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Appendix A

Environmental Scoping

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Table

A-1	Summary of Written and E-mail Comments Received
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A.1 OVERVIEW

Scoping is the process required under the National Environmental Policy Act (NEPA) to provide a method for public and agency to comment on the potential environmental impacts of a proposed action and its alternatives. A sequence of steps and actions were completed for the scoping phase of the Folsom Dam Road Access Restriction Environmental Impact Statement (EIS), and a scoping report is available that summarizes the EIS process (see <http://www.usbr.gov/mp>). The following summarizes pertinent portions of the scoping report.

The U.S. Department of the Interior, Bureau of Reclamation (Reclamation) initiated the NEPA process by issuing a Notice of Intent (NOI) to prepare an EIS in March 2004. Following the publication of the NOI, Reclamation convened two public scoping open houses in May 2004 (May 26 in Sacramento and May 27 in Folsom) to inform interested groups and individuals about the Folsom Dam Road Access Restriction and to solicit their ideas and comments.

Comments were received by mail and e-mail and at each of the two public scoping meetings. Each of the comments was reviewed, and specific concerns and issues were identified and tabulated. Each time a comment addressed an identifiable concern or issue, it was added to the summary of comments. Similar comments, or comments that addressed similar issues, were combined. The resulting summary is provided in Section A.2, Table A-1.

During each of the two scoping meetings, concerns and comments were also noted on flip charts by either an individual or a member of the project team. Each of the issues noted on the flip charts was summarized, and again, similar concerns were grouped together for ease of reference and tabulation. Table A-1 in Section A.2 incorporates access restriction-related comments that were recorded on the flip charts.

Public notification of the preparation of the EIS and announcement of the scoping meetings was made in the NOI, a press release, and newspaper advertisements. Copies of these announcements are shown in the following pages.

The scoping meetings featured displays that gave an overview of the Folsom Dam Road Access Restriction and summarized security issues, the environmental review process, and environmental issues. Reclamation staff and their consultants were on hand to address questions and provide information. Handout-size copies of the displays were made available to attendees.

The notification advertisements ran in the following newspapers on Monday, May 24, 2004:

- *Sacramento Bee*
- *Folsom Telegraph*
- *El Dorado Telegraph*
- *Roseville Tribune*
- *Granite Bay Tribune*

Table A-1 in Section A.2 summarizes the scoping comments received. The NOI is provided in Section A.3.

A.2 SCOPING COMMENT SUMMARY

**Table A-1
Summary of Written and E-mail Comments Received**

Comment Summary	Total Number of Times Issue was Identified During Scoping	Comment Source		
		Email / mail-in	Sacramento Open House	Folsom Open House
SAFETY & SECURITY				
Allow limited access (at a minimum); Open Folsom Dam Road to commuters (autos, SUVs) during daylight rush hours and perhaps require special security or stickers displayed on vehicles. (A few suggested that people may be willing to pay a fee for a Fastrak-type of system, or the City may provide some security. Concerned citizens may also be willing to volunteer their time to provide security. The road closures could also vary based on varying water levels in the dam and the potential for downstream damage.)	85	48	4	33
If the security of Folsom Dam is at risk, it is unclear why the Folsom Dam Road is closed, but measures are not being taken to safeguard the dam from boat or air access, which seem to be higher-risk access points. (According to one commenter, new developments are also coming up in the area). Given the context, the rationale for road closure on the basis of security risk is not convincing. Not being able to understand why a selective action was taken to restrict dam access magnifies the local effects of road closure (i.e. traffic increase).	55	31		24
Road closure is a greater risk to physical and/or emotional public safety than the claims of terrorism concerns.	31	18		13
Hoover Dam is a larger dam with a road over it. Its road continues to be open to traffic, with some precautionary measures. Other landmarks used by vehicles such as the Golden Gate Bridge and Bay Bridge also remain open, although they appear to pose greater risks than Folsom Dam Road. Folsom Dam should use the precautionary measures in place at Hoover Dam as a guide and be open.	30	16	1	13
Re-open the road to pre-February 2003 conditions; select the No Action Alternative.	27	24		3
The road should not be permanently closed at least until a viable alternate transport route is designated and constructed – quickly.	22	9		13
Keep Folsom Dam Road closed permanently.	15	15		
Historically, it has been proven that even a large explosion directly on top of a concrete dam would not cause collapse. It is unclear why dam destruction is considered a potential effect of opening the road to traffic.	12	6		6
Re-open the road fully, but maintain patrols and other	10	7		3

Comment Summary	Total Number of Times Issue was Identified During Scoping	Comment Source		
		Email / mail-in	Sacramento Open House	Folsom Open House
precautionary measures, at least until a more thorough EIS is conducted, evaluating all alternatives carefully. As the permanent decision has implications for the entire region, the region should bear the responsibility and cost of the Bureau's actions.				
There is concern about the consequences of opening the road and it may have to remain permanently closed; the cost and devastation would be too great to risk re-opening. Better alternatives, such as building a new bridge or adding light rail or new bus routes, are needed to mitigate the effects.	7	7		
Provide information and a protection plan for residents potentially affected by dam destruction: identify evacuation routes, how high the water could get, and time it would take for inundation in the event of flood before reopening the road (possibly with utility bills). Potential threat of flooding from earth dam destruction should also be covered in the EIS.	5	1	2	2
While it would be nice to have the road open during peak, daylight hours, the possible dam destruction is a valid reason for great caution. But, the road could be opened to cyclists and pedestrians during daylight hours.	3	2		1
I do not believe that Folsom Dam Road was designed for the heavy traffic it was receiving before the road was closed. From a safety/design perspective, it should remain closed.	3	2		1
While a potential threat to Folsom Dam exists, the likelihood of dam destruction is remote. There are also more police officers in the area due to the proximity of the Folsom prison. The permanent closure of Folsom Dam Road is an unnecessary burden for citizens directly affected by the closure.	2	2		
It is perplexing as to why the Bureau of Reclamation assigns high risk to the dam as a potential terrorist target, while state homeland security does not.	1			1
TRAFFIC				
Open Folsom Dam Road (fully or partially) to alleviate inconveniences of traffic congestion. Commute time to and from work impose an economic cost (such as gasoline costs and lost work time). These should be quantified in the EIS.	59	44		15

Comment Summary	Total Number of Times Issue was Identified During Scoping	Comment Source		
		Email / mail-in	Sacramento Open House	Folsom Open House
Traffic impacts affect community activities, including schoolchildren and their teacher traveling to school/after-school activities, area residents going to church, making doctors appointments, or spending time with nearby friends and family (includes 20 letters submitted from a class of 3 rd graders).	41	41		
Traffic congestion has led to ancillary effects of dangerous driving (frustrated drivers / speeding), increased littering (particularly in residential areas), lost wages, increased gasoline consumption, higher risk of accidents, poorer emergency access for police and paramedics, and deteriorating roadways as traffic is diverted onto streets that were not designed for that capacity.	36	22		14
The Folsom Dam Road closure put thousands of cars per day onto residential / neighborhood streets, which in turn caused the city to barricade numerous streets to divert traffic - making matters still worse. (Folsom Blvd. and Bidwell are now being nicknamed 'parking lots'.)	25	13		12
Living on streets such as Cinnamon Circle, Randall St. or Cerrito Drive, it is impossible to get on Natoma Street to get out of Folsom. Natoma Street itself is very congested. Folsom-Auburn Rd. has also become extremely congested. These roads were previously easily accessible at any time of the day.	15	11		4
In the neighborhood street of Briggs Ranch Drive, the closure of Folsom Dam Road provides temporary reprieve from traffic that was previously almost unbearable. The present plan to expand the new bridge would once again increase the number of cars in the area and make traffic worse than it once had been.	4	3		1
The benefits of the new Natoma crossing are negated by the closure of the Folsom Dam Rd. People should be encouraged to use the crossing in lieu of the Rainbow Bridge.	3	1		2
The cumulative effect of road closure with continued growth and construction in town are likely to pose high risks. These impacts should be evaluated in the EIS.	2			2

Comment Summary	Total Number of Times Issue was Identified During Scoping	Comment Source		
		Email / mail-in	Sacramento Open House	Folsom Open House
BUSINESS / ECONOMIC IMPACTS				
Diversion of traffic, because of the Folsom Dam Road closure and the city’s reaction of barricading local streets, is slowly strangling business in Folsom – on Sutter St., for example. Businesses, including those that are large employers and have been part of the local community for a long time, are being forced to shut down or relocate. Many businesses have lost 20-30% in revenues. There is no compensation plan for businesses. Economic / business impacts should be quantified in the EIS. Mitigation should also be addressed.	46	21		25
Area residents are changing their shopping patterns; they are avoiding visiting and shopping in Folsom on the weekends or in the early evenings as far as possible.	23	19		4
Long-term impacts such as reduction in growth and lower home values are likely to result. Property owners are finding it harder to rent units.	12	6		6
Old town businesses would rather risk dam destruction, even though they may be in the immediate path of possible flood waters, than have the road permanently closed and their businesses devastated.	3	1		2
AIR QUALITY IMPACTS				
Congested traffic has caused deterioration of air quality in Folsom, particularly in residential neighborhoods and schools. Even the smell of exhaust is noticeable. Quality of life of residents is suffering.	21	12		9
NOISE IMPACTS				
Noise in residential neighborhoods is affecting communities.	5	1		4
RECREATIONAL IMPACTS				
Recreation access lost or reduced; a household of 3 in the Lakeside Mobile Home Park located on Folsom Dam Road used the road to go to Folsom and to fish on the other side of Folsom Lake for 30 years. Road closure affects ability to continue to do this.	2	2		
The road closure would impact recreational uses of the Lake State Recreational Area, the future use of Observation Point, and future plans for concrete barriers on the dams and dikes placed at the lake.	1	1		
View of the lake is now gone; to get the view, residents have to enter the parks and pay a user fee.	2	2		

Comment Summary	Total Number of Times Issue was Identified During Scoping	Comment Source		
		Email / mail-in	Sacramento Open House	Folsom Open House
OTHER				
People were commenting on their concerns with respect to the bridge project - those have been omitted.	9	7		2

A.3 NOTICE OF INTENT**NOTICE OF INTENT****4310-MN-P****DEPARTMENT OF THE INTERIOR**

Bureau of Reclamation

Folsom Dam Road, Folsom, California

AGENCY: Bureau of Reclamation, Interior.**ACTION:** Notice of Intent to prepare an Environmental Impact Statement (EIS).

SUMMARY: The Bureau of Reclamation (Reclamation) is planning to prepare an EIS for a proposed permanent restriction to public access to Folsom Dam. The Folsom Dam Road, which was closed indefinitely for security reasons on February 28, 2003, was closed to preserve and protect the core mission of the facility and for the ultimate safety of the public. The closure followed a series of security reviews, including a final review conducted by the Defense Threat Reduction Agency (DTRA) and subsequent full-scale analysis and evaluation of DTRA's recommendations by Reclamation and the Department of the Interior. The evaluation determined that uncontrolled access to Folsom Dam presents a clear security risk to the facility.

DATES: Reclamation will seek public input on alternatives, concerns, and issues to be addressed in the EIS through scoping meetings through scoping meetings in May. The schedule and locations of the scoping meetings are as follows:

- Wednesday, May 26, 2004, 4:30-7:00 p.m, Sacramento, CA
- Thursday, May 27, 2004, 4:30-7:00 p.m., Folsom, CA

Written comments on the scope of alternatives and impacts to be considered should be sent to Mr. Robert Schroeder at the below address by June 10, 2004.

ADDRESSES: The meeting locations are:

- Sacramento at the Library Galleria – West Meeting Room, 828 I Street
- Folsom at the Folsom Community Center – West Room, 52 Natoma Street

FOR FURTHER INFORMATION CONTACT: Mr. Robert Schroeder, Reclamation, 7794 Folsom Dam Road, Folsom, California 95630; telephone number (916) 989-7274.

SUPPLEMENTARY INFORMATION: Controlled access by authorized Government personnel is necessary to minimize the security risks and maximize the safety not only of Folsom Dam, but that of the entire Sacramento metropolitan population downstream of the Dam. Reclamation determined that that an EIS is needed to examine the effect of the road closure on the natural and human environment.

Alternatives to the proposed action of a permanent restriction to public access include ending the indefinite road closure at some as yet to be determined time, reopening the road on a partial basis, and a no action alternative which would reopen the road to the level of access in place

prior to the February 2003 indefinite closure. That level of access included restrictions such as closing the road overnight and allowing no trucks at any time.

If special assistance is required at the scoping meetings, contact Mr. Robert Schroeder, Reclamation, at (916) 989-7274. Please notify Mr. Schroeder as far in advance of the meetings as possible to enable Reclamation to secure the needed services. If a request cannot be honored, the requestor will be notified. A telephone device for the hearing impaired (TDD) is available at (916) 989-7285.

Our practice is to make comments, including names and home addresses of respondents, available for public review. Individual respondents may request that we withhold their home address from public disclosure, which we will honor to the extent allowable by law. There also may be circumstances in which we would withhold a respondent's identity from public disclosure, as allowable by law. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment. We will make all submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public disclosure in their entirety.

Dated: March 10, 2004.

Signed: /s/ Frank Michny.

Frank Michny

Regional Environmental Officer

Mid-Pacific Region

Appendix B
Technical Methods and Analysis: Transportation and Noise

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B-1	Functional Class and Level of Service Thresholds
B-2	Signalized Intersection Level of Service Criteria

This appendix includes information and methods used or applied to the technical analysis.

B.1 TRANSPORTATION

B.1.1 Technical Evaluation Criteria – Roadways and Intersections

The introduction of Section 3.1 summarizes the traffic study scenarios, analysis locations, and level of service (LOS) descriptions in the area of the Folsom Dam Road access restriction. The following describes the thresholds used to define levels of service.

The transportation analysis included both roadway segments and signalized intersections. Different methods were used to evaluate these roadway facilities. Roadway operations were evaluated on a daily basis. Intersection operations were evaluated during the peak commute periods with hourly volumes.

B.1.1.1 Roadway Segments

The roadway segments were evaluated by comparing daily traffic volumes to the daily LOS thresholds, based on the number of lanes and the facility type, as presented in Table B-1. These thresholds were calculated based on the *Highway Capacity Manual* (HCM) (Transportation Research Board 2000).

Table B-1
Functional Class and Level of Service Thresholds

Facility Type	Daily Traffic LOS Capacity Threshold (Total vehicles in both directions except where noted)				
	A	B	C	D	E
2-Lane Collector ¹	-	-	5,700	9,000	9,800
Minor 2-Lane Highway	900	2,000	6,800	14,100	17,400
Major 2-Lane Highway	1,200	2,900	7,900	16,000	20,500
4-Lane, Multilane Highway	10,700	17,600	25,300	32,800	36,500
2-Lane Arterial ¹	-	-	9,700	17,600	18,700
4-Lane Arterial, Undivided ¹	-	-	17,500	27,400	28,900
4-Lane Arterial, Divided ¹	-	-	19,200	35,400	37,400
6-Lane Arterial, Divided ¹	-	-	27,100	53,200	56,000
8-Lane Arterial, Divided ¹	-	-	37,200	71,100	74,700
2-Lane Freeway ²	11,100	20,100	28,800	35,700	40,100
2-Lane Freeway + Auxiliary Lane ²	14,100	25,500	36,400	44,900	50,350
3-Lane Freeway ²	17,000	30,800	44,000	54,100	60,600
3-Lane Freeway + Auxiliary Lane ²	20,100	36,400	51,800	63,500	71,000
4-Lane Freeway ²	23,200	42,000	59,500	72,800	81,400

LOS A and B are not achievable for collectors and arterials because they typically have closely spaced signalized intersections with relatively high cycle lengths (e.g., greater than 90 seconds).

LOS Capacity Threshold is for one direction.

Source: HCM (Transportation Research Board 2000); Fehr & Peers 2004.

B.1.1.2 Signalized Intersections

Service levels for signalized intersections are determined using the methodology from Chapter 16 of the 2000 HCM. This operations method uses various intersection characteristics (traffic volumes, lane geometry, and signal phasing) to estimate the control delay per vehicle in seconds. Signalized intersection LOS criteria are summarized in Table B-2. The Synchro 6.0 software program was used to conduct the calculations.

Table B-2
Signalized Intersection Level of Service Criteria

Level of Service	Control Delay per Vehicle¹ (Seconds)
A	≤10.0
B	>10.0 and ≤20.0
C	>20.0 and ≤35.0
D	>35.0 and ≤55.0
E	>55.0 and ≤80.0
F	>80.0

Control delay is the portion of the total delay attributed to signal operations and includes initial deceleration, queue move up time, stopped delay, and acceleration delay.

Source: HCM (Transportation Research Board 2000).

B.1.2 Traffic Volume Forecast Methodologies

The following memo describes the traffic volume forecast methodologies.



TECHNICAL MEMORANDUM

Date: June 17, 2004
To: Jane Bierstedt
Cc: Ron Milam
From: Tao "Anna" Luo, Billy Park

Subject: Folsom Dam Road Closure EIS – Traffic Volume Forecast Methodologies

1041-2048

This memorandum presents the traffic volume forecasting methodologies for the Folsom Dam Road Closure EIS project.

The traffic volume forecasts were generated using a modified version of the regional SACMET travel demand model (version 01). The SACMET model is maintained by the Sacramento Area Council of Governments (SACOG) and made available to consultants and member jurisdictions for applications such as the development of traffic volume forecasts for the Folsom Dam Road Closure EIS. Prior to using the model, modifications are necessary to accurately reflect the detailed land use and roadway network of a particular study area given the regional nature of the SACMET model.

The modifications made for the Folsom Dam Road Closure EIS study area are described below followed by a summary of the resulting model validation process. The model validation compares the traffic volume estimates for base year (2001) conditions from the modified SACMET model to 2001 traffic counts. The validation provides a measure of the model's accuracy and an indication of where potential adjustments to future year traffic volume forecasts may be necessary to account for deviations between the base year model estimates and existing traffic counts.

SACMET Model Modifications

The modifications to the model included land use updates to reflect recently approved projects and roadway network refinements to be consistent with field observations, the City of Folsom Capital Improvement Program (CIP), and Tier 1 roadway improvements contained in the 2025 Metropolitan Transportation Plan (MTP). A summary of the key modifications is provided below.

- Split Traffic Analysis Zones (TAZs) – The SACMET TAZs in the vicinity of the project area were split, where necessary, to increase the level of land use detail in the study area.
- Adjust Land Use – The SACMET land uses were modified based on a review of a detailed aerial photograph and field visits, approved development projects and their land use absorption level, and MTP 2025 development plans.

- Modify Roadway Networks – The SACMET roadway network was modified to include the proposed project, to match the existing and planned roadway alignments, and to maintain consistency with Tier 1 roadway improvements contained in the MTP.

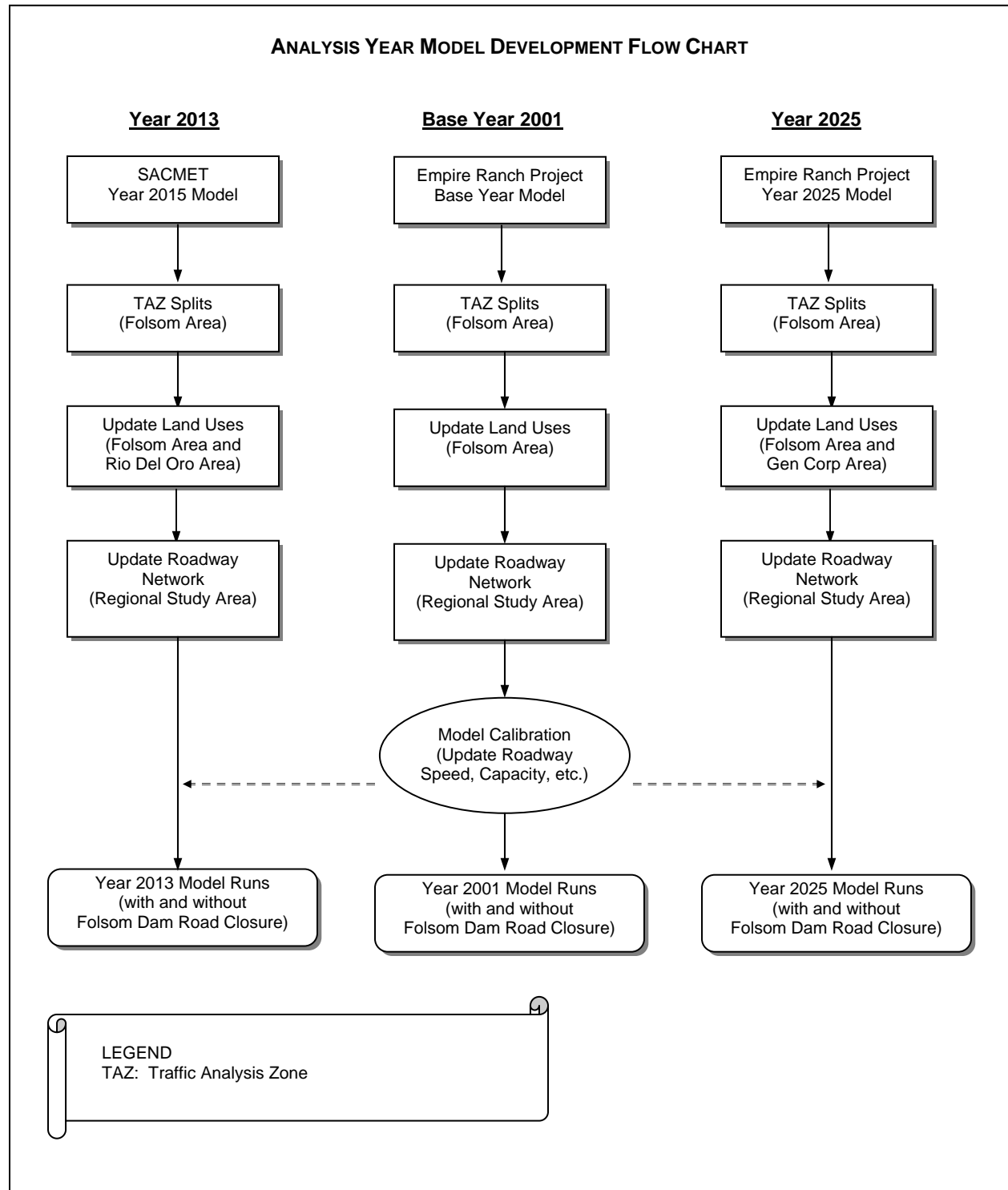
Table 1 summarizes the SACMET modifications for this study under 2001, 2013 and 2025 conditions. A 2013 version of the SACMET model was not available so the 2015 version was used for 2013 conditions. This approach minimizes the potential to underestimate 2013 traffic volumes.

TABLE 1	
SACMET MODEL MODIFICATIONS	
Year 2001 Model	
Base Model	SACMET Version 01 Year 2001 Model as modified for the U.S. 50/Empire Ranch Road Interchange Project Report/Environmental Document
TAZ Split	Split TAZs in Folsom Area
Roadway Modifications	<ol style="list-style-type: none"> 1. Detailed roadway network in Folsom Area 2. Update roadway network in regional study area based on Year 2001 aerial and field observations <ul style="list-style-type: none"> • Extend Barton Rd. to City limit • Upgrade E. Bidwell St. between Clarksville Rd. and Broadstone Pkwy to 6 lanes • Upgrade E. Bidwell St. between Iron Point Road to 5 lanes • Upgrade Blue Ravine Rd. between Folsom Blvd. and Prairie City Rd. to 6 lanes • Upgrade Iron Point Rd. between Folsom Blvd. and Black Diamond Dr. to 6 lanes • Upgrade Iron Point Road between Prairie City Rd. and Buckingham Wy. to 6 lanes • Change Hazel Avenue bridge from six lanes to four lanes 3. Update roadway network (i.e., speed, centroid connector) for model calibration and validation
Land Use Adjustment	Update land uses for Folsom Area based on Year 2001 aerial photography and field observations
Year 2013 Model	
Base Model	SACMET Version 01 Year 2015 Model
TAZ Split	Split TAZs in Folsom Area
Roadway Modifications	<ol style="list-style-type: none"> 1. Detailed roadway network in Folsom Area 2. Update roadway network in regional study area based on MTP 2025 Tier 1 improvements <ul style="list-style-type: none"> • Upgrade Folsom-Auburn Rd. between Folsom Dam Rd. and Beals Point Rd. to 4 lanes (2003) • Upgrade Hazel Ave. between Oak Ave. and Old Auburn Rd. to 4 lanes (2003) • Upgrade Folsom Blvd. between Sunrise Blvd. and Aerojet Rd. to 4-5 lanes (2004) • Extend light rail from Downtown Sacramento to Folsom (2005) • Extend Iron Point Rd. from Grover Rd. to El Dorado as 4 lanes (2005) • Upgrade Sibley St. between Blue Ravine Rd. and Glenn Dr. to 4 lanes (2005) • Upgrade Green Valley Rd. between San Francisco Dr. and County line to 4 lanes (2005) • Construct Silva Valley Pkwy. between Serrano and White Rock Rd. as 2 lanes (2005) • Upgrade Glenn Dr. between Sibley St. and Folsom Blvd. to 4 lanes (2006) • Upgrade Auburn-Folsom Rd. between Roseville City limit and Oak Hill Dr. to 4 lanes (2006) • Upgrade Auburn-Folsom Rd. between Douglas Blvd and Fuller Dr. to 4 lanes (2006) • Extend Empire Ranch Rd from Iron Point Rd. to County line as a lanes (2006) • Upgrade Madison Ave. between Sunrise Blvd. and Hazel Ave. to 6 lanes (2007) • Upgrade Greenback Ln. between Sunrise Blvd. and Hazel Ave. to 6 lanes (2007) • Upgrade E. Natoma St. between Fargo Wy. and Blue Ravine Rd. to 4 lanes (2007) • Construct Empire Ranch Rd./U.S. 50 as a four-lane interchange (2009) • Upgrade Green Valley Rd. between E. Natoma St. and County line to 4 lanes (2010) • Upgrade E. Bidwell St. between Oak Avenue Pkwy. and Blue Ravine Rd. to 6 lanes (2010) • Upgrade Auburn-Folsom Rd. between Fuller Dr. and Oak Hill Dr. to 4 lanes (2013) • Construct the Army Corps Bridge as a 2-lane bridge 3. Include roadway network updated used for the Year 2001 model calibration and validation

TABLE 1 SACMET MODEL MODIFICATIONS	
Land Use Adjustment	1. Updated land use for split TAZs in Folsom Area 2. Updated land use for Regional Center 3. Updated land use for Rio Del Oro
Year 2025 Model	
Base Model	SACMET Version 01 Year 2025 Model as modified for the U.S. 50/Empire Ranch Road Interchange Project Report/Environmental Document
TAZ Split	Split TAZs in Folsom Area
Roadway Modifications	1. Detailed roadway network in Folsom Area 2. Update roadway network in regional study area based on MTP 2025 Tier 1 improvements and CIP <ul style="list-style-type: none"> • Extend Broadstone Pkwy. from Golf Links Dr. to Empire Ranch Rd. as 4 lanes (2006) • Upgrade Oak Avenue Pkwy. between Folsom-Auburn Rd. and City limits to 6 lanes (CIP) • Construct American River Bridge as a 4-lane bridge (2010) • Upgrade Iron Point Rd. between Black Diamond Dr. and E. Bidwell St to 6 lanes (2020) • Upgrade Hazel Ave. between American River Bridge and Madison Ave. to 6 lanes (2008) • Upgrade Hazel Ave. between Madison Ave. and County line to 6 lanes (2015) • Construct a 4-lane road from Grant Line Rd./White Rock Rd. through Aerojet to U.S. 50 (2015) • Upgrade Latrobe Rd. between U.S. 50 and White Rock Rd. to 6 lanes (2018) • Upgrade El Dorado Hills Blvd. between Park Dr. and Serrano Pkwy. to 6 lanes (2021) • Upgrade El Dorado Hills Blvd. between Green Valley Rd. and Harvard Wy. to 4 lanes (2008) • Upgrade Green Valley Rd. between Francisco Dr. and Salmon Falls Rd. to 4 lanes (2015) • Upgrade Green Valley Rd. between Salmon Falls Rd. and Silva Valley Pkwy. to 4 lanes (2015) • Upgrade Green Valley Rd. between Silva Valley Pkwy and Deer Valley Rd. to 4 lanes (2016) • Extend Saratoga Wy. from Arrowhead Dr. to County line as 4 lanes (2018) • Upgrade Silva Valley Pkwy. between Harvard Wy. and Green Valley Rd. to 4 lanes (2020) • Upgrade Sophia Pkwy. between Green Valley Rd. and Russell Ranch Rd. to 4 lanes (2006) • Upgrade Sierra College Blvd. between Roseville City limits and County line to 6 lanes (2016) • Construct a 4-lane Oak Avenue Pkwy./U.S. 50 interchange (CIP) 3. Include roadway network updated used for the Year 2001 model calibration and validation
Land Use Adjustment	1. Updated land use for Regional Center 2. Updated land use for Gen Corp/Aerojet
Source: <i>Fehr & Peers</i> , 2004.	

The roadway network assumptions for each model year (i.e., 2001, 2013, and 2025) were submitted to City of Folsom for review prior to being used for the traffic forecasts.

Based on the land use and roadway network modifications discussed above, modified versions of the SACMET model were developed for 2001, 2013 and 2025 conditions for the project study area following the steps outlined in the following flow chart.



Model Validation

As shown in the flow chart above, Year 2001 model was calibrated and validated by comparing the model's outputs to Year 2001 daily traffic volumes at 10 roadway segments within the study area. Caltrans has established guidelines for determining whether a model is valid and acceptable for forecasting future year traffic volumes. This section describes the model's performance in comparison to the validation thresholds discussed in *Travel Forecasting Guidelines* (California Department of Transportation, November, 1992). The results of Year 2001 model validation for daily roadway volumes are shown in Table 2.

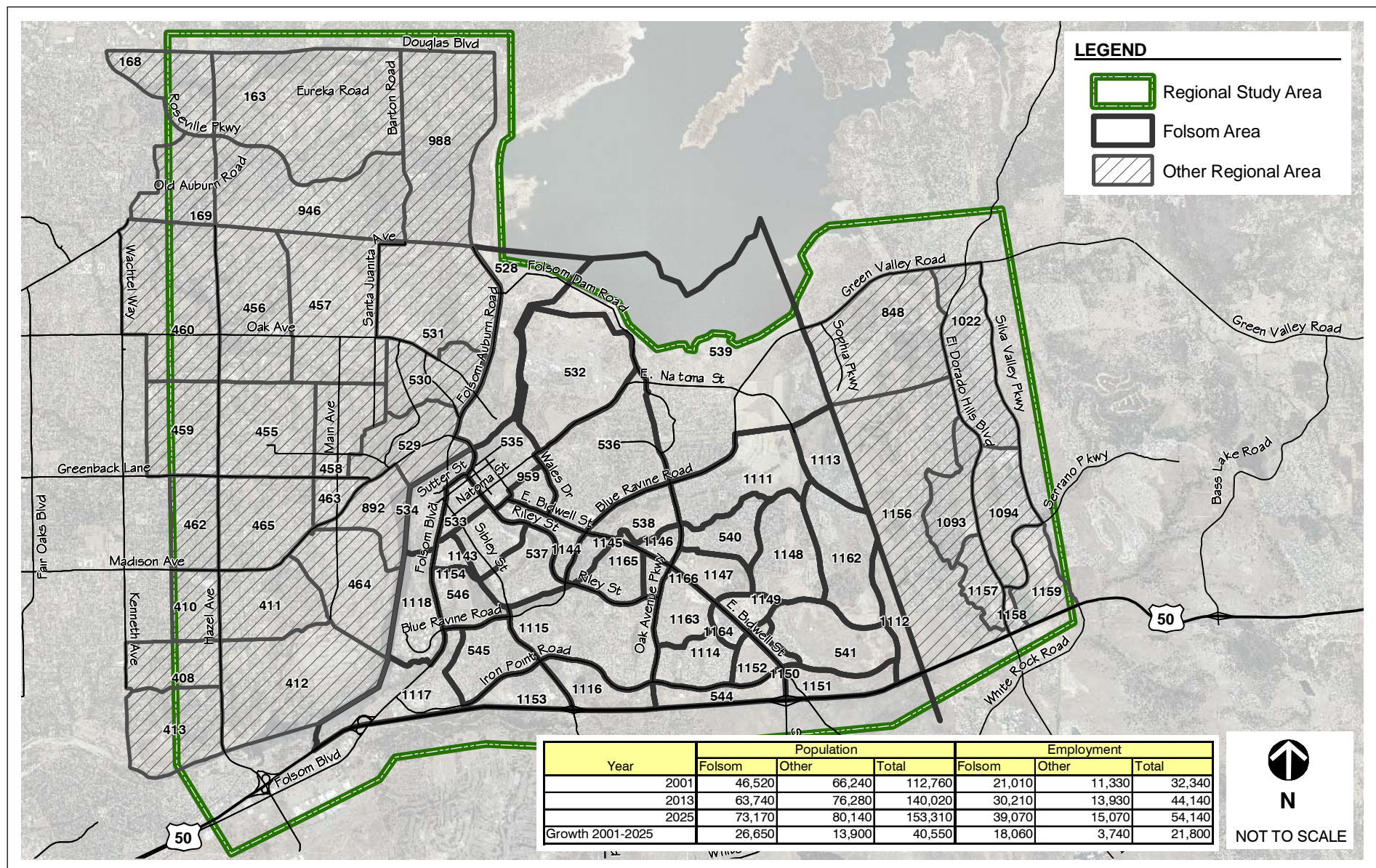
TABLE 2 RESULTS OF MODEL VALIDATION			
Period	Validation Item	Criteria for Acceptance ¹	Model Results
Daily	% of Links Within Caltrans Deviation Standard	At Least 75%	100%
	Correlation Coefficient	At Least 0.88	0.95
	Root Mean Square Error	Below 40%	14%
Note: <i>Travel Forecasting Guidelines</i> (California Department of Transportation, November, 1992) Source: <i>Fehr & Peers</i> , 2004.			

As shown in Table 2, the Year 2001 model validation results are within Caltrans' validation thresholds for acceptable performance. All the roadway network changes related with the Year 2001 model validation were used for Year 2013 and 2025 model development.

To provide an explanation for the growth in future traffic volumes within the study area, Figure 1 was prepared to summarize the projected population and employment growth for Folsom and remaining part of the Regional study area. As shown in the figure, Folsom is projected to add 17,220 new residents and 9,200 new jobs between Year 2001 and 2013. This amount of growth by 2013 represents a 37 percent increase in population and an 44 percent increase in employment. Between 2001 and 2025, Folsom will add 26,650 new residents and 18,060 new jobs. This amount of growth by 2025 represents a 57 percent increase in population and an 86 percent increase in employment.

The traffic volume forecasts that result from the growth described above were developed for 2013 and 2025 conditions under both with and without Folsom Dam Road Closure scenarios.

DRAFT



B.2 NOISE

To describe the existing day/night distribution of traffic noise in the area affected by the Folsom Dam Road Access Restriction, 24-hour continuous noise measurements were conducted at four locations in the City of Folsom:

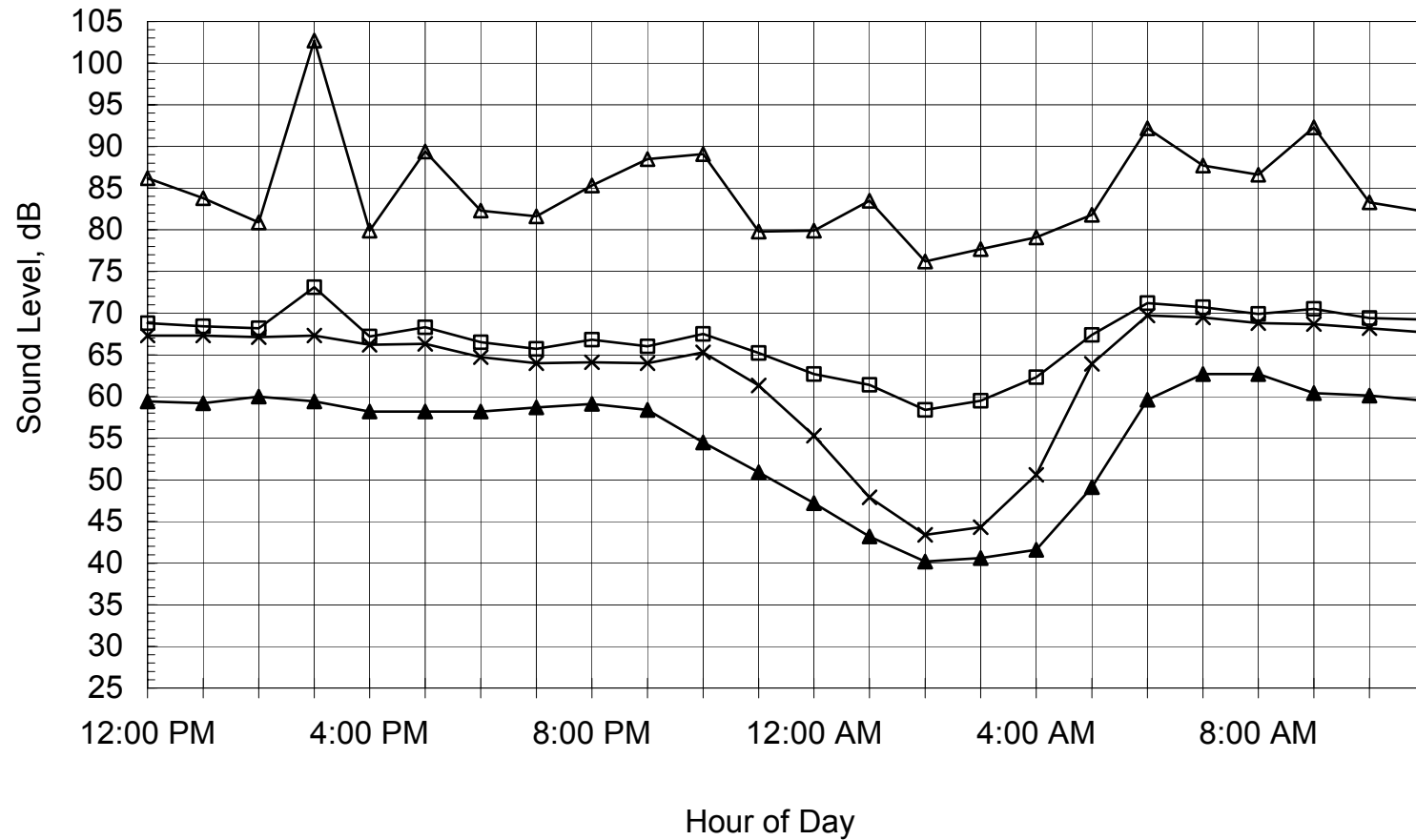
- 616 Figueroa Street
- 748 Hancock Drive
- 7013 Folsom-Auburn Road
- 817 Oakdale Street

These locations were selected to represent typical traffic noise conditions in the residential areas along the roadways potentially affected by the project. Noise measurements were conducted in terms of the hourly L_{eq} and other statistical descriptors. Figures B.2-1 through B.2-4 show the results of the hourly noise measurements in graphic form.

The continuous noise measurements showed that the highest observed hourly L_{eq} value was within approximately 1.5 dB of the L_{dn} value for the measurement periods. Thus, for this analysis, the calculated L_{dn} and design hour L_{eq} values for traffic noise exposures may be considered to be equal.

Figure B.2-1. Measured Hourly Noise Levels

616 Figueroa Street
July 15-16, 2004



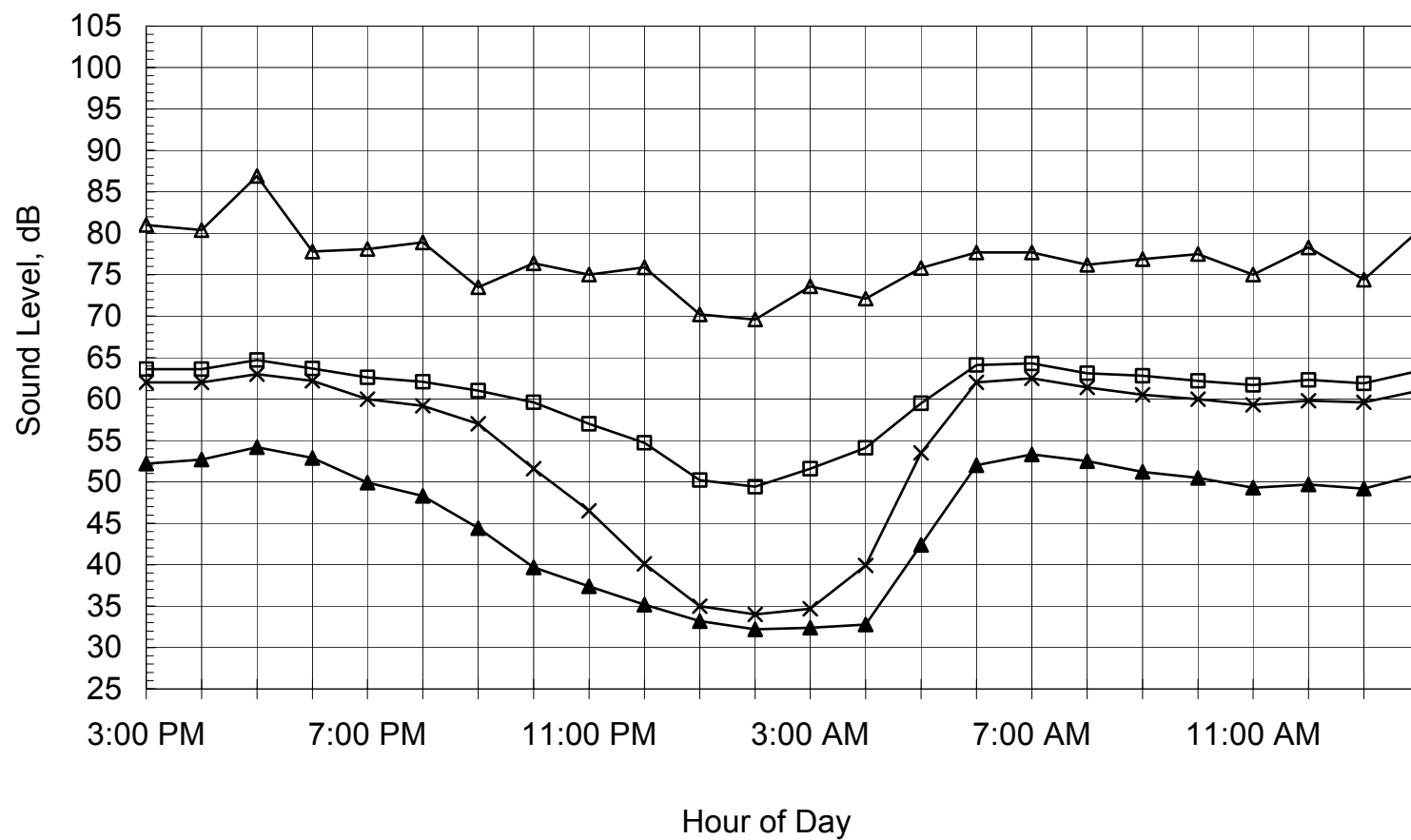
Ldn = 72.8 dB



Figure B.2-2. Measured Hourly Noise Levels

748 Hancock Drive

July 13-14, 2004



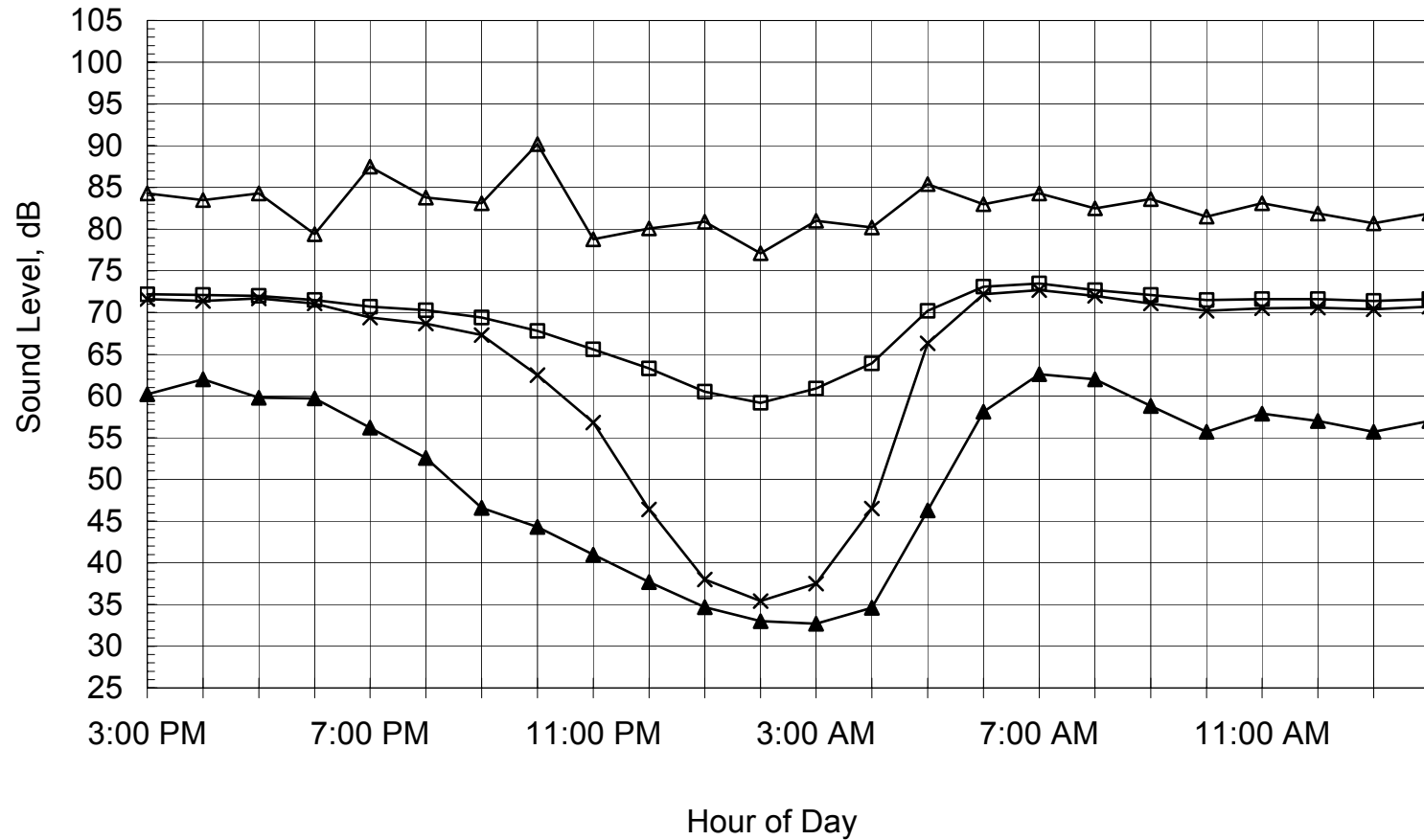
Ldn = 65.6 dB

—△— Lmax —□— Leq
—▲— L90 —×— L50

Figure B.2-3. Measured Hourly Noise Levels

7013 Folsom-Auburn Road

July 13-14, 2004



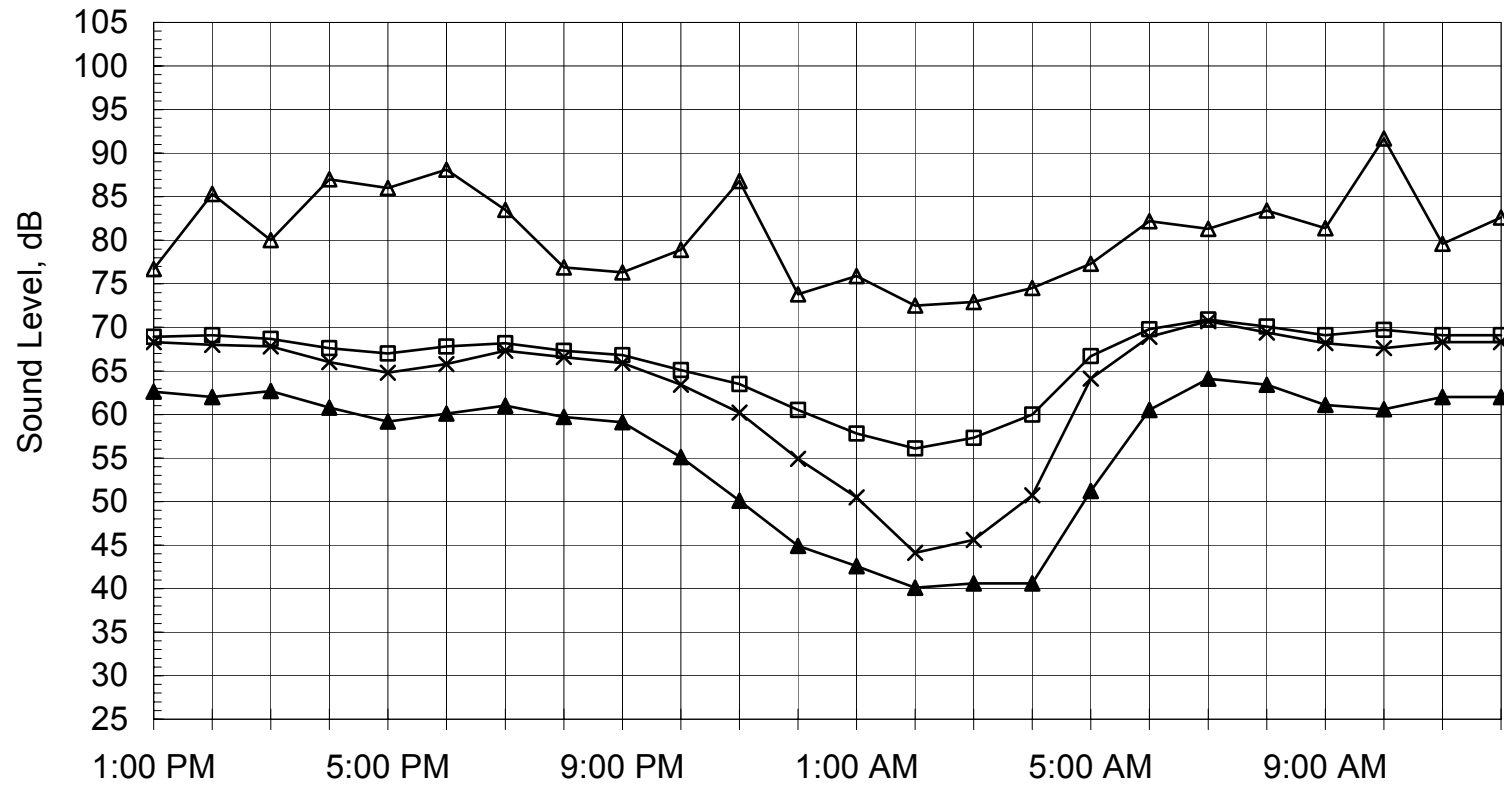
Ldn = 74.7 dB

—△— Lmax —□— Leq
—▲— L90 —×— L50

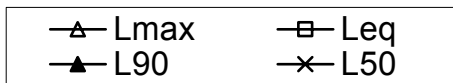
Figure B.2-4. Measured Hourly Noise Levels

817 Oakdale Street

July 15-16, 2004



Ldn = 71.6 dB



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Appendix C
Biological Data:
Species List

This appendix lists threatened and endangered species with a potential to occur within a 2-mile radius of the City of Folsom and a 10-mile radius of the City of Sacramento, as identified in U.S. Fish and Wildlife Service species lists and the California Natural Diversity Data Base. This list was used to identify species that could be of potential concern in implementing the proposed alternatives.

Table C-1
Special-Status Species That Potentially Occur in the Project Vicinity

Common Name	Scientific Name	Status			Associated Habitat/Flowering Period
		Federal	State	CNPS	
Listed, Proposed, and Candidate Species					
Birds					
Swainson’s hawk	<i>Buteo swainsoni</i>	None	T	NA	Nests in the Central Valley within riparian areas and oak woodlands as well as isolated roadside trees close to grassland or agricultural foraging habitat; winters in Mexico, Central and South America.
Western snowy plover	<i>Charadrius alexandrinus nivosus</i>	T	None	NA	Sandy coastal beaches, salt pans, coastal dredges spoils sites, dry salt ponds, salt pond levees
Mountain plover	<i>Charadrius montanus</i>	PT	None	NA	Winters primarily within the Central and Imperial Valleys of California within cultivated fields and grasslands.
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	None	E	NA	Nests in riparian forest, along broad, lower flood bottoms of large river systems.
White-tailed kite	<i>Elanus leucurus</i>	SC	FP	NA	Nests among dense-topped trees; forages in open grasslands, meadows or marshes
Little willow flycatcher	<i>Empidonax trailii brewsteri</i>	None	E	NA	Riparian habitat, dense willow thickets edging wet meadows or ponds (not specific to subspecies)
American peregrine falcon	<i>Falco peregrinus anatum</i>	D	E	NA	Cliff ledges, particularly near shores and marshes

Table C-1
Special-Status Species That Potentially Occur in the Project Vicinity

Common Name	Scientific Name	Status			Associated Habitat/Flowering Period
		Federal	State	CNPS	
Greater sandhill crane	<i>Grus canadensis tabida</i>	None	T FP	NA	Breeds in northern California plateau. Winters in low elevation wetlands and agricultural land
Bald eagle	<i>Haliaeetus leucocephalus</i>	PD	E FP	NA	Seacoast, islands, sea cliffs, large lakes, large rivers, coastal lagoons
Bank swallow	<i>Riparia riparia</i>	SC	T	NA	Riparian vegetation, vertical banks or cliffs near streams, rivers, lakes, and oceans
Reptiles					
Giant garter snake	<i>Thamnophis gigas</i>	T	T	NA	Freshwater marsh, streams, drainage canals, irrigation ditches
Amphibians					
California tiger salamander	<i>Ambystoma californiense</i>	PT	SC	NA	Annual grassland and valley-foothill hardwood habitats, vernal pools and other seasonal water sources adjacent to underground refuges.
California red-legged frog	<i>Rana aurora draytonii</i>	T	SC	NA	Lowlands and foothills with deep water remaining for at least 11 weeks; water source is usually associated with abundant emergent and/or shoreline vegetation
Fish					
Delta smelt	<i>Hypomesus transpacificus</i>	T	T	NA	Sacramento-San Joaquin Delta, Suisun Bay, San Pablo Bay, river channels and sloughs

Table C-1
Special-Status Species That Potentially Occur in the Project Vicinity

Common Name	Scientific Name	Status			Associated Habitat/Flowering Period
		Federal	State	CNPS	
Central Valley steelhead	<i>Oncorhynchus mykiss</i>	T	SC	NA	Delta, Suisun Bay and associated marshes, San Francisco Bay west to the Golden Gate bridge is designated as suitable habitat.
Sacramento River Winter-Run Chinook Salmon	<i>Oncorhynchus tshawytscha</i>	E	E	NA	Sacramento River from Keswick Dam (near Redding) south to Chipps Island, then west through Carquinez Strait, San Pablo Bay and San Francisco Bay
Central Valley Fall/Late-Fall Chinook Salmon	<i>Oncorhynchus tshawytscha</i>	C	SC	NA	Central Valley rivers and their tributaries, west to the Pacific Ocean
Sacramento splittail	<i>Pogonichthys macrolepidotus</i>	SC	SC	NA	Fresh water from lower Sacramento and San Joaquin rivers down to Montezuma Slough (may extend to the mouth of Napa River at San Pablo Bay)
Invertebrates					
Conservancy fairy shrimp	<i>Branchinecta conservatio</i>	E	None	NA	Found in large, turbid pools in the northern 2/3 or the Central Valley, inhabit astatic pools located in swales formed by old, braided alluvium, filled by winter/spring rains, until June.
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	T	None	NA	Vernal pools
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	T	None	NA	Elderberry shrubs

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Common Name	Scientific Name	Status			Associated Habitat/Flowering Period
		Federal	State	CNPS	
Delta green ground beetle	<i>Elaphrus viridis</i>	T	None	NA	Margins of vernal pools in grassland areas between Jepson prairie and Travis AFB.
Vernal pool tadpole shrimp	<i>Lepidurus packardi</i>	E	None	NA	Seasonal pools in unplowed grassland with old alluvial soils underlain by hardpan or in sandstone depressions
Plants					
Ione manzanita	<i>Arctostaphylos myrtifolia</i>	T	None	1B	Chaparral, cismontane woodland on acidic, Ione soil, clay or sandy; November-February
Stebbins morning-glory	<i>Calystegia stebbinsii</i>	E	E	1B	Chaparral, cismontane woodland; April-July
Pine Hill ceanothus	<i>Ceanothus roderickii</i>	E	R	1B	Chaparral, cismontane woodland, serpentinite or gabbroic; May-June
Soft bird's-beak	<i>Cordylanthus mollis ssp. mollis</i>	E	R	1B	Brackish marsh, often found with <i>Distichlis</i> , <i>Salicornia</i> , <i>Frankenia</i> , etc.; July-Sept
Ione buckwheat	<i>Eriogonum apricum var. apricum</i>	E	E	1B	Chaparral on Ione soil; July-October
Irish Hill buckwheat	<i>Eriogonum apricum var. prostratum</i>	E	E	1B	Chaparral on Ione soil; June-July
Pine Hill flannelbush	<i>Fremontodendron californicum ssp. decumbens</i>	E	R	NA	Chaparral, cismontane woodland, gabbroic or serpentinite, rocky; April-July

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Common Name	Scientific Name	Status			Associated Habitat/Flowering Period
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El Dorado bedstraw	<i>Galium californicum ssp. sierrae</i>	E	R	1B	Chaparral, cismontane woodland, lower montane coniferous forest, serpentinite or gabbroic; May-June
Boggs Lake hedge-hyssop	<i>Gratiola heterosepala</i>	None	E	1B	Marshes, swamps, vernal pools; April-August
Slender Orcutt grass	<i>Orcuttia tenuis</i>	T	E	1B	Vernal pools; May-October
Sacramento Orcutt grass	<i>Orcuttia viscida</i>	E	E	1B	Vernal pools; April-July
Layne's butterweed	<i>Senecio layneae</i>	T	R	1B	Chaparral, cismontane woodland, serpentinite or gabbroic, rocky; April-July
Other Special-Status Species					
Mammals					
Pacific western big-eared bat	<i>Corynorhinus townsendii townsendii</i>	SC	SC	NA	Humid coastal regions; roosts include caves, mines, and buildings
Spotted bat	<i>Euderma maculatum</i>	SC	SC	NA	Arid deserts and grasslands through mixed conifer forests, roosts in rock crevices, occasionally caves and buildings
Greater western mastiff bat	<i>Eumops perotis californicus</i>	SC	SC	NA	chaparral-type areas with rock walls and low-growing vegetation, or trees
Small-footed myotis bat	<i>Myotis ciliolabrum</i>	SC	None	NA	Arid woody or brushy uplands, near water, west and east sides of Sierra Nevada

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Common Name	Scientific Name	Status			Associated Habitat/Flowering Period
		Federal	State	CNPS	
Long-eared myotis bat	<i>Myotis evotis</i>	SC	None	NA	Brush, woodland and forest habitats; widespread in California, but avoids the arid Central Valley and hot deserts.
Fringed myotis bat	<i>Myotis thysanodes</i>	SC	None	NA	Piñon-juniper forest, valley and foothill hardwood woodlands and hardwood-conifer forest
Long-legged myotis bat	<i>Myotis volans</i>	SC	None	NA	Woodlands, forests, chaparral, coastal scrub
Yuma myotis bat	<i>Myotis yumanensis</i>	SC	SC	NA	Open forests and woodlands near water
San Joaquin pocket mouse	<i>Perognathus inornatus inornatus</i>	SC	None	NA	Grasslands and blue oak savannas
Birds					
Tricolored blackbird	<i>Agelaius tricolor</i>	SC	SC	NA	Open valleys and foothills in streamside timber, alfalfa and rice fields, blackberry thickets, tules and cattails on and around marshes and reservoirs
Western burrowing owl	<i>Athene cunicularia hypugaea</i>	SC	None	NA	Short-grass prairie and open space; associated with burrowing mammals such as ground squirrels
Oak titmouse	<i>Baeolophus inornatus</i>	SLC	None	NA	Oak and oak-pine, cismontane woodlands
Aleutian Canada goose	<i>Branta canadensis leucopareia</i>	D	None	NA	Do not nest in California. Winter habitat includes agricultural croplands and pastures.

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Common Name	Scientific Name	Status			Associated Habitat/Flowering Period
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Ferruginous hawk	<i>Buteo regalis</i>	SC	SC	NA	Undisturbed grassland and agricultural areas (winter)
Lawrence's goldfinch	<i>Carduelis lawrencei</i>	SC	None	NA	Valley foothill hardwood, valley foothill hardwood-conifer
Vaux's swift	<i>Chaetura vauxi</i>	SC	SC	NA	Redwood and Douglas fir forests with hollow trees and snags
Black swift	<i>Cypseloides niger</i>	SC	SC	NA	Mountains and coastal cliffs
Loggerhead shrike	<i>Lanius ludovicianus</i>	SC	SC	NA	Open canopied valley and foothill hardwood, riparian; urban areas
Lewis' woodpecker	<i>Melanerpes lewis</i>	SC	None	NA	Open pine-oak woodlands, coniferous forests, and riparian woodlands. Prefers burned and logged woodlands.
Long-billed curlew	<i>Numenius americanus</i>	SC	SC	NA	Intertidal mudflats of large estuaries, upland herbaceous areas, and cropland (winter)
Nuttall's woodpecker	<i>Picoides nuttallii</i>	SLC	None	NA	Riparian deciduous and oak woodlands
White-faced ibis	<i>Plegadis chihi</i>	SC	SC	NA	Nests in a few isolated areas within the Central Valley; places nests within dense stands of fresh water emergent vegetation near shallow water or muddy fields for foraging; winters mainly in the San Joaquin Valley and Imperial Valley.

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Common Name	Scientific Name	Status			Associated Habitat/Flowering Period
		Federal	State	CNPS	
Rufous hummingbird	<i>Selasphorus rufus</i>	SC	None	NA	Valley and foothill woodland, hardwood-conifer forest, riparian woodland, and chaparral during migration
California thrasher	<i>Toxostoma redivivum</i>	SC	None	NA	Chaparral vegetation along coast and foothills
Reptiles					
Northwestern pond turtle	<i>Clemmys marmorata marmorata</i>	SC	SC	NA	Permanent or nearly permanent water in a variety of habitats, need basking sites such as partially submerged logs or rocks and suitable upland habitat for egg laying.
California horned lizard	<i>Phrynosoma coronatum frontale</i>	SC	SC	NA	Inhabits open country, especially sandy areas, washes, flood plains and wind-blown deposits in a wide variety of habitats
Amphibians					
Foothill yellow-legged frog	<i>Rana boylei</i>	SC	SC	NA	Partly shaded, shallow streams and riffles with cobble size or larger rocky substrate; mostly in foothills
Western spadefoot	<i>Scaphiopus(=Spea) hammondi</i>	SC	SC	NA	Quiet streams and temporary pools in grassland, open chaparral, and pine-oak woodlands
Fish					
Green sturgeon	<i>Acipenser medirostris</i>	SC	SC	NA	Rivers and estuaries

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River lamprey	<i>Lampetra ayresi</i>	SC	SC	NA	San Joaquin-Sacramento Delta and northward, including the Sacramento River
Pacific lamprey	<i>Lampetra tridentata</i>	SC	None	NA	Estuaries, rivers and creeks with fine gravel substrates
Longfin smelt	<i>Spirinchus thaleichthys</i>	SC	SC	NA	Moderately saline estuaries and lower reaches of rivers
Invertebrates					
Midvalley fairy shrimp	<i>Branchinecta mesovallensis</i>	SC	None	NA	Vernal pools in grasslands in Sacramento, Solano, Contra Costa, Madera, Merced and Fresno Counties
California linderiella	<i>Linderiella occidentalis</i>	SC	None	NA	Vernal pools
South Forks ground beetle	<i>Nebria darlingtoni</i>	SC	None	NA	Riverine shoreline habitat associated with the south fork of the American River, under rocks along the margins of cool streams.
Plants					
Big-scale balsamroot	<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	None	None	1B	Valley and foothill grassland, chaparral, cismontane woodland/ sometimes serpentine; March-June
Red Hills soaproot	<i>Chlorogalum grandiflorum</i>	SC	None	1B	Chaparral, cismontane woodland, lower montane coniferous forest, serpentinite or gabbroic; May-June
Brandegee's clarkia	<i>Clarkia biloba</i> ssp. <i>brandegeae</i>	SLC	None	1B	Chaparral, cismontane woodland, lower montane coniferous forest, serpentinite or gabbroic; May-July

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Common Name	Scientific Name	Status			Associated Habitat/Flowering Period
		Federal	State	CNPS	
Tuolumne coyote-thistle	<i>Eryngium pinnatisectum</i>	SC	None	1B	Cismontane woodland, lower montane coniferous forest, vernal pools, mesic; June-August
Amador (Bisbee Peak) rush-rose	<i>Helianthemum suffrutescens</i>	SLC	None	3	Chaparral, often serpentinite, gabbroic, or Ione soil; April-June
Ahart's dwarf rush	<i>Juncus leiospermus</i> var. <i>ahartii</i>	SC	None	1B	Margins of vernal pools in valley and foothill grassland; March-May
Legenere	<i>Legenere limosa</i>	SC	None	1B	Vernal pools; April-June
Pincushion navarretia	<i>Navarretia myersii</i> spp. <i>myersii</i>	SC	None	1B	Vernal pools; April-May
Sanford's arrowhead	<i>Sagittaria sanfordii</i>	SC	None	1B	Freshwater marsh; May-Oct
El dorado mule-ears	<i>Wyethia reticulata</i>	SC	None	1B	Chaparral, cismontane woodland, lower montane coniferous forest, clay or gabbroic; May-July

Notes:

Federal Status Codes:

- E = Endangered. Species in danger of extinction throughout all or a significant portion of its range.
T = Threatened. Species likely to become endangered within the foreseeable future.
PE = Proposed for listing as endangered.
PT = Proposed for listing as threatened.
PD = Proposed for delisting.
C = Candidate for listing.
SC = USFWS Species of Concern (an informal designation)

California Status Codes:

- E = Endangered. Species whose continued existence in California is in jeopardy
T = Threatened. Species likely to become endangered within the foreseeable future.
R = Rare. Plant species, although not presently threatened with extinction, that may become endangered in the foreseeable future.
FP = Fully protected under the California Fish and Game Code
SC = Species of Special Concern

California Native Plant Society Status Codes (CNPS 2001):

- 1A = Plants presumed extinct in California
1B = Plants that are rare, threatened or endangered in California and elsewhere.
2 = Plants that are rare, threatened or endangered in California, but more common elsewhere.
3 = Plants about which more information is needed.
4 = Plants of limited distribution.

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Appendix D
(Confidential; Submitted Under Separate Cover)
Environmental Consequences of Dam Failure