/F	27.7/617.2				
• NB Approach	B/B	11.9/13.3	F/F	114.6/371.0	F/F	6029.1/4161.6			F/F	6790.7/---				
Avenue 17 at SR 99 SB off-ramp							A/A	2.7/5.6			C/F	20.1/341.9	A/B	5.1/14.4
• SB Approach	B/B	10.2/11.1	C/F	16.6/174.5	E/F	38.2/6994.7			F/F	7445.5/---				
Avenue 17 at Golden State Boulevard							B/C	18.9/21.6			E/F	70.3/417.6	C/F	24.0/140.6
• EB Left	A/A	0.0/0.0	A/A	8.2/8.7	A/B	9.2/10.8			B/D	12.5/29.4				
• WB Left	A/A	7.6/7.5	A/A	8.5/8.9	A/B	9.2/10.8			F/F	71.5/275.4				
• NB Approach	A/A	9.7/9.3	C/D	22.2/32.4	F/F	247.8/--			F/F	---/---				
• SB Approach	B/B	12.2/11.9	F/F	113.9/---	F/F	---/---			F/F	---/---				
Avenue 17 at Road 23							A/A	7.5/9.6			E/F	56.7/258.1	B/B	13.2/16.5
• NB Left-Through-Right	A/A	0.1/0.4	A/A	0.7/1.4	A/A	0.7/1.9			A/A	3.2/3.3				
• SB Left-Through-Right	A/A	1.1/0.7	A/A	0.7/0.6	A/A	0.7/0.6			A/A	0.8/0.3				
• WB Approach	B/B	10.5/10.6	B/C	13.9/18.9	C/E	15.4/35.8			F/F	---/---				
• EB Approach	B/B	10.3/10.4	B/B	12.3/14.9	B/C	13.1/19.6			F/F	---/---				
Ellis Street at Road 26	A/A	4.8/5.5	A/A	6.6/9.5	A/B	7.6/13.2	A/B	7.6/13.2	B/C	10.1/22.2	A/B	10.0/19.5	A/B	10.0/19.5
Gateway/Avenue 16 at SR 99 NB ramps														
• SB Approach	B/B	10.3/11.0	B/B	10.6/11.4	B/B	10.7/11.6	B/B	10.7/11.6						
Avenue 16/Avenue 16 connector at SR 99 NB ramps														
• EB Left	A/B	9.7/10.6	B/B	10.1/11.4	B/B	10.3/11.9	B/B	10.3/11.9						
Avenue 16 at SR 99 NB ramp connector														
• EB Left-Through	A/A	4.7/4.8	A/A	5.0/5.4	A/A	5.2/5.8	A/A	5.2/5.8						
• SB Approach	A/A	9.0/9.6	A/A	9.1/9.9	A/A	9.2/9.9	A/A	9.2/9.9						
Avenue 16/Ellis Overcrossing at SR 99 NB ramps									B/B	11.7/13.9	B/B	11.7/13.8	B/B	11.7/13.8
Avenue 16 at SR 99 SB ramps			A/A	9.3/10.0	A/B	9.2/10.2	A/B	9.2/10.2	A/B	7.3/10.6	A/B	7.4/10.9	A/B	7.4/10.9
• EB Left	A/A	7.7/7.9												
• SB Approach	B/B	11.0/13.0												
Avenue 16 at Schnoor Avenue/Golden State	A/B	8.4/10.9	B/C	18.1/21.2	B/C	18.5/26.0	B/C	18.5/26.0						
Avenue 16/Ellis Overcrossing at Aviation Drive									F/F	115.7/399.6	F/F	122.4/419.0	C/D	22.1/54.1
Cleveland Avenue/Avenue 15 ½ at SR 99 NB ramps	B/B	12.1/15.1	B/C	14.3/22.7	B/D	14.9/38.2	B/C	12.1/24.5	C/F	26.8/199.2	B/F	16.8/96.2	B/C	12.5/29.4
Cleveland	B/	14.2/1	B/B	15.2/1	B/B	15.4/18	B/B	10.1/1	C/	31.4/1	C/F	28.0/8	B/C	18.3/28.

5.0 Mitigation Measures

	Existing		2010 No Project		2010 Project		Mitigated 2010 Project		2030 No Project		2030 Project		Mitigated 2030 Project	
Avenue/Avenue 15 ½ at SR 99 SB ramps	B	2.2		4.2		.9		4.5	F	33.0		6.0		0
Avenue 15 ½ at Road 23													A/A	5.4/7.4
• NB Left-Through-Right	A/A	0.0/0.0	A/A	0.0/0.0	A/A	0.0/0.0	A/A	0.0/0.0	A/A	0.0/0.0	A/A	0.0/0.0	A/A	0.0/0.0
• SB Left-Through-Right	A/A	1.0/1.7	A/A	1.0/1.8	A/A	1.1/1.8	A/A	1.1/1.8	A/A	1.1/1.7	A/A	1.1/1.7		
• WB Approach	B/B	10.1/10.7	B/B	10.8/12.0	B/B	11.0/12.5	B/B	11.0/12.5	C/D	16.9/34.4	C/E	17.4/38.8		
• EB Approach	A/B	0.0/10.2	A/B	0.0/11.1	A/B	0.0/11.5	A/B	0.0/11.5	A/C	0.0/19.0	A/C	0.0/20.0		
SR 145/Madera Avenue at SR 99 NB ramps	A/B	9.1/13.1	A/A	5.6/6.6	A/B	5.6/10.1	A/A	6.3/7.1	D/F	37.0/242.9	D/F	47.6/262.6	B/C	15.1/25.6
Olive Avenue/Avenue 14/SR 99 SB on-ramp at SR 145	C/C	22.1/31.2	C/C	21.1/33.3	C/D	22.0/39.1	B/B	10.5/12.8	E/F	70.9/238.7	C/F	24.4/99.8	B/C	15.8/24.4
Olive Avenue/Avenue 14 at SR 99 SB off-ramp	B/B	10.6/11.0	B/B	13.11/4.1	B/B	13.9/16.5	B/B	11.2/12.1	C/F	29.7/163.2	B/C	16.2/24.5	B/B	12.8/17.7
Avenue 14 at Road 23	A/A	8.4/8.4	A/A	8.8/9.3	A/A	9.0/9.7	A/A	9.0/9.7	B/C	11.6/16.6	B/C	11.8/18.0	A/A	7.0/7.0
Avenue 12/Golden State Boulevard at SR 99 SB ramps							B/B	14.6/13.1			C/C	22.0/24.0	B/B	16.3/17.1
• SB Left-Through	A/A	4.6/3.4	A/A	6.1/3.7	A/A	6.1/3.7			A/A	9.1/7.5				
• WB Approach	C/C	15.3/16.8	E/D	43.3/30.0	F/E	50.7/47.9			F/F	9323.4/9051.8				
Avenue 12 at Golden State Boulevard	D/F	51.0/90.1	D/D	54.0/52.0	D/E	54.3/60.0	D/D	40.8/40.4	F/F	205.2/328.4	E/F	75.9/154.5	C/D	30.2/40.2
Avenue 12 at SR 99 NB ramps			B/C	17.9/21.7	B/C	19.1/21.9	B/B	13.0/12.9	C/E	21.5/57.9	C/E	23.3/66.3	B/B	10.4/15.2
• EB Left-Through	A/A	2.3/4.1												
• NB Approach	F/F	119.1/182.2												

Source: TPG Consulting, 2008; AES, 2008

TABLE 5-7
Mitigated Intersection and Road Segment Performance – Alternative D

Intersection	Existing		2010 No Project		2010 Project		2030 No Project		2030 Project		Mitigated 2030 Project	
	LOS AM/PM	Delay ¹ AM/PM (secs)	LOS AM/PM	Delay ¹ AM/PM (secs)	LOS AM/PM	Delay ¹ AM/PM (secs)	LOS AM/PM	Delay ¹ AM/PM (secs)	LOS AM/PM	Delay ¹ AM/PM (secs)	LOS AM/PM	Delay ¹ AM/PM (secs)
SR 145 at SR 41	B/C	14.0/21.6	B/C	15.4/22.8	B/C	15.4/22.9	C/D	39.6/40.6	C/D	29.6/40.7	C/D	29.6/40.7
SR 41 at Road 200	A/A	8.1/5.7	A/A	8.2/5.7	A/A	8.2/5.8	A/A	9.3/7.7	A/A	9.3/8.5	A/A	9.3/8.5
SR 41 at Road 420 (Thornberry Road)											A/A	6.1/6.5
• SB Left	A/A	8.7/8.9	A/A	8.8/9.0	A/A	8.8/9.0	A/B	9.7/10.2	A/B	9.7/10.2		
• WB Approach	B/B	12.9/14.3	B/B	13.3/14.9	B/B	13.3/14.9	C/D	20.2/27.5	C/D	20.2/27.5		
SR 41 at SR 49	A/B	9.9/11.9	B/B	10.0/12.1	B/B	10.1/12.1	B/B	11.4/14.7	B/B	11.1/14.7	B/B	11.1/14.7
Road 274 (Malum Ridge Rd) at Road 225 (Mammoth Pool Rd)	A/A	7.0/7.3	A/A	7.1/7.4	A/A	7.3/7.7	A/A	7.9/8.7	A/A	8.2/9.2	A/A	8.2/9.2
Road 225 (Mammoth Pool Rd) at Cascadel Road												
• SB Left	A/A	7.4/7.3	A/A	7.4/7.3	A/A	7.5/7.4	A/A	7.5/7.4	A/A	7.5/7.5	A/A	7.5/7.5
• WB Approach	A/A	8.6/8.6	A/A	8.7/8.7	A/A	8.7/8.8	A/A	9.1/9.7	A/A	9.3/9.6	A/A	9.3/9.6
Cascadel Road at Mission Drive												
• SB Left-Through	-/A	-/1.1	-/A	-/1.1	A/A	5.3/6.7	-/A	-/1.2	A/A	4.3/6.3	A/A	4.3/6.3
• WB Approach	A/A	8.6/8.6	A/A	8.7/8.6	A/A	8.8/8.9	A/A	8.8/8.8	A/A	8.9/9.1	A/A	8.9/9.1
North Fork Road at Auberry Road												
• EB Left-Through	-/-	-/-	A/A	0.2/0.2	A/A	0.1/1.0	A/A	1.1/1.2	A/A	1.6/1.6	A/A	1.6/1.6
• WB Left	A/A	7.4/7.5	A/A	7.4/7.5	A/A	7.5/7.5	A/A	7.6/7.6	A/A	7.6/7.6	A/A	7.6/7.6
• NB Approach	A/A	9.1/9.1	A/B	9.2/10.6	A/A	9.4/9.4	B/B	10.7/11.1	B/B	10.9/11.4	B/B	10.9/11.4
• SB Approach	B/A	10.1/8.8	A/A	9.9/9.8	A/A	9.7/9.7	B/B	12.2/13.1	B/B	12.5/13.4	B/B	12.5/13.4
North Fork Road at Crane Valley Road												
• EB Left-Through	A/A	1.3/2.6	A/A	1.3/2.7	A/A	1.3/2.6	A/A	1.7/3.3	A/A	1.6/3.3	A/A	1.6/3.3
• SB Approach	A/A	9.3/9.9	A/B	9.3/10.0	A/A	9.4/10.1	B/B	10.1/11.7	B/B	10.1/11.8	B/B	10.1/11.8

Source: TPG Consulting, 2008; AES, 2008

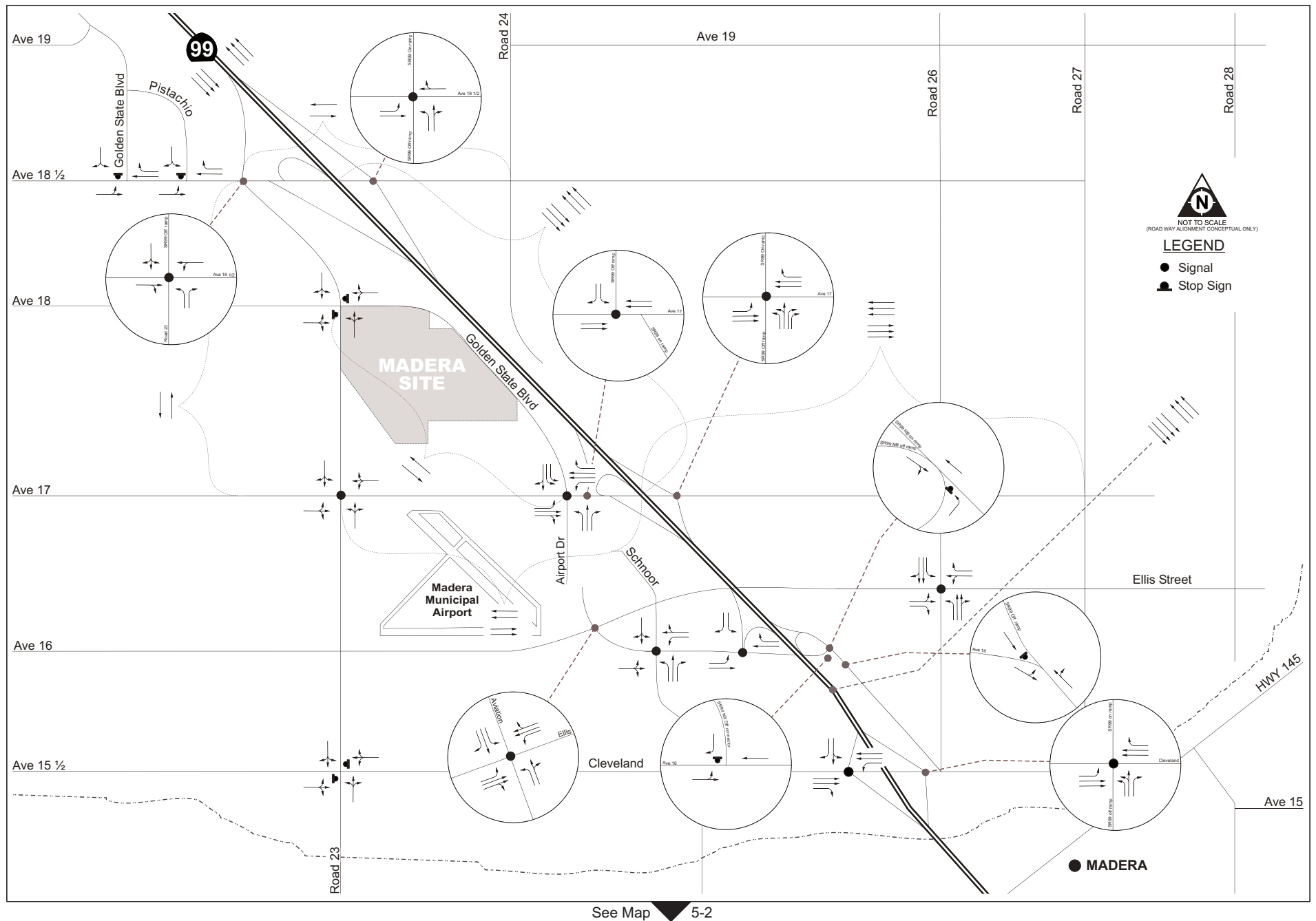


Figure 5-1
Madera Site – 2010 Lane Configuration and Intersection Control With Alternative A Mitigation

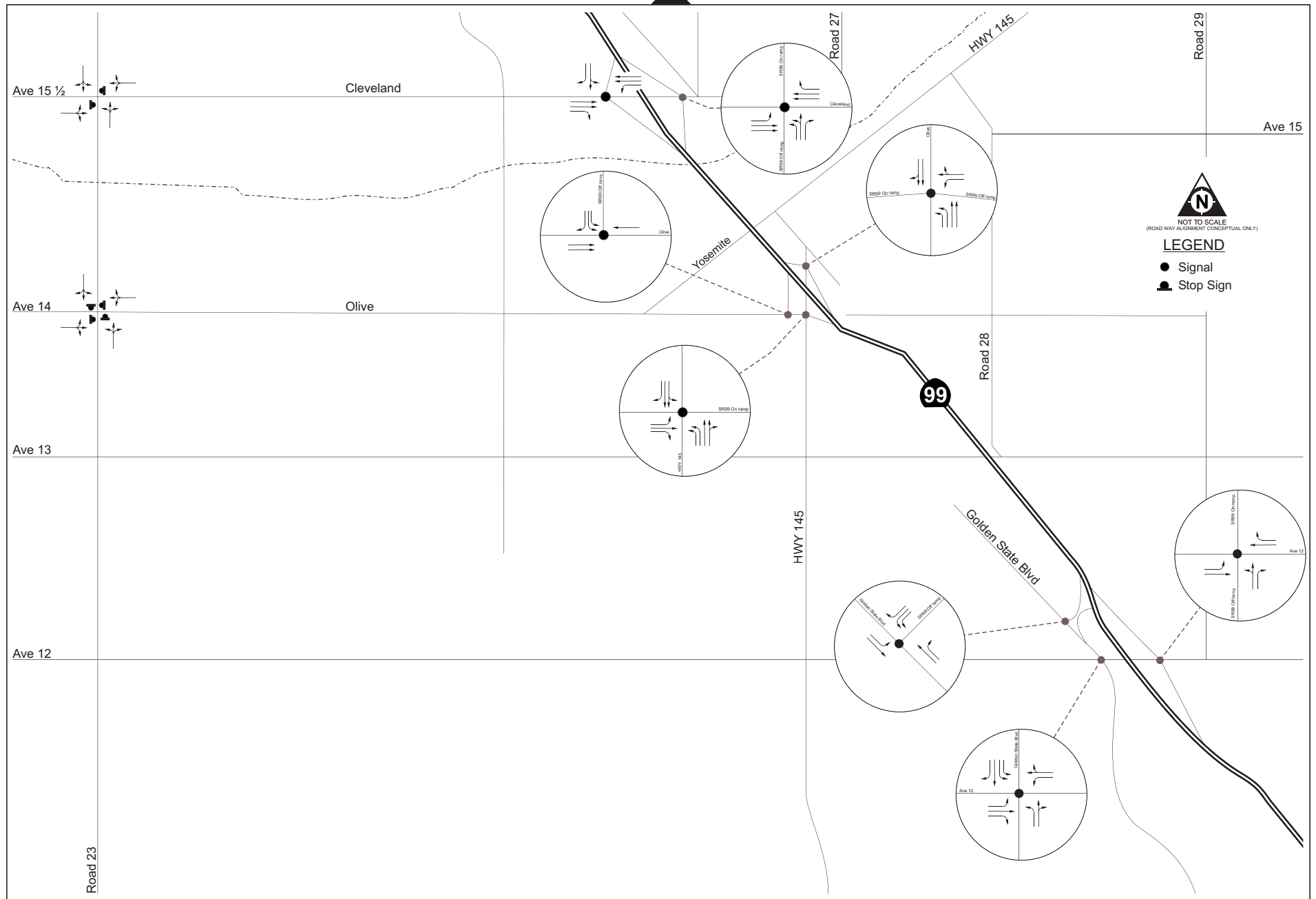


Figure 5-2
Madera Site – 2010 Lane Configuration and Intersection Control With Alternative A Mitigation

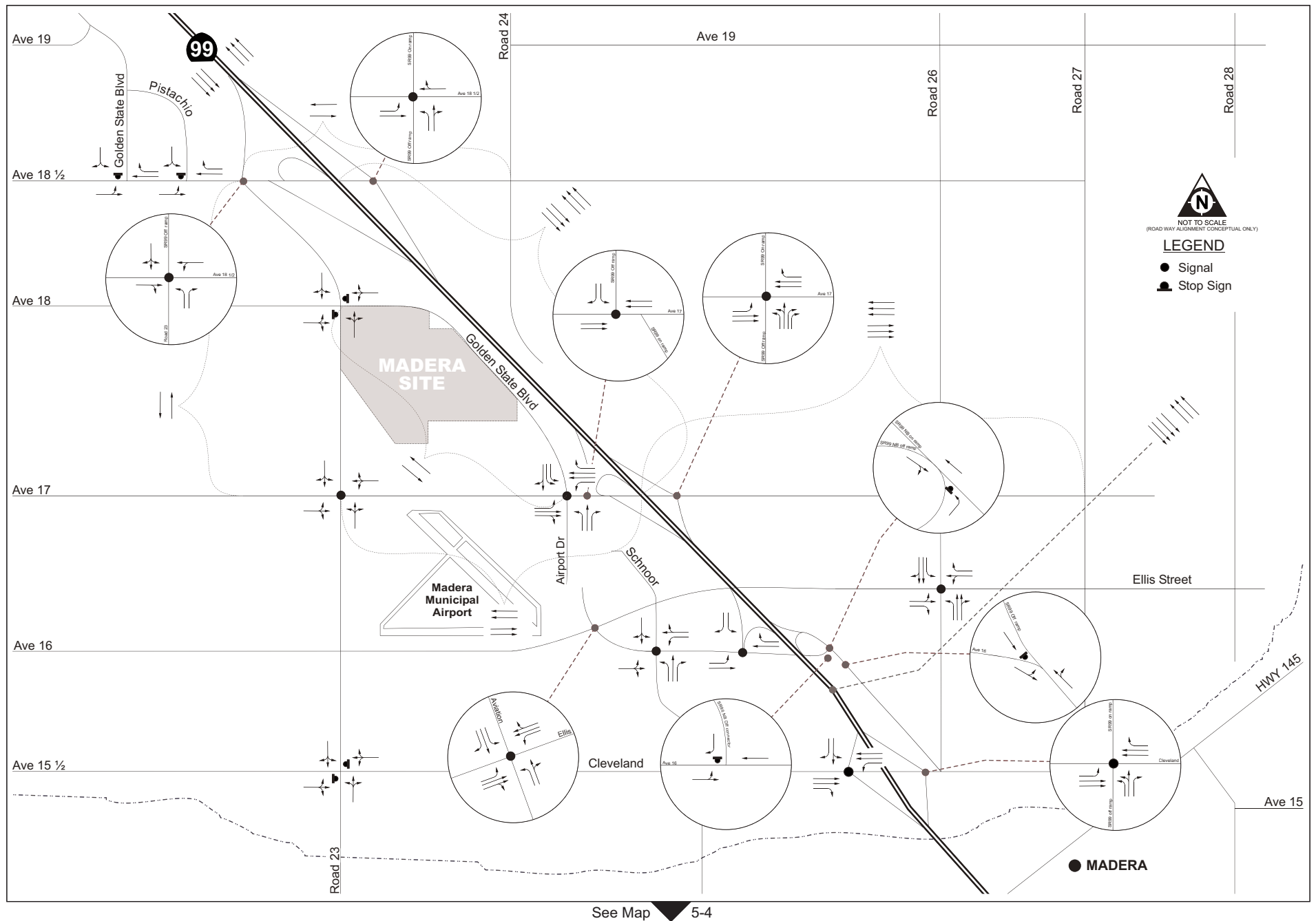


Figure 5-3
Madera Site – 2010 Lane Configuration and Intersection Control With Alternative B Mitigation

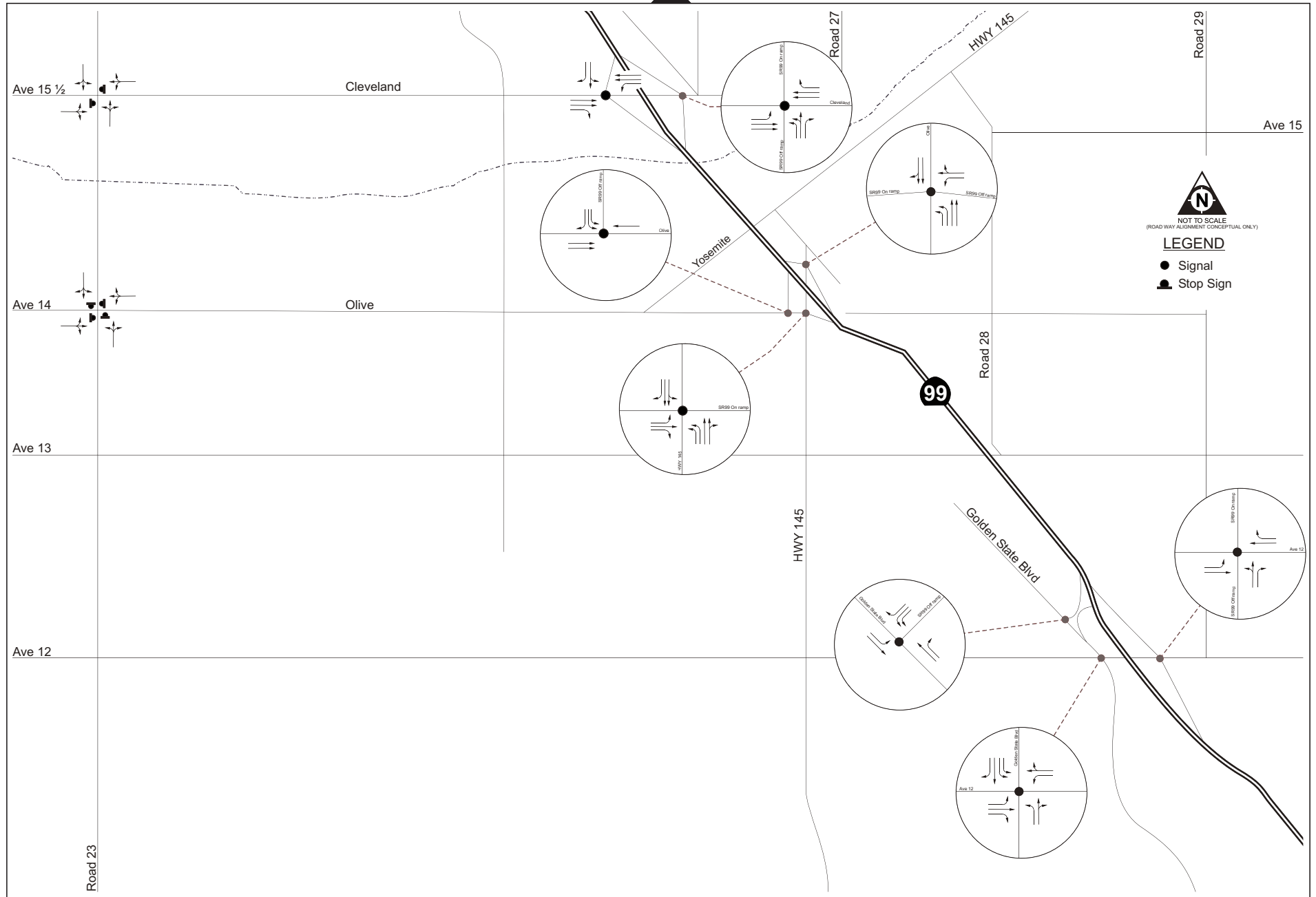


Figure 5-4
Madera Site – 2010 Lane Configuration and Intersection Control With Alternative B Mitigation

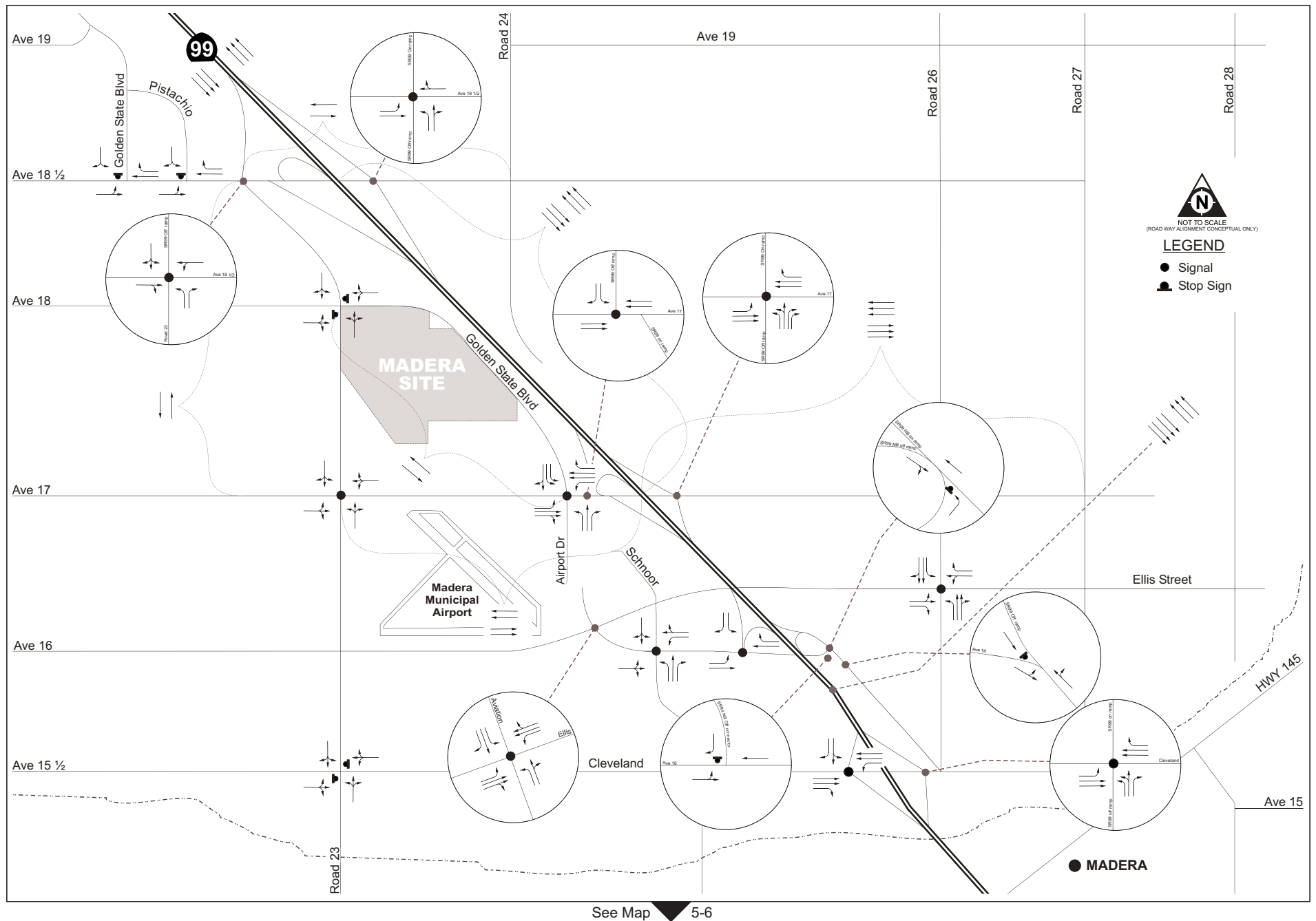


Figure 5-5
Madera Site – 2010 Lane Configuration and Intersection Control With Alternative C Mitigation

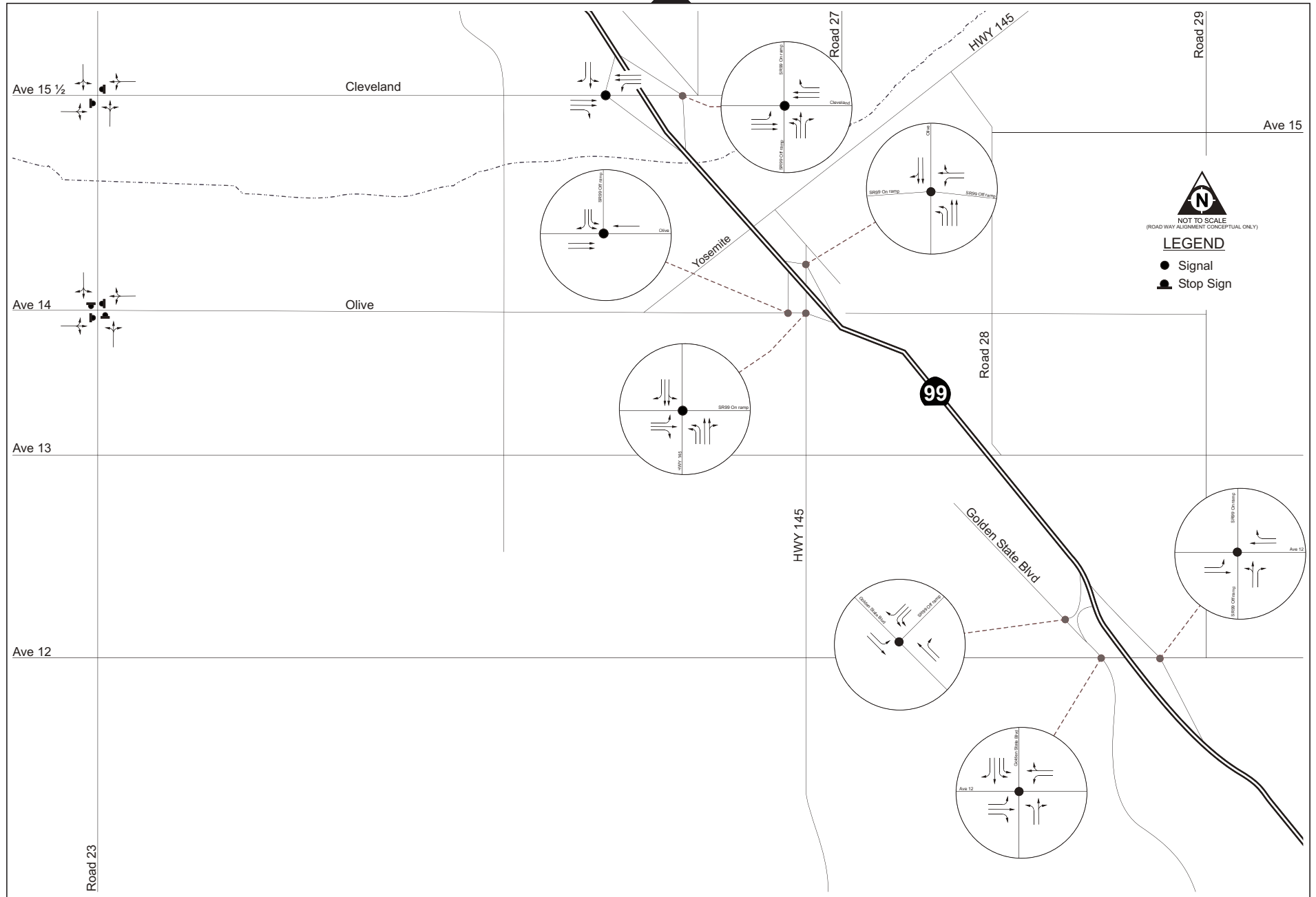


Figure 5-6
Madera Site – 2010 Lane Configuration and Intersection Control With Alternative C Mitigation

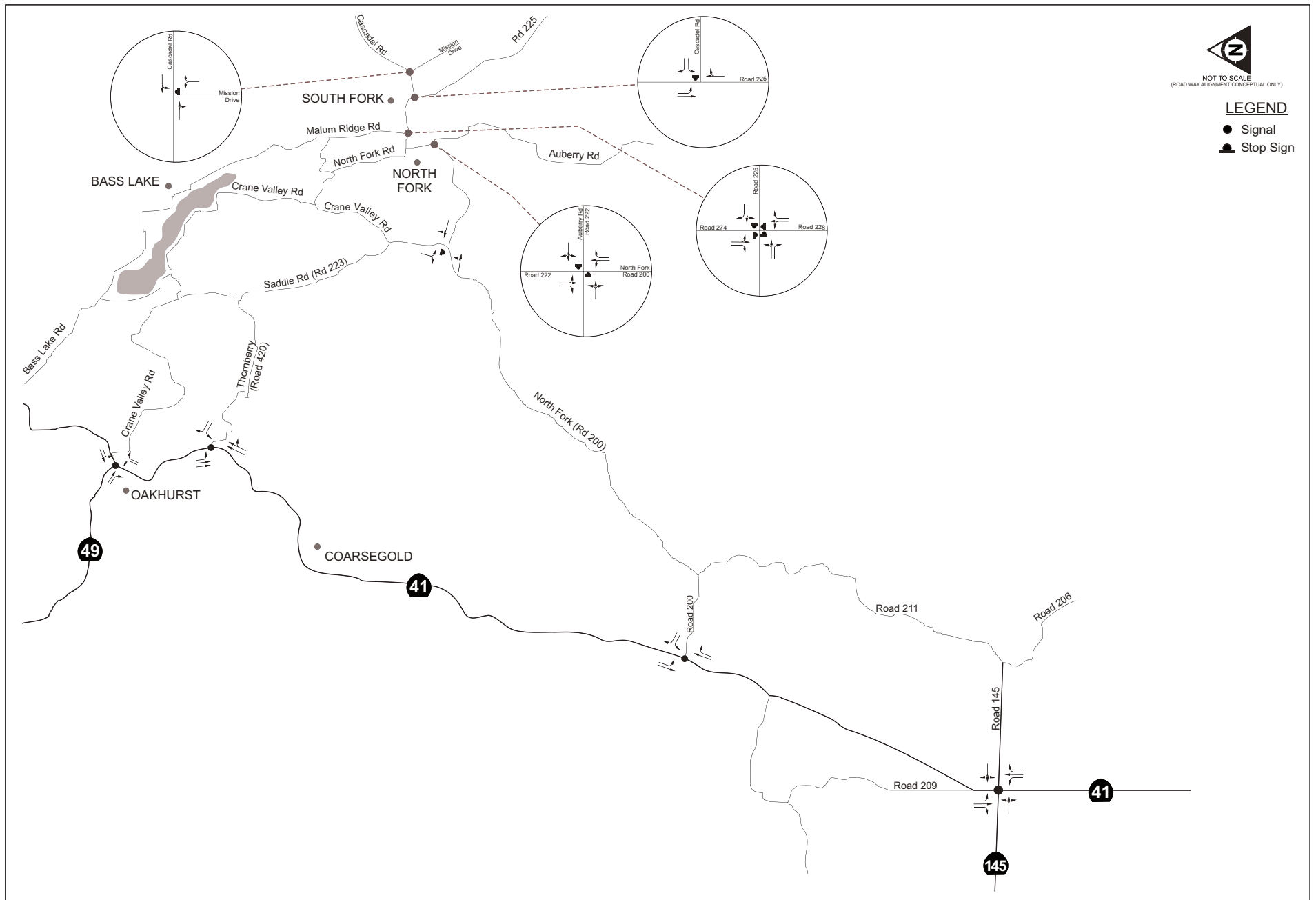


Figure 5-7
North Fork Site – 2008 Lane Configuration and Intersection Control With Alternative D Mitigation

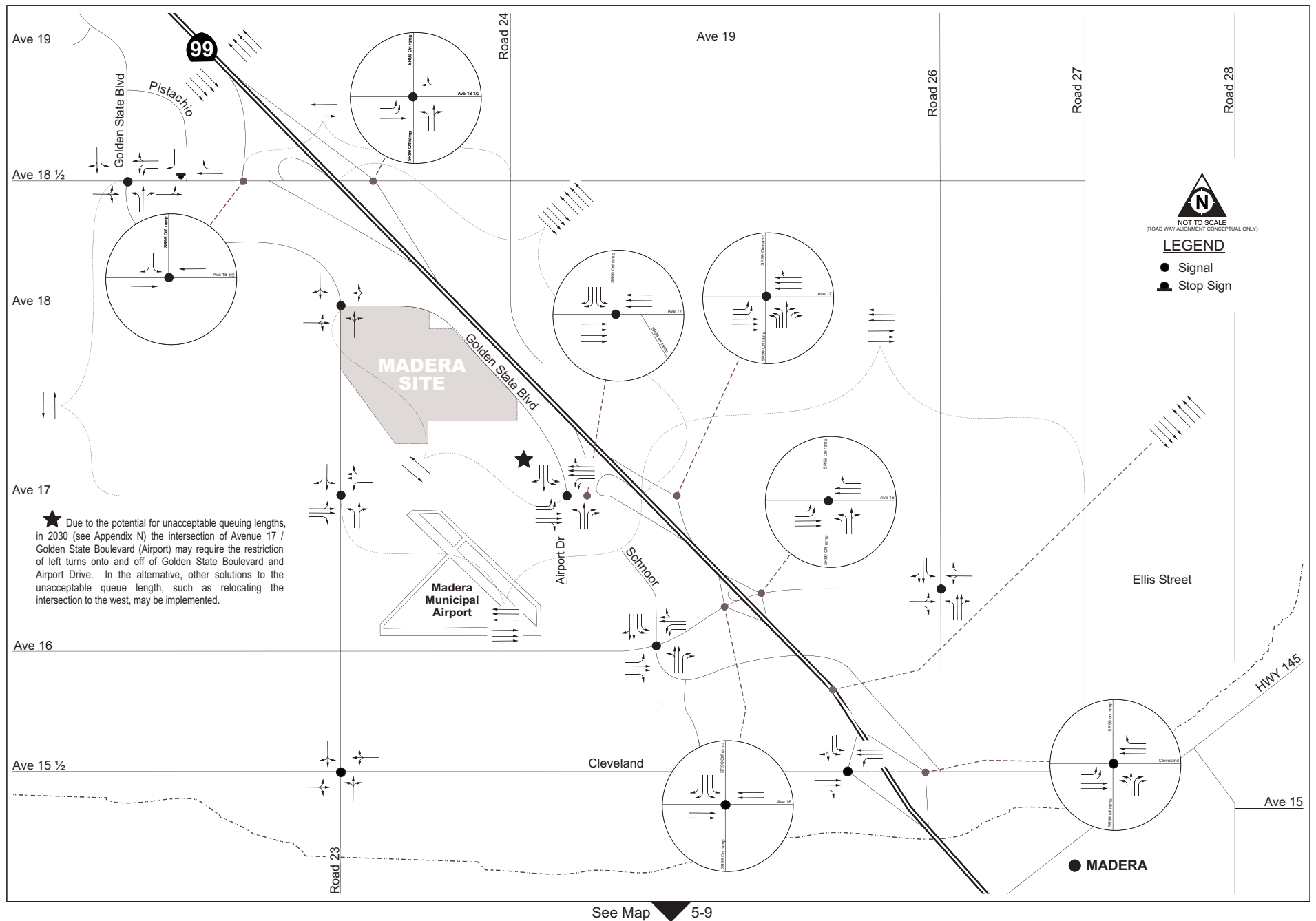


Figure 5-8
Madera Site – 2030 Lane Configuration and Intersection Control With Alternative A Mitigation

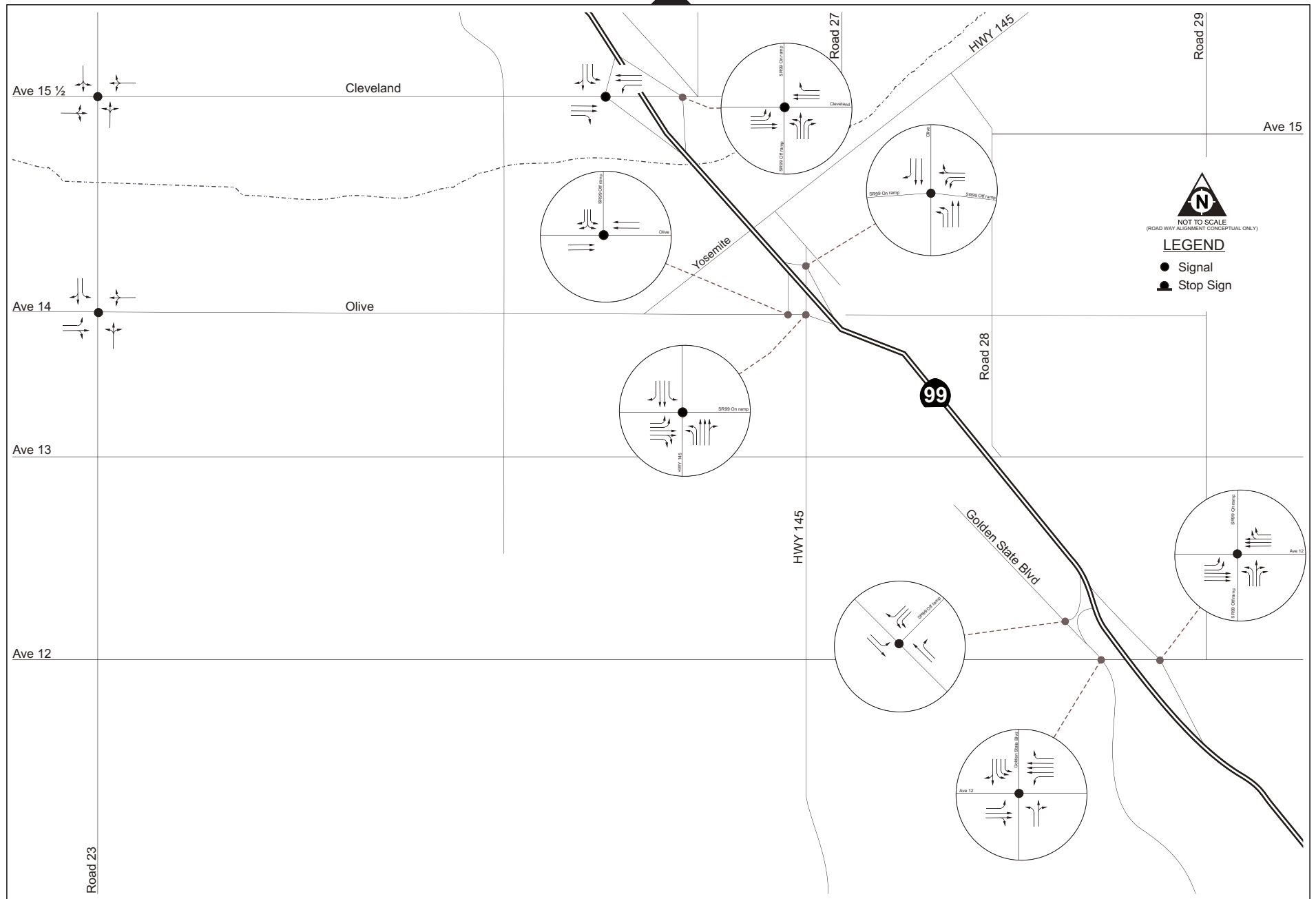


Figure 5-9
Madera Site – 2030 Lane Configuration and Intersection Control With Alternative A Mitigation

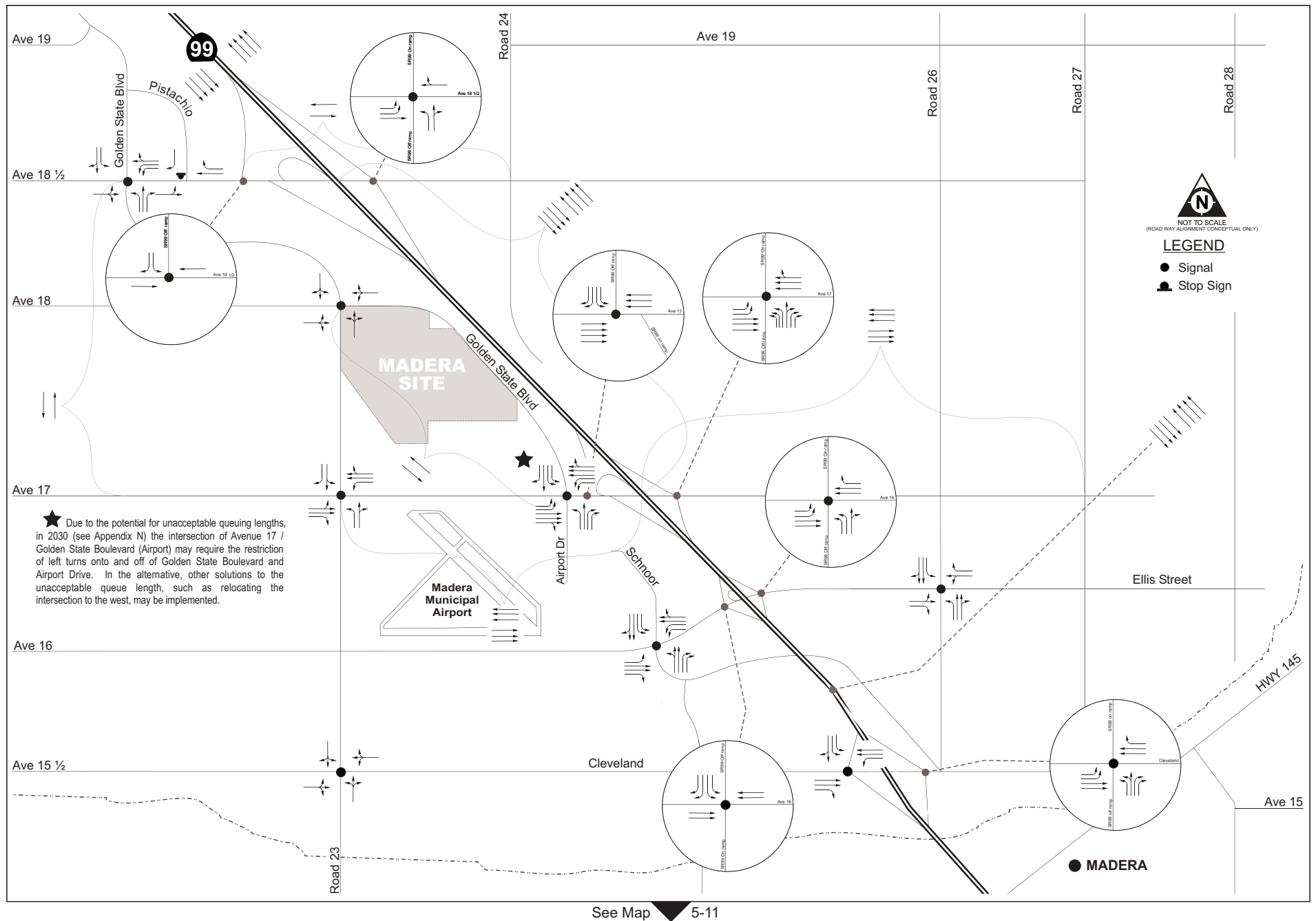


Figure 5-10
Madera Site – 2030 Lane Configuration and Intersection Control With Alternative B Mitigation

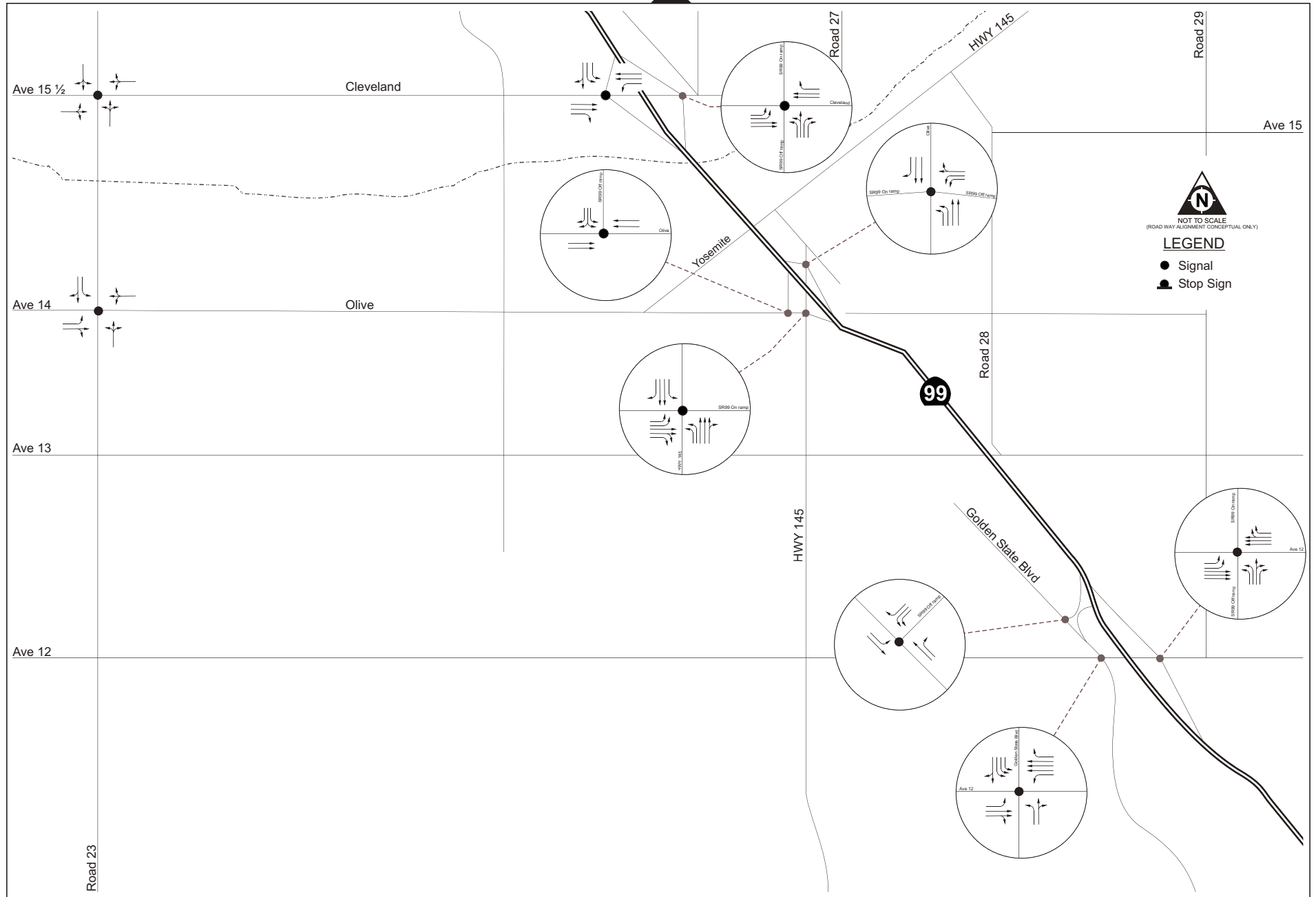


Figure 5-11
Madera Site – 2030 Lane Configuration and Intersection Control With Alternative B Mitigation

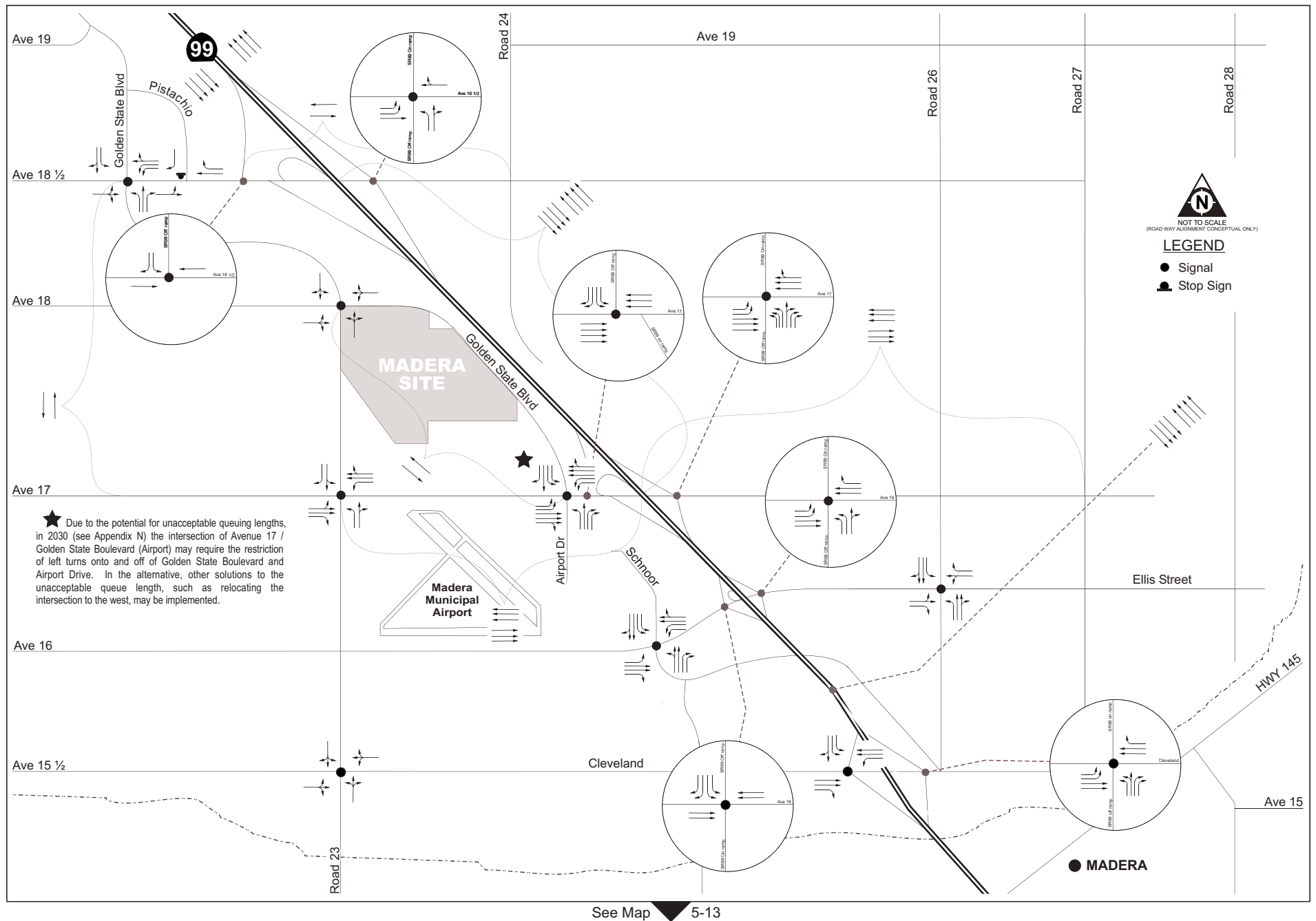


Figure 5-12
Madera Site – 2030 Lane Configuration and Intersection Control With Alternative C Mitigation

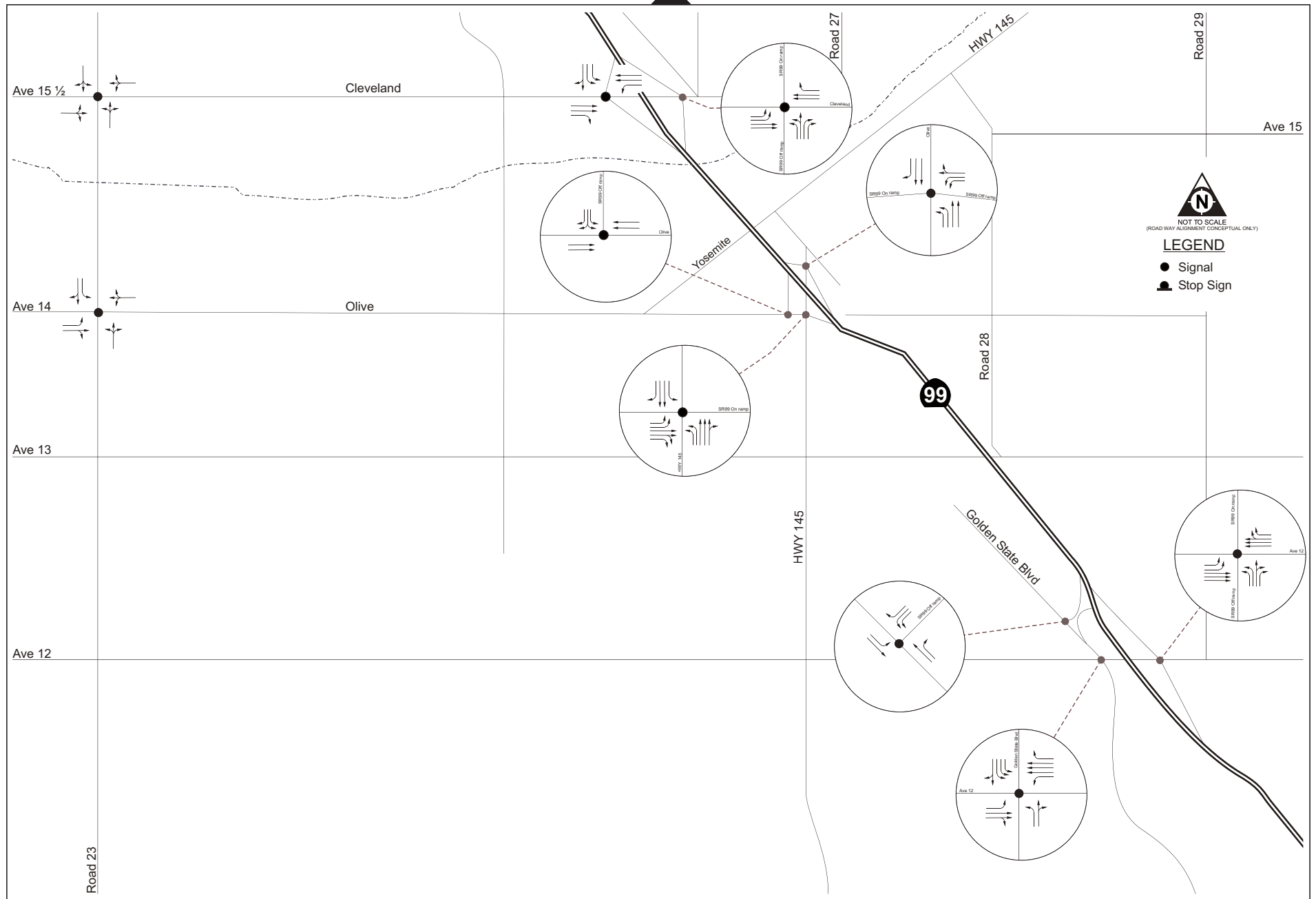


Figure 5-13
Madera Site – 2030 Lane Configuration and Intersection Control With Alternative C Mitigation

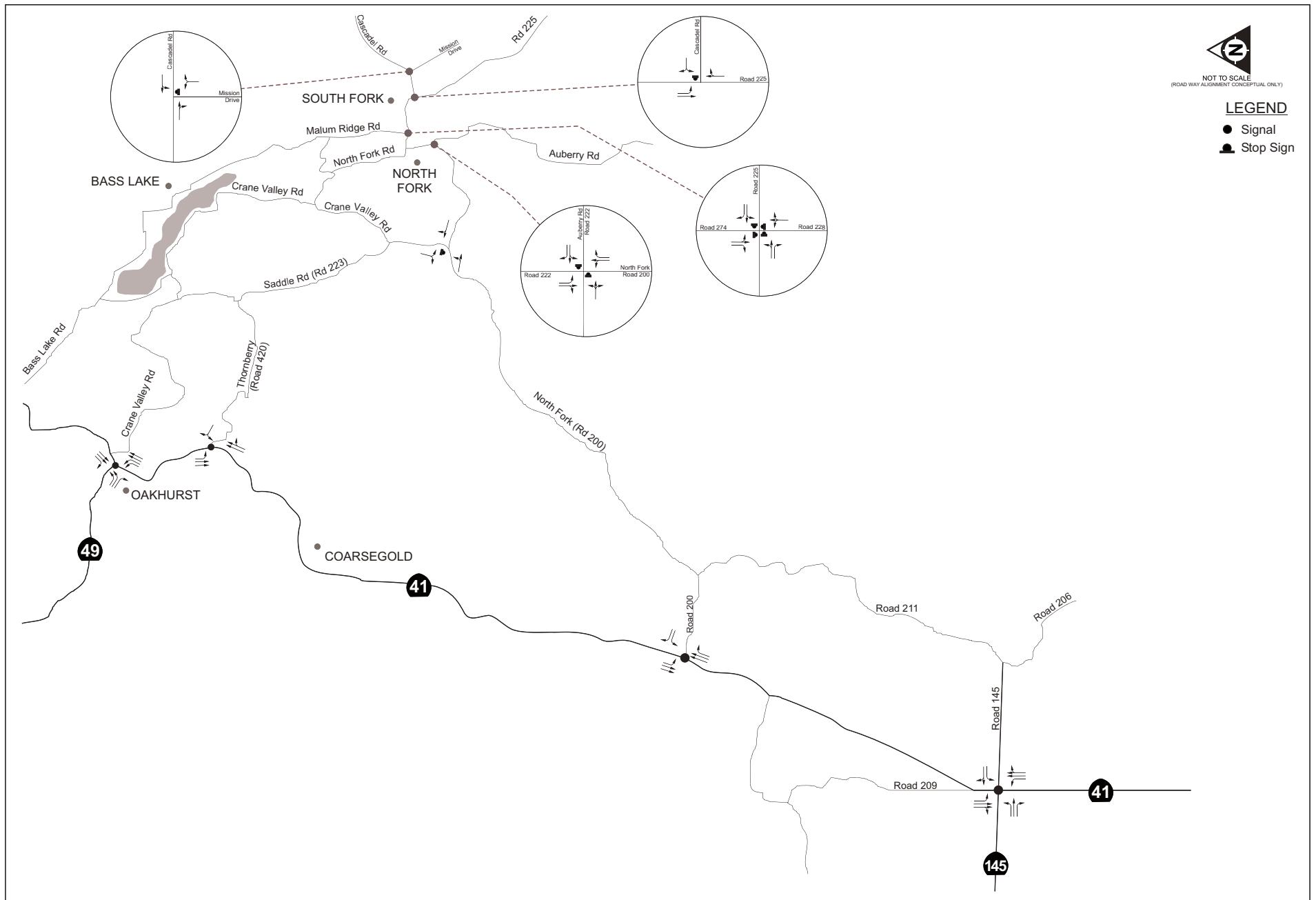


Figure 5-14
North Fork Site – 2030 Lane Configuration and Intersection Control With Alternative D Mitigation

Adoption of the below mitigation measures will reduce the impacts of the alternatives on transportation to a less than significant level:

2010 – Alternative A

Avenue 17 – SR-99 to Road 27

- Restripe/widen from two (2) lanes to four (4) lanes

SR-99 between Avenue 18 ½ and Avenue 17

- Restripe/widen the NB leg from two (2) lanes to three (3) lanes
- Restripe/widen the SB leg from two (2) lanes to three (3) lanes

SR-99 south of Avenue 17

- Restripe/widen the SB leg from two (2) lanes to three (3) lanes
- Restripe/widen the NB leg from two (2) lanes to three (3) lanes

SR-99 north of Avenue 18½

- Restripe/widen the SB leg from two (2) lanes to three (3) lanes

Avenue 18½ at SR 99 NB ramps

- Signalize the intersection

Avenue 18½ at SR 99 SB ramps/Road 23

- Signalize the intersection with one year traffic monitoring. The traffic signals may be turned off if the signal warrants are not met within one year.

Avenue 17 at SR 99 NB ramps

- Signalize the intersection
- Restripe/widen the NB approach, south leg, from one (1) shared left-through lane and one (1) right-turn lane to one (1) left-turn lane, one (1) shared left-through lane and two (2) right-turn lanes.
- Restripe/widen the EB approach, west leg, from one (1) left-turn lane and one (1) through lane to one (1) left-turn lane and two (2) through lanes.
- Restripe/widen the WB approach from one (1) through lane and one (1) right-turn lane to two (2) through lanes and one (1) right-turn lane

Avenue 17 at SR 99 SB ramps

- Signalize the intersection
- Restripe/widen the EB approach, west leg, from one (1) through lane to two (2) through lanes

- Restripe/widen the WB approach, east leg, from one (1) through lane to two (2) through lanes

Avenue 17 at Golden State Boulevard

- Signalize the intersection
- Restripe/widen the SB approach, north leg, from one (1) shared left-through-right lane to two (2) left-turn lanes and one (1) shared through-right lane
- Restripe/widen the EB approach, west leg, from one (1) left-turn, one (1) through lane, and one (1) right-turn lane to one (1) left-turn lane, one (1) through lane, and one (1) shared through-right lane
- Restripe/widen the WB approach, east leg, from one (1) left-turn lane and one (1) shared through-right lane to one (1) left-turn lane, two (2) through lanes, and one (1) right-turn lane

Avenue 17 at Road 23

- Signalize the intersection

Olive Avenue/Avenue 14/SR 99 SB on-ramp at SR 145

- Restripe/widen the EB approach, west leg, from one (1) shared left-through and one (1) right-turn lane, to one (1) left-turn lane, one (1) through lane, and one (1) right-turn lane

Olive Avenue/Avenue 14 at SR 99 SB off-ramp

- Restripe/widen the SB approach, north leg, from one (1) left-turn lane and one (1) right-turn lane, to two (2) left-turn lanes and one (1) right-turn lane

Avenue 12/Golden State Boulevard at SR 99 SB off ramps

- Signalize the intersection
- Restripe/widen the SB approach, north leg, from one (1) shared left-through to one (1) left-turn lane and one (1) through lane
- Restripe/widen the WB approach, east leg, from one (1) left-turn lane and one (1) right-turn lane, to dual (2) left-turn lanes and one (1) right-turn lane

Avenue 12 at Golden State Boulevard

- Restripe/widen the SB approach, north leg, from one (1) left-turn lane, one (1) through lane and one (1) right-turn lane to dual (2) left-turn lanes, one (1) through lane and one (1) right-turn lane

Avenue 12 at SR 99 NB ramps

- Restripe/widen the WB approach, east leg, from a shared through-right lane to one (1) through lane and one (1) right-turn lane

2010 – Alternative B

Avenue 17 – SR-99 to Road 27

- Restripe/widen from two (2) lanes to four (4) lanes

SR-99 north of Avenue 18 ½

- Restripe/widen the SB leg from two (2) lanes to three (3) lanes

SR-99 between Avenue 18 ½ and Avenue 17

- Restripe/widen the NB leg from two (2) lanes to three (3) lanes
- Restripe/widen the SB leg from two (2) lanes to three (3) lanes

SR-99 south of Avenue 17

- Restripe/widen the SB leg from two (2) lanes to three (3) lanes
- Restripe/widen the NB leg from two (2) lanes to three (3) lanes

Avenue 18½ at SR 99 NB ramps

- Signalize the intersection with one year traffic monitoring. The traffic signals may be turned off if the signal warrants are not met within one year.

Avenue 18½ at SR 99 SB ramps/Road 23

- Signalize the intersection with one year traffic monitoring. The traffic signals may be turned off if the signal warrants are not met within one year.

Avenue 17 at SR 99 NB ramps

- Signalize the intersection
- Restripe/widen the NB approach, south leg, from one (1) shared left-through lane and one (1) right-turn lane to one (1) left-turn lane, one (1) shared left-through lane and two (2) right-turn lanes.
- Restripe/widen the EB approach, west leg, from one (1) left-turn lane and one (1) through lane to one (1) left-turn lane and two (2) through lanes.
- Restripe/widen the WB approach from one (1) through lane and one (1) right-turn lane to two (2) through lanes and one (1) right-turn lane

Avenue 17 at SR 99 SB ramps

- Signalize the intersection
- Restripe/widen the EB approach, west leg, from one (1) through lane to two (2) through lanes
- Restripe/widen the WB approach, east leg, from one (1) through lane to two (2) through lanes

Avenue 17 at Golden State Boulevard

- Signalize the intersection
- Restripe/widen the SB approach, north leg, from one (1) shared left-through-right lane to two (2) left-turn lanes and one (1) shared through-right lane
- Restripe/widen the EB approach, west leg, from one (1) left-turn, one (1) through lane, and one (1) right-turn lane to one (1) left-turn lane, one (1) through lane, and one (1) shared through-right lane
- Restripe/widen the WB approach, east leg, from one (1) left-turn lane and one (1) shared through-right lane to one (1) left-turn lane, two (2) through lanes, and one (1) right-turn lane

Avenue 17 at Road 23

- Signalize the intersection

Olive Avenue/Avenue 14/SR 99 SB on-ramp at SR 145

- Restripe/widen the EB approach, west leg, from one (1) shared left-through and one (1) right-turn lane, to one (1) left-turn lane, one (1) through lane, and one (1) right-turn lane

Olive Avenue/Avenue 14 at SR 99 SB off-ramp

- Restripe/widen the SB approach, north leg, from one (1) left-turn lane and one (1) right-turn lane, to two (2) left-turn lanes and one (1) right-turn lane

Avenue 12/Golden State Boulevard at SR 99 SB off ramps

- Signalize the intersection
- Restripe/widen the SB approach, north leg, from one (1) shared left-through to one (1) left-turn lane and one (1) through lane
- Restripe/widen the WB approach, east leg, from one (1) left-turn lane and one (1) right-turn lane, to dual (2) left-turn lanes and one (1) right-turn lane

Avenue 12 at Golden State Boulevard

- Restripe/widen the SB approach, north leg, from one (1) left-turn lane, one (1) through lane and one (1) right-turn lane to dual (2) left-turn lanes, one (1) through lane and one (1) right-turn lane

Avenue 12 at SR 99 NB ramps

- Restripe/widen the WB approach, east leg, from a shared through-right lane to one (1) through lane and one (1) right-turn lane

2010 – Alternative C

Avenue 17 – SR-99 to Road 27

- Restripe/widen from two (2) lanes to four (4) lanes

SR-99 north of Avenue 18 ½

- Restripe/widen the SB leg from two (2) lanes to three (3) lanes

SR-99 between Avenue 18 ½ and Avenue 17

- Restripe/widen the NB leg from two (2) lanes to three (3) lanes
- Restripe/widen the SB leg from two (2) lanes to three (3) lanes

SR-99 south of Avenue 17

- Restripe/widen the SB leg from two (2) lanes to three (3) lanes
- Restripe/widen the NB leg from two (2) lanes to three (3) lanes

Avenue 18½ at SR 99 NB ramps

- Signalize the intersection with one year traffic monitoring. The traffic signals may be turned off if the signal warrants are not met within one year.

Avenue 18½ at SR 99 SB ramps/Road 23

- Signalize the intersection with one year traffic monitoring. The traffic signals may be turned off if the signal warrants are not met within one year.

Avenue 17 at SR 99 NB ramps

- Signalize the intersection
- Restripe/widen the NB approach, south leg, from one (1) shared left-through lane and one (1) right-turn lane to one (1) left-turn lane, one (1) shared left-through lane and two (2) right-turn lanes.
- Restripe/widen the EB approach, west leg, from one (1) left-turn lane and one (1) through lane to one (1) left-turn lane and two (2) through lanes.
- Restripe/widen the WB approach from one (1) through lane and one (1) right-turn lane to two (2) through lanes and one (1) right-turn lane

Avenue 17 at SR 99 SB ramps

- Signalize the intersection
- Restripe/widen the EB approach, west leg, from one (1) through lane to two (2) through lanes
- Restripe/widen the WB approach, east leg, from one (1) through lane to two (2) through lanes

Avenue 17 at Golden State Boulevard

- Signalize the intersection
- Restripe/widen the SB approach, north leg, from one (1) shared left-through-right lane to two (2) left-turn lanes and one (1) shared through-right lane
- Restripe/widen the EB approach, west leg, from one (1) left-turn, one (1) through lane, and one (1) right-turn lane to one (1) left-turn lane, one (1) through lane, and one (1) shared through-right lane
- Restripe/widen the WB approach, east leg, from one (1) left-turn lane and one (1) shared through-right lane to one (1) left-turn lane, two (2) through lanes, and one (1) right-turn lane

Avenue 17 at Road 23

- Signalize the intersection

Olive Avenue/Avenue 14/SR 99 SB on-ramp at SR 145

- Restripe/widen the EB approach, west leg, from one (1) shared left-through and one (1) right-turn lane, to one (1) left-turn lane, one (1) through lane, and one (1) right-turn lane

Olive Avenue/Avenue 14 at SR 99 SB off-ramp

- Restripe/widen the SB approach, north leg, from one (1) left-turn lane and one (1) right-turn lane, to two (2) left-turn lanes and one (1) right-turn lane

Avenue 12/Golden State Boulevard at SR 99 SB off ramps

- Signalize the intersection
- Restripe/widen the SB approach, north leg, from one (1) shared left-through to one (1) left-turn lane and one (1) through lane
- Restripe/widen the WB approach, east leg, from one (1) left-turn lane and one (1) right-turn lane, to dual (2) left-turn lanes and one (1) right-turn lane

Avenue 12 at Golden State Boulevard

- Restripe/widen the SB approach, north leg, from one (1) left-turn lane, one (1) through lane and one (1) right-turn lane to dual (2) left-turn lanes, one (1) through lane and one (1) right-turn lane

Avenue 12 at SR 99 NB ramps

- Restripe/widen the WB approach, east leg, from a shared through-right lane to one (1) through lane and one (1) right-turn lane

2010 – Alternative D (North Fork Site)

None warranted

2030 – Alternative A

Avenue 17 – Road 23 to SR-99

- Restripe/widen from two (2) lanes to six (6) lanes

Avenue 17 –SR-99 to Road 27

- Restripe/widen from four (4) lanes to six (6) lanes

SR 99 north of Avenue 18½

- Restripe/widen the NB leg from three (3) lanes to four (4) lanes
- Restripe/widen the SB leg from three (3) lanes to four (4) lanes

SR 99 between Avenue 18½ to Avenue 17

- Restripe/widen the NB leg from three (3) lanes to four (4) lanes
- Restripe/widen the SB leg from three (3) lanes to four (4) lanes

SR 99 south of Avenue 17

- Restripe/widen the NB leg from three (3) lanes to four (4) lanes
- Restripe/widen the SB leg from three (3) lanes to four (4) lanes

Avenue 18½ at SR 99 NB ramps

- Restripe/widen the EB approach, west leg, from one (1) left-turn lane and one (1) through lane, to dual (2) left-turn lanes and one (1) through lane

Avenue 18½ at SR 99 SB ramps/Road 23

- Restripe/widen the SB approach, north leg, from one (1) left-turn lane and one (1) through lane, to dual (2) left-turn lanes and one (1) through lane

Avenue 18½ at Pistachio Drive

- Although the Avenue 18½ at Pistachio Drive intersection is projected to meet the urban peak hour volume signal warrant, it will not be signalized due to its proximity to the SR 99 SB off-ramp. The intersection will be restricted to right-in/right-out/left-in access, which reduces the need for a signal and allows the intersection to operate at an acceptable level of service without a signal.

Avenue 18½ at Golden State Boulevard/Road 23

- Signalize the intersection
- Restripe/widen the NB approach, south leg, from one (1) left-turn lane and one (1) through-right lane, to one (1) left-turn lane, one (1) through lane, and one (1) right-turn lane
- Restripe/widen the WB approach, east leg, from one (1) shared left-through lane and one (1) right-turn lane, to dual (2) left-turn lanes and one (1) shared through-right lane
- Restripe/widen the SB approach, north leg, from one (1) shared left-through-right lane, to one (1) left-turn lane and one (1) through-right lane

Avenue 18 at Road 23

- Signalize the intersection

Avenue 17 at SR 99 NB ramps

- Restripe/widen the NB approach, south leg, from one (1) left-turn lane, one (1) shared left-through lane, and two (2) right-turn lanes to three (3) left-turn lanes, one (1) shared through-right lane, and two (2) right-turn lanes.
- Restripe/widen the EB approach, west leg, from one (1) left-turn lane and two (2) through lanes to two (2) left-turn lanes and three (3) through lanes.
- Restripe/widen the WB approach, east leg, from two (2) through lanes and one (1) right-turn lane to two (2) through lanes and one (1) shared through-right lane
- Widen the NB off-ramp to two (2) lanes with a NB auxiliary lane on SR 99

Avenue 17 at SR 99 SB ramps

- Restripe/widen the SB approach, north leg, from one (1) left-turn lane, and one (1) right-turn lane to two (2) left-turn lanes and two (2) right-turn lanes
- Restripe/widen the EB approach, from two (2) through lanes to four (4) through lanes
- Restripe/widen the WB approach, east leg, from two (2) through lanes to three (3) through lanes

Avenue 17 at SR 99 SB ramps

- Restripe/widen the SB approach, north leg, from one (1) left-turn lane, and one (1) right-turn lane to two (2) left-turn lanes and two (2) right-turn lanes
- Restripe/widen the EB approach, from two (2) through lanes to four (4) through lanes
- Restripe/widen the WB approach, east leg, from two (2) through lanes to three (3) through lanes

Avenue 17 at Golden State Boulevard

- Restripe/widen the NB approach, south leg, from one (1) left-turn lane, one (1) through lane, and one (1) right-turn lane to one (1) left-turn lane, one (1) through lane, and two (2) right-turn lanes

- Restripe/widen the SB approach, north leg, from two (2) left-turn lanes and one (1) shared through-right lane to two (2) left-turn lanes, one (1) through lane and one (1) right-turn lane
- Restripe/widen the EB approach, west leg, from one (1) left-turn , one (1) through lane, and one (1) shared through-right lane to two (2) left-turn lanes, two (2) through lanes, and one (1) shared through-right lane
- Restripe/widen the WB approach, east leg, from one (1) left-turn lane, two (2) through lanes, and one(1) right-turn lane to tow (2) left-turn lanes, two (2) through lanes, and one (1) shared through-right lane

The intersection improvements listed above for the Avenue 17 at Golden State Boulevard intersection may not meet appropriate queuing lengths under 2030 conditions (Peters Engineering Group, 2009; Appendix N). Therefore, the interchange and surrounding circulation system would require additional reconstruction to provide adequate queuing lengths. Measures required to ensure adequate queue lengths include either requiring limiting movements to right turns only onto and off of Golden State Boulevard and Airport Drive at Avenue 17 or relocating the Golden State Boulevard/Airport Drive/Avenue 17 intersection to the west. Reconstruction would most likely require through and right turns only onto and off of Golden State Boulevard and Airport Drive at Avenue 17. In the alternative, other solutions to the unacceptable queue length, such as relocating the intersection to the west, may be implemented.

Avenue 17 at Road 23

- Restripe/widen the NB approach, south leg, from one (1) shared left-through-right lane to one (1) left-turn lane and one (1) shared through-right lane
- Restripe/widen the SB approach, north leg, from one (1) shared left-through-right lane to one (1) shared left-through lane and one (1) right-turn lane
- Restripe/widen the EB approach, west leg, from one (1) shared left-through-right lane to one (1) shared left-through lane, one (1) through lane, and one (1) right-turn lane
- Restripe/widen the WB approach, east leg, from one (1) shared left-through-right lane to one (1) left-turn lane and one (1) through lane, and one (1) shared through-right lane

Avenue 16/Ellis Street at Aviation Drive

- Restripe/widen the NB approach, south leg, from one (1) left-turn lane and one (1) shared through-right lane to one (1) left-turn lane, one (1) through lane, and two (2) right-turn lanes
- Restripe/widen the SB approach, north leg, from one (1) left-turn lane, one (1) through lane, and one (1) right-turn lane to two (2) left-turn lanes, one (1) through lane, and one (1) shared through-right lane
- Restripe/widen the EB approach, west leg, from one (1) left-turn lane, one (1) through lane, and one (1) shared through-right lane to (1) left-turn lane, two (2) through lanes, and one (1) right-turn lane

- Restripe/widen the WB approach, east leg, from one (1) left-turn lane, one (1) through lane, and one (1) shared through-right lane to two (2) left-turn lanes, one (1) through lane, and one (1) through-right lane

Cleveland Avenue/Avenue 15½ at SR 99 NB ramps

- Restripe/widen the EB approach, west leg, from one (1) left-turn lane and two (2) through lanes to two (2) left-turn lanes and two (2) through lanes
- Restripe/widen the NB approach, south leg, from one (1) left-turn lane, one (1) shared left-through lane, and one (1) right-turn lane to one (1) left-turn lane, one (1) shared left-through lane, and two (2) right-turn lanes

Cleveland Avenue/Avenue 15½ at SR 99 SB ramps

- Restripe/widen the SB approach, north leg, from one (1) shared left-through lane and one (1) right-turn lane to two (2) left-turn lanes and one (1) shared through-right lane

Avenue 15½ at Road 23

- Signalize the intersection

SR 145/Madera Avenue at SR 99 NB ramps

- Restripe/widen the SB approach, north leg, from one (1) through lane and one (1) shared through-right lane to two (2) through lanes and one (1) right-turn lane
- Restripe/widen the WB approach, east leg, from one (1) left-turn lane and one (1) shared through-right lane to two (2) left-turn lanes and one (1) shared through-right lane

Olive Avenue/Avenue 14/SR 99 SB on-ramp at SR 145

- Restripe/widen the NB approach, south leg, from two (2) left-turn lanes, one (1) through lane, and one (1) shared through-right lane, to dual (2) left-turn lanes, two (2) through lanes, and one (1) shared through-right lane
- Restripe/widen the SB approach, north leg, from one (1) shared left-through lane, one (1) through lane, and one (1) right-turn lane, to one (1) left-turn lane, two (2) through lanes, and one (1) right-turn lane
- Restripe/widen the EB approach, west leg, from one (1) left-turn lane, one (1) through lane and one (1) right-turn lane, to dual (2) left-turn lanes, one (1) through lane, one (1) shared through-right lane and one (1) right-turn lane

Olive Avenue/Avenue 14 at SR 99 SB off-ramp

- Restripe/widen the SB approach, north leg, from two (2) left-turn lanes and one (1) right-turn lane to one (1) left-turn lane, one (1) shared left-right-turn lane, and one (1) right-turn lane

Avenue 14 at Road 23

- Signalize the intersection
- Restripe/widen the SB approach, north leg, from one (1) shared left-through-right lane, to one (1) left-turn lane and one (1) shared through-right lane
- Restripe/widen the EB approach, west leg, from one (1) shared left-through-right lane, to one (1) left-turn lane and one (1) shared through-right lane

Avenue 12/Golden State Boulevard at SR 99 SB off ramps

- Widen the SB off-ramp to two (2) lanes with a SB auxiliary lane on SR 99

Avenue 12 at Golden State Boulevard

- Restripe/widen the SB approach, north leg, from a dual (2) left-turn lanes, one (1) through lane and one (1) right-turn lane, to three (3) left-turn lanes, and one (1) shared through-right lane
- Restripe/widen the WB approach, east leg, from one (1) left-turn lane, one (1) through lane, and one (1) shared through-right lane, to one (1) left-turn lane, three (3) through lanes, and one (1) right-turn lane

Avenue 12 at SR 99 NB ramps

- Restripe/widen the NB approach, south leg from a shared left-through lane and a separate right-turn lane, to dual (2) left-turn lanes, a shared through-right lane, and one (1) right-turn lane
- Restripe/widen the EB approach, west leg, from one (1) left-turn lane and two (2) through lanes to dual (2) left-turn lanes and three (3) through lanes
- Restripe/widen the WB approach, east leg, from two (2) through lanes and one (1) right-turn lane, to two (2) through lanes, one (1) shared through-right lane and one (1) right-turn lane

Two freeway segments and two intersection are still projected to operate below the adopted level of service standard even with the recommended 2010 and 2030 Alternative A improvements (although the project's contribution to these already unacceptable operations would be fully mitigated with the recommended improvements). Specifically, the NB and SB SR-99 south of Avenue 17 freeway segments are projected to operate at LOS "E" and "F" respectively in the PM peak hour. Per discussions with Caltrans staff, SR-99 is only programmed for eight lanes for this segment. The Avenue 17 at SR-99 NB ramps and Avenue 17 at Golden State Boulevard intersection is still projected to operate at a LOS "F" in the PM peak hour. Per discussions with Caltrans staff, widening Avenue 17 to eight lanes is not recommended. However with implementation of above listed mitigation, these four locations in the 2030 Project scenario are projected to operate above the 2030 No Project measures of effectiveness (freeway density and intersection delay). Therefore, a significant impact would not result at these locations.

2030 – Alternative B*Avenue 17 – Road 23 to SR-99*

- Restripe/widen from two (2) lanes to six (6) lanes

Avenue 17 –SR-99 to Road 27

- Restripe/widen from four (4) lanes to six (6) lanes

SR 99 north of Avenue 18½

- Restripe/widen the NB leg from three (3) lanes to four (4) lanes
- Restripe/widen the SB leg from three (3) lanes to four (4) lanes

SR 99 between Avenue 18½ to Avenue 17

- Restripe/widen the NB leg from three (3) lanes to four (4) lanes
- Restripe/widen the SB leg from three (3) lanes to four (4) lanes

SR 99 south of Avenue 17

- Restripe/widen the NB leg from three (3) lanes to four (4) lanes
- Restripe/widen the SB leg from three (3) lanes to four (4) lanes

Avenue 18½ at SR 99 NB ramps

- Restripe/widen the EB approach, west leg, from one (1) left-turn lane and one (1) through lane, to dual (2) left-turn lanes and one (1) through lane

Avenue 18½ at SR 99 SB ramps/Road 23

- Restripe/widen the SB approach, north leg, from a shared left-right lane to one (1) left-turn lane on one (1) right-turn lane

Avenue 18½ at Pistachio Drive

- Although the Avenue 18½ at Pistachio Drive intersection is projected to meet the urban peak hour volume signal warrant, it will not be signalized due to its proximity to the SR 99 SB off-ramp. The intersection will be restricted to right-in/right-out/left-in access, which reduces the need for a signal and allows the intersection to operate at an acceptable level of service without a signal.

Avenue 18½ at Golden State Boulevard/Road 23

- Signalize the intersection
- Restripe/widen the NB approach, south leg, from one (1) left-turn lane and one (1) through-right lane, to one (1) left-turn lane, one (1) through lane, and one (1) right-turn lane

- Restripe/widen the WB approach, east leg, from one (1) shared left-through lane and one (1) right-turn lane, to dual (2) left-turn lanes and one (1) shared through-right lane
- Restripe/widen the SB approach, north leg, from one (1) shared left-through-right lane, to one (1) left-turn lane and one (1) through-right lane

Avenue 18 at Road 23

- Signalize the intersection

Avenue 17 at SR 99 NB ramps

- Restripe/widen the NB approach, south leg, from one (1) left-turn lane, one (1) shared left-through lane, and two (2) right-turn lanes to three (3) left-turn lanes, one (1) shared through-right lane, and two (2) right-turn lanes.
- Restripe/widen the EB approach, west leg, from one (1) left-turn lane and two (2) through lanes to two (2) left-turn lanes and three (3) through lanes.
- Restripe/widen the WB approach, east leg, from two (2) through lanes and one (1) right-turn lane to two (2) through lanes and one (1) shared through-right lane
- Widen the NB off-ramp to two (2) lanes with a NB auxiliary lane on SR 99

Avenue 17 at SR 99 SB ramps

- Restripe/widen the SB approach, north leg, from one (1) left-turn lane, and one (1) right-turn lane to two (2) left-turn lanes and two (2) right-turn lanes
- Restripe/widen the EB approach, from two (2) through lanes to four (4) through lanes
- Restripe/widen the WB approach, east leg, from two (2) through lanes to three (3) through lanes

Avenue 17 at SR 99 SB ramps

- Restripe/widen the SB approach, north leg, from one (1) left-turn lane, and one (1) right-turn lane to two (2) left-turn lanes and two (2) right-turn lanes
- Restripe/widen the EB approach, from two (2) through lanes to four (4) through lanes
- Restripe/widen the WB approach, east leg, from two (2) through lanes to three (3) through lanes

Avenue 17 at Golden State Boulevard

- Restripe/widen the NB approach, south leg, from one (1) left-turn lane, one (1) through lane, and one (1) right-turn lane to one (1) left-turn lane, one (1) through lane, and two (2) right-turn lanes
- Restripe/widen the SB approach, north leg, from two (2) left-turn lanes and one (1) shared through-right lane to two (2) left-turn lanes, one (1) through lane and one (1) right-turn lane
- Restripe/widen the EB approach, west leg, from one (1) left-turn , one (1) through lane, and one (1) shared through-right lane to two (2) left-turn lanes, two (2) through lanes, and one (1) shared through-right lane

- Restripe/widen the WB approach, east leg, from one (1) left-turn lane, two (2) through lanes, and one (1) right-turn lane to two (2) left-turn lanes, two (2) through lanes, and one (1) shared through-right lane

The intersection improvements listed above for the Avenue 17 at Golden State Boulevard intersection may not meet appropriate queuing lengths under 2030 conditions (Peters Engineering Group, 2009; Appendix N). Therefore, the interchange and surrounding circulation system would require additional reconstruction to provide adequate queuing lengths. Measures required to ensure adequate queue lengths include either requiring limiting movements to right turns only onto and off of Golden State Boulevard and Airport Drive at Avenue 17 or relocating the Golden State Boulevard/Airport Drive/Avenue 17 intersection to the west.

Avenue 17 at Road 23

- Restripe/widen the NB approach, south leg, from one (1) shared left-through-right lane to one (1) left-turn lane and one (1) shared through-right lane
- Restripe/widen the SB approach, north leg, from one (1) shared left-through-right lane to one (1) shared left-through lane and one (1) right-turn lane
- Restripe/widen the EB approach, west leg, from one (1) shared left-through-right lane to one (1) shared left-through lane, one (1) through lane, and one (1) right-turn lane
- Restripe/widen the WB approach, east leg, from one (1) shared left-through-right lane to one (1) left-turn lane and one (1) through lane, and one (1) shared through-right lane

Avenue 16/Ellis Street at Aviation Drive

- Restripe/widen the NB approach, south leg, from one (1) left-turn lane and one (1) shared through-right lane to one (1) left-turn lane, one (1) through lane, and two (2) right-turn lanes
- Restripe/widen the SB approach, north leg, from one (1) left-turn lane, one (1) through lane, and one (1) right-turn lane to two (2) left-turn lanes, one (1) through lane, and one (1) shared through-right lane
- Restripe/widen the EB approach, west leg, from one (1) left-turn lane, one (1) through lane, and one (1) shared through-right lane to one (1) left-turn lane, two (2) through lanes, and one (1) right-turn lane
- Restripe/widen the WB approach, east leg, from one (1) left-turn lane, one (1) through lane, and one (1) shared through-right lane to two (2) left-turn lanes, one (1) through lane, and one (1) through-right lane

Cleveland Avenue/Avenue 15½ at SR 99 NB ramps

- Restripe/widen the EB approach, west leg, from one (1) left-turn lane and two (2) through lanes to two (2) left-turn lanes and two (2) through lanes

- Restripe/widen the NB approach, south leg, from one (1) left-turn lane, one (1) shared left-through lane, and one (1) right-turn lane to one (1) left-turn lane, one (1) shared left-through lane, and two (2) right-turn lanes

Cleveland Avenue/Avenue 15½ at SR 99 SB ramps

- Restripe/widen the SB approach, north leg, from one (1) shared left-through lane and one (1) right-turn lane to two (2) left-turn lanes and one (1) shared through-right lane

Avenue 15½ at Road 23

- Signalize the intersection

SR 145/Madera Avenue at SR 99 NB ramps

- Restripe/widen the SB approach, north leg, from one (1) through lane and one (1) shared through-right lane to two (2) through lanes and one (1) right-turn lane
- Restripe/widen the WB approach, east leg, from one (1) left-turn lane and one (1) shared through-right lane to two (2) left-turn lanes and one (1) shared through-right lane

Olive Avenue/Avenue 14/SR 99 SB on-ramp at SR 145

- Restripe/widen the NB approach, south leg, from two (2) left-turn lanes, one (1) through lane, and one (1) shared through-right lane, to dual (2) left-turn lanes, two (2) through lanes, and one (1) shared through-right lane
- Restripe/widen the SB approach, north leg, from one (1) shared left-through lane, one (1) through lane, and one (1) right-turn lane, to one (1) left-turn lane, two (2) through lanes, and one (1) right-turn lane
- Restripe/widen the EB approach, west leg, from one (1) left-turn lane, one (1) through lane and one (1) right-turn lane, to dual (2) left-turn lanes, one (1) through lane, one (1) shared through-right lane and one (1) right-turn lane

Olive Avenue/Avenue 14 at SR 99 SB off-ramp

- Restripe/widen the SB approach, north leg, from two (2) left-turn lanes and one (1) right-turn lane to one (1) left-turn lane, one (1) shared left-right-turn lane, and one (1) right-turn lane

Avenue 14 at Road 23

- Signalize the intersection
- Restripe/widen the SB approach, north leg, from one (1) shared left-through-right lane, to one (1) left-turn lane and one (1) shared through-right lane
- Restripe/widen the EB approach, west leg, from one (1) shared left-through-right lane, to one (1) left-turn lane and one (1) shared through-right lane

Avenue 12/Golden State Boulevard at SR 99 SB off ramps

- Widen the SB off-ramp to two (2) lanes with a SB auxiliary lane on SR 99

Avenue 12 at Golden State Boulevard

- Restripe/widen the SB approach, north leg, from a dual (2) left-turn lanes, one (1) through lane and one (1) right-turn lane, to three (3) left-turn lanes, and one (1) shared through-right lane
- Restripe/widen the WB approach, east leg, from one (1) left-turn lane, one (1) through lane, and one (1) shared through-right lane, to one (1) left-turn lane, three (3) through lanes, and one (1) right-turn lane

Avenue 12 at SR 99 NB ramps

- Restripe/widen the NB approach, south leg from a shared left-through lane and a separate right-turn lane, to dual (2) left-turn lanes, a shared through-right lane, and one (1) right-turn lane
- Restripe/widen the EB approach, west leg, from one (1) left-turn lane and two (2) through lanes to dual (2) left-turn lanes and three (3) through lanes
- Restripe/widen the WB approach, east leg, from two (2) through lanes and one (1) right-turn lane, to two (2) through lanes, one (1) shared through-right lane and one (1) right-turn lane

Two freeway segments and two intersection are still projected to operate below the adopted level of service standard even with the recommended 2010 and 2030 Alternative B improvements (although the project's contribution to these already unacceptable operations would be fully mitigated with the recommended improvements). Specifically, the NB and SB SR-99 south of Avenue 17 freeway segments are projected to operate at LOS "E" and "F" respectively in the PM peak hour. Per discussions with Caltrans staff, SR-99 is only programmed for eight lanes for this segment. The Avenue 17 at SR-99 NB ramps and Avenue 17 at Golden State Boulevard intersections are projected to operate at a LOS "F" in the PM peak hour. Per discussions with Caltrans staff, widening Avenue 17 to eight lanes is not recommended. However with implementation of above listed mitigation, these four locations in the 2030 Project scenario are projected to operate above the 2030 No Project measures of effectiveness (freeway density and intersection delay). Therefore, a significant impact would not result at these locations.

2030 – Alternative C*Road 23 - Avenue 18½ to Avenue 17*

- Restripe/widen from two (2) lanes to four (4) lanes

Avenue 17 – Road 23 to SR-99

- Restripe/widen from two (2) lanes to six (6) lanes

Avenue 17 –SR-99 to Road 27

- Restripe/widen from four (4) lanes to six (6) lanes

SR 99 north of Avenue 18½

- Restripe/widen the NB leg from three (3) lanes to four (4) lanes
- Restripe/widen the SB leg from three (3) lanes to four (4) lanes

SR 99 between Avenue 18½ to Avenue 17

- Restripe/widen the NB leg from three (3) lanes to four (4) lanes
- Restripe/widen the SB leg from three (3) lanes to four (4) lanes

SR 99 south of Avenue 17

- Restripe/widen the NB leg from three (3) lanes to four (4) lanes
- Restripe/widen the SB leg from three (3) lanes to four (4) lanes

Avenue 18½ at SR 99 NB ramps

- Restripe/widen the EB approach, west leg, from one (1) left-turn lane and one (1) through lane, to dual (2) left-turn lanes and one (1) through lane

Avenue 18½ at SR 99 SB ramps/Road 23

- Restripe/widen the SB approach, north leg, from a shared left-right lane to one (1) left-turn lane on one (1) right-turn lane

Avenue 18½ at Pistachio Drive

- Although the Avenue 18½ at Pistachio Drive intersection is projected to meet the urban peak hour volume signal warrant, it will not be signalized due to its proximity to the SR 99 SB off-ramp. The intersection will be restricted to right-in/right-out/left-in access, which reduces the need for a signal and allows the intersection to operate at an acceptable level of service without a signal.

Avenue 18½ at Golden State Boulevard/Road 23

- Signalize the intersection
- Restripe/widen the NB approach, south leg, from one (1) left-turn lane and one (1) through-right lane, to one (1) left-turn lane, one (1) through lane, and one (1) right-turn lane
- Restripe/widen the WB approach, east leg, from one (1) shared left-through lane and one (1) right-turn lane, to dual (2) left-turn lanes and one (1) shared through-right lane
- Restripe/widen the SB approach, north leg, from one (1) shared left-through-right lane, to one (1) left-turn lane and one (1) through-right lane

Avenue 18 at Road 23

- Signalize the intersection

Avenue 17 at SR 99 NB ramps

- Restripe/widen the NB approach, south leg, from one (1) left-turn lane, one (1) shared left-through lane, and two (2) right-turn lanes to three (3) left-turn lanes, one (1) shared through-right lane, and two (2) right-turn lanes.
- Restripe/widen the EB approach, west leg, from one (1) left-turn lane and two (2) through lanes to two (2) left-turn lanes and three (3) through lanes.
- Restripe/widen the WB approach, east leg, from two (2) through lanes and one (1) right-turn lane to two (2) through lanes and one (1) shared through-right lane
- Widen the NB off-ramp to two (2) lanes with a NB auxiliary lane on SR 99

Avenue 17 at SR 99 SB ramps

- Restripe/widen the SB approach, north leg, from one (1) left-turn lane, and one (1) right-turn lane to two (2) left-turn lanes and two (2) right-turn lanes
- Restripe/widen the EB approach, from two (2) through lanes to four (4) through lanes
- Restripe/widen the WB approach, east leg, from two (2) through lanes to three (3) through lanes

Avenue 17 at Golden State Boulevard

- Restripe/widen the NB approach, south leg, from one (1) left-turn lane, one (1) through lane, and one (1) right-turn lane to one (1) left-turn lane, one (1) through lane, and two (2) right-turn lanes
- Restripe/widen the SB approach, north leg, from two (2) left-turn lanes and one (1) shared through-right lane to two (2) left-turn lanes, one (1) through lane and one (1) right-turn lane
- Restripe/widen the EB approach, west leg, from one (1) left-turn , one (1) through lane, and one (1) shared through-right lane to two (2) left-turn lanes, two (2) through lanes, and one (1) shared through-right lane
- Restripe/widen the WB approach, east leg, from one (1) left-turn lane, two (2) through lanes, and one(1) right-turn lane to tow (2) left-turn lanes, two (2) through lanes, and one (1) shared through-right lane

The intersection improvements listed above for the Avenue 17 at Golden State Boulevard intersection may not meet appropriate queuing lengths under 2030 conditions (Peters Engineering Group, 2009; Appendix N). Therefore, the interchange and surrounding circulation system would require additional reconstruction to provide adequate queuing lengths. Measures required to ensure adequate queue lengths include either requiring limiting movements to right turns only onto and off of Golden State Boulevard and Airport Drive at Avenue 17 or relocating the Golden State Boulevard/Airport Drive/Avenue 17 intersection to the west.

Avenue 17 at Road 23

- Restripe/widen the NB approach, south leg, from one (1) shared left-through-right lane to one (1) left-turn lane and one (1) shared through-right lane
- Restripe/widen the SB approach, north leg, from one (1) shared left-through-right lane to one (1) shared left-through lane and one (1) right-turn lane
- Restripe/widen the EB approach, west leg, from one (1) shared left-through-right lane to one (1) shared left-through lane, one (1) through lane, and one (1) right-turn lane
- Restripe/widen the WB approach, east leg, from one (1) shared left-through-right lane to one (1) left-turn lane and one (1) through lane, and one (1) shared through-right lane

Avenue 16/Ellis Street at Aviation Drive

- Restripe/widen the NB approach, south leg, from one (1) left-turn lane and one (1) shared through-right lane to one (1) left-turn lane, one (1) through lane, and two (2) right-turn lanes
- Restripe/widen the SB approach, north leg, from one (1) left-turn lane, one (1) through lane, and one (1) right-turn lane to two (2) left-turn lanes, one (1) through lane, and one (1) shared through-right lane
- Restripe/widen the EB approach, west leg, from one (1) left-turn lane, one (1) through lane, and one (1) shared through-right lane to one (1) left-turn lane, two (2) through lanes, and one (1) right-turn lane
- Restripe/widen the WB approach, east leg, from one (1) left-turn lane, one (1) through lane, and one (1) shared through-right lane to two (2) left-turn lanes, one (1) through lane, and one (1) through-right lane

Cleveland Avenue/Avenue 15½ at SR 99 NB ramps

- Restripe/widen the EB approach, west leg, from one (1) left-turn lane and two (2) through lanes to two (2) left-turn lanes and two (2) through lanes
- Restripe/widen the NB approach, south leg, from one (1) left-turn lane, one (1) shared left-through lane, and one (1) right-turn lane to one (1) left-turn lane, one (1) shared left-through lane, and two (2) right-turn lanes

Cleveland Avenue/Avenue 15½ at SR 99 SB ramps

- Restripe/widen the SB approach, north leg, from one (1) shared left-through lane and one (1) right-turn lane to two (2) left-turn lanes and one (1) shared through-right lane

Avenue 15½ at Road 23

- Signalize the intersection

SR 145/Madera Avenue at SR 99 NB ramps

- Restripe/widen the SB approach, north leg, from one (1) through lane and one (1) shared through-right lane to two (2) through lanes and one (1) right-turn lane
- Restripe/widen the WB approach, east leg, from one (1) left-turn lane and one (1) shared through-right lane to two (2) left-turn lanes and one (1) shared through-right lane

Olive Avenue/Avenue 14/SR 99 SB on-ramp at SR 145

- Restripe/widen the NB approach, south leg, from two (2) left-turn lanes, one (1) through lane, and one (1) shared through-right lane, to dual (2) left-turn lanes, two (2) through lanes, and one (1) shared through-right lane
- Restripe/widen the SB approach, north leg, from one (1) shared left-through lane, one (1) through lane, and one (1) right-turn lane, to one (1) left-turn lane, two (2) through lanes, and one (1) right-turn lane
- Restripe/widen the EB approach, west leg, from one (1) left-turn lane, one (1) through lane and one (1) right-turn lane, to dual (2) left-turn lanes, one (1) through lane, one (1) shared through-right lane and one (1) right-turn lane

Olive Avenue/Avenue 14 at SR 99 SB off-ramp

- Restripe/widen the SB approach, north leg, from two (2) left-turn lanes and one (1) right-turn lane to one (1) left-turn lane, one (1) shared left-right-turn lane, and one (1) right-turn lane

Avenue 14 at Road 23

- Signalize the intersection
- Restripe/widen the SB approach, north leg, from one (1) shared left-through-right lane, to one (1) left-turn lane and one (1) shared through-right lane
- Restripe/widen the EB approach, west leg, from one (1) shared left-through-right lane, to one (1) left-turn lane and one (1) shared through-right lane

Avenue 12/Golden State Boulevard at SR 99 SB off ramps

- Widen the SB off-ramp to two (2) lanes with a SB auxiliary lane on SR 99

Avenue 12 at Golden State Boulevard

- Restripe/widen the SB approach, north leg, from a dual (2) left-turn lanes, one (1) through lane and one (1) right-turn lane, to three (3) left-turn lanes, and one (1) shared through-right lane
- Restripe/widen the WB approach, east leg, from one (1) left-turn lane, one (1) through lane, and one (1) shared through-right lane, to one (1) left-turn lane, three (3) through lanes, and one (1) right-turn lane

Avenue 12 at SR 99 NB ramps

- Restripe/widen the NB approach, south leg from a shared left-through lane and a separate right-turn lane, to dual (2) left-turn lanes, a shared through-right lane, and one (1) right-turn lane
- Restripe/widen the EB approach, west leg, from one (1) left-turn lane and two (2) through lanes to dual (2) left-turn lanes and three (3) through lanes
- Restripe/widen the WB approach, east leg, from two (2) through lanes and one (1) right-turn lane, to two (2) through lanes, one (1) shared through-right lane and one (1) right-turn lane

Two freeway segments and two intersections are still projected to operate below the adopted level of service standard even with the recommended 2010 and 2030 Alternative C improvements (although the project's contribution to these already unacceptable operations would be fully mitigated with the recommended improvements). The NB and SB SR-99 south of Avenue 17 freeway segments are projected to operate at LOS "E" and "F" respectively in the PM peak hour. Per discussions with Caltrans staff, SR-99 is only programmed for eight lanes for this segment. The Avenue 17 at SR-99 NB ramps and Avenue 17 at Golden State Boulevard intersections are still projected to operate at a LOS "F" in the PM peak hour. Per discussions with Caltrans staff, widening Avenue 17 to eight lanes is not recommended. However with implementation of above listed mitigation, these four locations in the 2030 Project scenario are projected to operate above the 2030 No Project measures of effectiveness (freeway density and intersection delay). Therefore, a significant impact would not result at these locations.

2030 – Alternative D*SR 145 at SR 41*

- Optimize the signal cycle length

SR 41 at Road 420 (Thornberry Road)

- Signalize the intersection

Construction Traffic

The following mitigation measures are recommended for Alternatives A, B, C, and D:

- A. A Traffic Management Plan (TMP) shall be prepared to identify which lanes require closure, where night construction is proposed, and other standards set forth in the Manual on Uniform Traffic Control Devices for Streets and Highways (US DOT FHWA, 2003). The TMP shall be submitted to each affected local jurisdiction and/or agency. Also prior to the finalization of construction plans, the Tribe shall work with emergency service providers to avoid restricting emergency response service. Police, fire, ambulance, and other emergency response providers shall be notified in advance of the construction schedule, exact location of construction activities,

duration of construction period, and any access restrictions that could impact emergency response services. Traffic Management Plans shall include details regarding emergency service coordination. Copies of the TMPs shall be provided to all affected emergency service providers.

- B. Importation of construction material shall be scheduled outside of the area wide commute peak hours.
- C. Where feasible, lane closures or obstructions associated with the construction of the project shall be limited to off-peak hours to reduce traffic congestion and delays.
- D. Prior to construction, the Tribe shall work to notify all potentially affected parties in the immediate vicinity of the North Fork, or the Madera sites, as appropriate. Notification shall include a construction schedule, location of construction activities, the duration of construction period, and alternative access provisions.
- E. Debris along construction vehicle routes shall be monitored daily during construction and the roadways cleaned as necessary.

LAND USE

The following mitigation measures are recommended for Alternatives A, B, and C:

- F. In order to reduce the amount of light that would otherwise escape from the Madera site, the Tribe shall provide nighttime lighting for the parking areas that shines only on the parking areas and not surrounding areas. This can be achieved by employing down pointing lighting fixtures and low-pressure sodium bulbs.
- G. The Tribe shall either maintain current aviation easements within Zones A, B1, and B2 on the Madera site or shall enter into an agreement with the City of Madera to allow for the actions contained in the current aviation easement. This will prevent impacts to human safety or to airport operations. The easement or agreement shall address:
 - a. Overflight: A right-of-way for free and unobstructed passage of aircraft through the airspace of the property at any altitude above a surface specified in the easement (set in accordance with Federal Aviation Regulations Part 77 and/or criteria for terminal instrument approaches).
 - b. Impacts: A right to subject the property to noise, vibration, fumes, dust, and fuel particle emissions associated with normal airport activity.

- c. Height Limits: A right to prohibit the construction or growth of any structure, tree, or other object that would enter the acquired airspace.
 - d. Access and Abatement: A right-of-entry onto the property, with appropriate advance notice, for the purpose of removing, marking, or lighting any structure or other object that enters the acquired airspace.
 - e. Other Restrictions: A right to prohibit electrical interference, glare, misleading light sources, visual impairments, and other hazards to aircraft from being created in the property.
- H. The Tribe shall submit a “Notice of Proposed Construction or Alteration” to the Federal Aviation Administration (FAA) due to the temporary use of a crane to construct the projects on the Madera site prior to construction. Cranes shall not operate unless the FAA determines that their operation will not cause a hazard to air navigation.

Adoption of the above mitigation will reduce the impacts of the alternatives on land use to a less than significant level.

The following mitigation measures are recommended to reduce light effects from Alternative D:

- I. In order to reduce the amount of light that would otherwise escape from the North Fork site, the Tribe shall provide nighttime lighting for the parking areas that shines only on the parking areas and not surrounding areas. This can be achieved by employing down pointing lighting fixtures and low-pressure sodium bulbs.

Adoption of the above mitigation will further reduce already less than significant land use effects.

AGRICULTURE

The following mitigation measure is recommended to reduce effects to agricultural land from for Alternatives A, B, and C:

- J. If feasible within the first year of operation, an agricultural conservation easement shall be purchased (either directly or through an organization or agency whose purpose includes the acquisition and stewardship of agricultural conservation easements) that is at least as large as the area of agricultural land converted on the Madera site (approximately 85 acres). At least a portion of the agricultural conservation easement site shall be designed as prime farmland, unique farmland, farmland of statewide importance, or farmland of local importance.

Adoption of the above mitigation will further reduce already less than significant effects to agriculture.

5.2.8 PUBLIC SERVICES

OFF-SITE WASTEWATER SERVICE

The following mitigation measure is recommended for Alternatives A, B and C if off-site wastewater service is utilized:

- A. The Tribe shall form an agreement with the City of Madera to pay the fair share cost of improvements and upgrades to connect to the City of Madera sewer line. The Tribe shall also pay the fair share cost of future expansion/improvements to increase wastewater capacity of the City of Madera wastewater treatment plant.

The following mitigation measure is recommended for Alternative D if off-site wastewater service is utilized:

- B. The Tribe shall form an agreement with the County of Madera to pay the fair share cost of improvements and upgrades to connect to the County of Madera sewer line. The Tribe shall also pay the fair share cost of future expansion/improvements to increase wastewater capacity of the County of Madera wastewater treatment plant.

Adoption of the above mitigation will reduce the impacts of the alternatives on off-site wastewater service to a less than significant level.

CONSTRUCTION-RELATED SOLID WASTE

The following mitigation measures are recommended for Alternatives A, B, C and D:

- C. Construction waste shall be recycled to the fullest extent practicable by diverting green waste and recyclable building materials from the solid waste stream.
- D. Environmentally preferable materials shall be acquired to the extent practical for construction of facilities.

Adoption of the above mitigation will further reduce less than significant construction-related solid waste impacts.

OPERATIONAL SOLID WASTE

The following mitigation measures are recommended for Alternatives A, B, C and D:

- E. Installation of a trash compactor for cardboard and paper products.

- F. Solid waste shall be recycled to the fullest extent practicable by diverting green waste and recyclable materials from the solid waste stream.
- G. Installation of recycling bins throughout the facilities for glass, cans and paper products.
- H. A solid waste management plan shall be adopted by the Tribe that addresses recycling and solid waste reduction on-site. The plan shall have a goal of at least 50% diversion of materials from disposal, which includes reduction, recycling, and reuse measures.

Adoption of the above mitigation will further reduce less than significant operational solid waste impacts of the alternatives.

PUBLIC HEALTH AND SAFETY

Law Enforcement

The following mitigation measure is recommended for Alternatives A, B, C, and D:

- I. The Tribe shall make one-time and annual payments to the City of Madera and Madera County as discussed previously under the mitigation measures for Socioeconomic Conditions, **Section 5.2.6**. These payments would fund increased demands on City and County law enforcement services.

Fire Protection / Emergency Medical Service

The following measure is recommended for Alternatives A, B, C and D:

- J. Any construction equipment that normally includes a spark arrester shall be equipped with an arrester in good working order. This includes, but is not limited to vehicles, heavy equipment, and chainsaws. During construction, staging areas, wilding areas, or areas slated for development using spark-producing equipment shall be cleared of dried vegetation or other materials that could serve as fire fuel. To the extent feasible, the contractor shall keep these areas clear of combustible materials in order to maintain a firebreak.

The following measure is recommended for Alternatives A, B, C and D:

- K. The Tribe shall make one-time and annual payments to the City of Madera and Madera County as discussed above under the mitigation measures for Socioeconomic Conditions, **Section 5.2.6**. These payments would fund increased demands on City and County fire protection and emergency medical services.

Food and Water Safety

The following measures are recommended for Alternative C:

- L. The Tribe shall adopt and comply with standards no less stringent than state public health standards for food and beverage handling.
- M. The Tribe shall allow inspection of food and beverage services by state or county health inspectors, during normal hours of operation, to assess compliance with these standards, unless inspections are routinely made by an agency of the United States government to ensure compliance with equivalent standards of the United States Public Health Service.

Adoption of the above mitigation will reduce the impacts of the alternatives on public health and safety to a less than significant level.

SCHOOLS

The following measure is recommended for Alternatives A, B, C and D:

- N. The Tribe shall make annual payments to Madera County as discussed previously under the mitigation measures for Socioeconomic Conditions, **Section 5.2.6**. These payments would fund increased demands on County educational services.

Adoption of the above mitigation will reduce the impacts of the alternatives on schools to a less than significant level.

5.2.9 OTHER VALUES

NOISE

Construction Noise Consequences

The following measure is recommended for Alternatives A, B, C, and D:

- A. Where feasible, construction activities shall be restricted to weekdays and normal daytime hours (7:00 a.m. to 7:00 p.m.).

Mechanical Equipment Noise Consequences

The following measure is recommended for Alternatives A, B, C, and D:

- B. All mechanical equipment shall be designed, installed, and screened where feasible, so as to generate average noise levels of 52 dBA or less at the property lines of existing sensitive receptors. This sound level reduction can be achieved through the use of sound walls and berms,

noise attenuating building materials, and vegetative screening as well as through regular monitoring of noise generating equipment.

Adoption of the above mitigation will reduce the impacts of the alternatives on noise to a less than significant level.

HAZARDOUS MATERIALS

The following measures are recommended for Alternatives A, B, C, and D:

- C. In the event that contaminated soil and/or groundwater are encountered during construction related earth-moving activities, all work shall be halted until a professional hazardous materials specialist or a qualified individual can assess the extent of contamination. If contamination is determined to exceed USEPA preliminary remediation goals for residential land use, representatives of the Tribe shall consult with USEPA and BIA to determine the appropriate course of action, including the development of a Sampling Plan and Remediation Plan if necessary.
- D. In the event that suspected hazardous materials are encountered during construction-related earth-moving activities, all work shall be halted until a professional hazardous materials specialist or an equivalent qualified individual can identify the material. If the material is determined, by USEPA standards, to be hazardous to human health and welfare, a representative from the Tribe shall meet with USEPA and BIA to determine the appropriate course of action, including the appropriate disposal of the material according to State and Federal regulations.
- E. To reduce the potential for accidental releases, fuel, oil, and hydraulic fluids shall be transferred directly from a service truck to construction equipment tanks and shall not otherwise be stored on-site. Paint, thinner, solvents, cleaners, sealants, and lubricants used during construction shall be stored in a locked utility building, handled per the manufacturers' directions, and replenished as needed. These materials will be stored at least one foot above the 100-year flood zone in water tight containers away from areas exposed to rain water, surface water, and groundwater.
- F. Personnel shall follow written standard operating procedures (SOPs) for filling and servicing construction equipment, maintenance vehicles, and casino emergency generators. The SOPs, which are designed to reduce the potential for incidents involving hazardous materials shall include the following:
 - a. Refueling shall be conducted only with approved pumps, hoses, and nozzles.
 - b. Catch-pans shall be placed under equipment to catch potential spills during servicing.
 - c. All disconnected hoses shall be placed in containers to collect residual fuel from the hose.

- d. Vehicle engines shall be shut down during refueling.
 - e. No smoking, open flames, or welding shall be allowed in refueling or service areas.
 - f. Refueling shall be performed away from bodies of water to prevent contamination of water in the event of a leak or spill.
 - g. Service trucks shall be provided with fire extinguishers and spill containment equipment, such as absorbents.
 - h. Should a spill contaminate soil, the soil shall be put into containers and disposed of in accordance with local, state, and federal regulations.
 - i. All containers used to store hazardous materials shall be inspected at least once per week for signs of leaking or failure. All maintenance and refueling areas shall be inspected monthly. Results of inspections shall be recorded in a logbook that would be maintained on-site.
- G. The amount of hazardous materials used in project construction and operation shall be consistently kept at the lowest volumes needed. Project managers shall ensure the lowest volumes are maintained and that their uses are documented to ensure excessive volumes are not being applied as part of the overall hazardous materials and hazardous waste minimization program that would be developed for the project (see below).
- H. The least toxic material capable of achieving the intended result shall consistently be used to the extent practicable.
- I. A hazardous materials and hazardous waste minimization program shall be developed, implemented, and reviewed annually by the Tribe to determine if additional opportunities for hazardous materials and hazardous waste minimization are feasible, for both project construction and operation.
- J. The Tribe shall avoid and minimize the use of hazardous materials during the project's construction to the fullest extent practicable.
- K. The use of pesticides and toxic chemicals shall be minimized or less toxic alternatives shall be used to the greatest extent feasible in landscaping.
- L. If secondary diesel tanks are necessary for the emergency generators, the tanks shall have double walls with integrated leak detection systems. If a leak occurs within the inner tank, the outer tank shall contain the leak, while a pressure sensor signals the leak on the indicator panel of the generator unit. Security personnel and casino managers, trained in emergency response procedures, shall regularly monitor the generator units to ensure they are functioning as intended and no leaks are present.

- M. Excavation and proper disposal of stained soils shall occur on the Madera site as recommended in **Appendix P**.

The following measure is recommended for Alternative D:

- N. Before site development work begins groundwater and soil samples shall be collected in the area of the domestic well located on the site. Soil samples, groundwater samples, and water from the well shall be analyzed for total petroleum hydrocarbons and volatile organic compounds. In the event that contaminated soil and/or groundwater are encountered a professional hazardous materials specialist or a qualified individual shall assess the potential risk in conjunction with USEPA and BIA. The risk would be based on laboratory analysis of soils and/or groundwater if detectable levels are present. If risks are determined to be significant representatives of the Tribe shall consult with USEPA and BIA to determine the appropriate course of action, including the development of a Sampling Plan and Remediation Plan if necessary.

Adoption of the above mitigation will reduce the hazardous materials impacts of the alternatives to a less than significant level.

SECTION 6.0

CONSULTATION AND COORDINATION/ LIST OF PREPARERS

SECTION 6.0

CONSULTATION AND COORDINATION/LIST OF PREPARERS

6.1 LEAD AGENCY

Bureau of Indian Affairs

Pacific Region

Dale Morris, Regional Director

John Rydzik, Chief, Division of Environmental and Cultural Resources, Management and Safety

Patrick O'Mallan, Environmental Protection Specialist

Dan Hall, Regional Archaeologist

Jennifer Thomas, Associate Archaeologist

Kanu Patel, Roads Officer

6.2 COOPERATING AGENCIES

National Indian Gaming Commission

Brad Mehaffy, REM, NEPA Compliance Officer

Elaine Trimble-Saiz, Director of Contracts

U.S. Environmental Protection Agency

Region 9

Nova Blazej, Acting Manager, Environmental Review Office, Communities and Ecosystems Division

Karen Vitulano, CED-2

City of Madera

David Tooley, City Administrator

Ray Salazar, City Engineer

David Chumley, Public Works Director

Larry Red, Planning Director

Eddie Gonzales, Planner

Leon P. Lancaster, Community Development Director / City Engineer

Anthony Docto, Former Community Development Director / City Engineer

Marvin Ward, Public Works Department

California Department of Transportation

District 6

Moses Stites, Inter-Governmental Review Coordinator, Office of Transportation Planning

Michael Navarro, Inter-Governmental Review Coordinator, Office of Transportation
Planning

John Liu, Senior Transportation Engineer

Wilma Quan, Transportation Planner

Madera Irrigation District

Ronald H. Pistoresi, President, Board of Directors

Carl Janzen, Member, Board of Directors

Larry Howard, District Engineer

Charles Stringer, Renewable Resources Group, Inc.

Stephen Ottemoeller, Former General Manager

Dennis Savala

North Fork Rancheria of Mono Indians

Elaine Bethel Fink, Tribal Chair

6.3 OTHER FEDERAL AGENCIES AND INDIAN TRIBES

U.S. Fish and Wildlife Service

Sacramento Office

U.S. Army Corps of Engineers

Sacramento District

Laura Whitney, Project Manager

Kathy Norton

Federal Aviation Administration

Raymond Chiang, Supervisor, Civil Engineer

Picayune Rancheria of Chukchansi Indians

Joyce Burel, Chairperson

Natural Resources Conservation Service

Don Nielson

6.4 STATE AND LOCAL AGENCIES

County of Madera

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Becky Beavers, Planner
Tom Navarro, Planner
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Mike Salvador, Lieutenant and Administrative Information Officer, Sheriff's Department
Jeff Hartsuyker, Fire Marshall
David Jones, Operations Manager, Fairmead Landfill
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Douglas Papagni, Director, Department of Corrections
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Janice Melton, Mental Health Director, Behavioral Health Services Department
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Robert Townsend, Roads Commissioner
Mitch Hermaidan, Development Services Engineer, Roads Department
Dave Herb, Director, Resource Management Agency
Leonard Valenzuela, GIS Specialist
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Paul Helm, Division Chief

Madera Unified School District

Larry Risinger, Executive Officer

California Department of Water Resources

California Department of Fish and Game

California Department of Parks and Recreation – Office of Historic Preservation

San Joaquin Valley Unified Air Pollution Control District

Dave Mitchell, Planning Manager

Phil Jay, District Counsel

6.5 PRIVATE ORGANIZATIONS AND UTILITIES

Madera County Farm Bureau

Julia Berry, Executive Director

Jason Baldwin

Rick Cousins

Pistoresi Ambulance

Monte Pistoresi, Owner

PG&E

Steve Barrow, Sr. New Business Representative

SBC

Marta Z. Olivo

Ponderosa Telephone Company

Todd Westfall, Planning Engineer

California Native Plant Society

Environmental Data Resources

6.6 ENVIRONMENTAL CONSULTANTS

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Project Manager: Chad Broussard

Technical Staff:

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Tim Armstrong
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WorleyParsons Komex

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VRPA Technologies, Inc.

Jason Ellard, Engineering Technician

SECTION 7.0

ACRONYMS USED IN THE EIS

SECTION 7.0

ACRONYMS USED IN THE EIS

AA	Alternative A
AB	Alternative B
AB	Assembly Bill
af	acre-feet
amsl	Above Mean Sea Level
AES	Analytical Environmental Services
AFP	American Forest Products
APN	Assessor's Parcel Number
AR	Agricultural Rural
ARE-20	Agricultural, Rural, Exclusive, Twenty Acre District
ARPA	Archaeological Resources Protection Act
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
bgs	below ground surface
BIA	Bureau of Indian Affairs
BOD	Biochemical Oxygen Demand
BMPs	best management practices
CA FID	California Facility Inventory Database
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCAA	California Clean Air Act
CDF	California Department of Forestry and Fire Protection
CDFG	California Department of Fish & Game
CDWR	California Division of Water Resources
CEQ	Council of Environmental Quality
CERCLIS	Comprehensive Environmental Response, Compensation & Liability Information System
CFR	Federal Code of Regulations
CHRIS	California Historical Resources Information System
CIWMB	California Integrated Waste Management Board
CRLF	California red-legged frog
CORTESE	State index of properties with hazardous waste
CPI	Consumer Price Index
CPSC	Consumer Product Safety Commission
CNDDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon Monoxide
CORRACTS	Corrective Action Report System
CNEL	Community Noise Equivalent Level
CRG	Commercial, Rural, General District
CRH	Commercial, Rural, Highway District
CTS	California Tiger Salamander

CVP	Central Valley Project
CWA	Clean Water Act
DA	District Attorney
DA	Diverse Agricultural District
dB	Decibel
dBA	A-weighted decibels
DEIR	Draft Environmental Impact Report
DEIS	Draft Environmental Impact Statement
DHS	California Department of Health Services
District	Madera County Maintenance District 8A
DOT	U.S. Department of Transportation
DPR	Department of Parks and Recreation
DTSC	California Department of Toxic Substances Control
EIS	Environmental Impact Statement
ESA	Phase I Environmental Site Assessments
EB	Eastbound
EDR	Environmental Data Resources, Inc.
EDU	equivalent dwelling units
ETS	environmental tobacco smoke
FAA	Federal Aviation Administration
F2	Floodplain Combining District
FDA	Food & Drug Administration
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FICON	Federal Interagency Commission on Noise
FID	Facilities Index Database
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FPPA	Farmland Protection Policy Act
FSZ	Farmland Security Zone
FTE	full-time equivalent employees
GAMAQI	Guide for Assessing and Mitigating Air Quality Impacts
GPA's	General Plan Amendments
gpm	Gallons per minute
HAZNET	Hazardous Waste Information System
HHWE	Household Hazardous Waste Element
HIST	Historical Underground Storage Tank
HUC	Hydrologic Unit Catalog
HUD	U.S. Department of Housing and Urban Development
HVAC	heating, ventilating, air conditioning
Hz	hertz
I & I	Infiltration and Inflow (IRWP replacement program for sanitary main lines and manholes)
IGRA	Indian Gaming Regulatory Act
IRWP	Incremental Recycled Water Program
ISA	International Society of Arboriculture
ITE	Institute of Transportation Engineers
kV	kilovolt
L _{dn}	Day-night average sound level

L _{eq}	Energy-averaged sound level
L _{max}	Maximum noise level
L ₅₀	The A-weighted noise levels that are exceeded 50% of the time during the measurement period.
LEA	Land Extensive Agriculture District
LLC	Limited Liability Corporation
LOS	Level of Service
LTF	Local Task Force
LUST	leaking underground storage tank
LU	Land Use (General Plan Element)
MBR	Immersed Membrane Bioreactor
MCDC	Madera County Department of Corrections
MCL	Maximum Containment Levels
MCLG	Maximum Containment Level Goals
MCTC	Madera County Transportation Commission
MID	Madera Irrigation District
MMI	Modified Mercalli Intensity
MOU	Memorandum of Understanding
MUSD	Madera Unified School District
mg	Million gallons
mgd	Million gallons per day
mph	miles per hour
NAC	Noise Abatement Criteria
NH ₄	Ammonium
NO ₃	Nitrate
NWI	National Wetland Inventory
LEA	Land Extensive Agricultural
LTS	Less Than Significant
MBTA	Migratory Bird Treaty Act
MCBHS	Madera County Behavioral Health Services
MCTC	Madera County Transportation Commission
mg/L	milligrams per liter
MID	Madera Irrigation District
mL	milliliters
MPN	most probable number
NAHC	Native American Heritage Commission
NAAQS	National ambient air quality standards
NASS	National Agriculture Statistical Service
NB	Northbound
NDFE	Non-Disposal Facility Element
NEPA	National Environmental Policy Act
NFRP	No Further Remedial Action Planned (archived CERCLIS sites)
NHPA	National Historic Preservation Act
NI	No Impact
NIGC	National Indian Gaming Commission
NOA	Notice of Availability
NOC	Notice of Correction
NOI	Notice of Intent
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides

NPDES	National Pollutant Discharge Elimination System
NPL	National Priority List
NRCS	Natural Resource Conservation Service
NRHP	Natural register of historical places
NTU	Nephelometric turbidity units
O ₃	Ozone
OS	Open Space (General Plan Element)
OSHA	Occupational Health and Safety Administration
PCD	Planned Commercial Development
PCP	pentachlorophenol
PG&E	Pacific Gas & Electric Company
PM	Particulate Matter
PM ₁₀	Particulate Matter (10 microns)
PM _{2.5}	Particulate Matter (2.5 microns)
PPM	Parts per million
PQ-8	Copper 8-quinolinolate
R	Range
RCRA	Resource Conservation and Recovery Act
RCRIS SQG	Resource Conservation and Recovery Information System Small Quantity Generator
RIMS II	Regional Input-Output Modeling System
RMDZ	Recycling Market Development Zone
ROG	Reactive organic gases
RTP	Regional Transportation Plan
RV	Recreational Vehicle
RWQCB	Central Valley Regional Water Quality Control Board
S	Significant
SANDAG	San Diego Area Association of Governments
SB	Southbound
SBC	SBC Communications, Inc.
SDWA	Safe Drinking Water Act
SEV	State Equalized (land) Valuation
sf	square feet
SHPO	California State Historic Preservation Office
SIP	State implementation plan
SJV	San Joaquin Valley
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO ₂	Sulfur Dioxide
SPL	State equivalent priority
SPT	Standard Penetration Test
SQG	small quantity generators
SRCD	Scenic Resources Combining District
SR	State Route
SRRE	Source Reduction and Recycling Element
SSJVIC	Southern San Joaquin Valley Information Center
SU	Significant Unavoidable
SWLF	Permitted as solid waste landfills, incinerators or transfer stations
SWPPP	Stormwater Pollution Prevention Plan
T	Township

TAZ	Traffic Analysis Zone
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
TPHg	total petroleum hydrocarbons-gasoline
TPHd	total petroleum hydrocarbons- diesel
TRIS	Toxic Release Inventory Database
TSS	total suspended solids
UBC	Uniform Building Code
URBEMIS	Urban Emissions Model
UCMP	University of California Museum of Paleontology
UIC	Underground Injection Control
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USDI	United States Department of the Interior
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
UV	ultraviolet light
VCP	Voluntary Cleanup Program
VELB	Valley elderberry longhorn beetle
VOC	Volatile Organic Compounds
WB	Westbound
WDS	Waste Discharge System
WRCC	Western Regional Climate Center
WWTP	Wastewater treatment plant
Z	Second Unit Exclusion Combining District

SECTION 8.0

REFERENCES

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