3.9 Transportation and Circulation

This section describes how the construction activities for the Folsom DS/FDR affect the area's transportation and circulation. This includes a description of the Folsom DS/FDR study area, the local and direct access routes identified to be used during construction, the existing bicycle facilities and transit resources. Furthermore, an accepted methodology has been utilized to analyze the traffic volumes on access routes as affected during construction for all alternatives. A number of mitigation measures are proposed to reduce impacts during construction. Appendix F includes multiple tables (Tables 3.9-22 to 3.9-85) that support the transportation and circulation analysis.

It is important to note that no permanent or long-term traffic volume increases or changes in traffic patterns are expected as a result of the Folsom DS/FDR alternatives. As such, any incremental transportation impacts associated with implementation of the Folsom DS/FDR are limited to the proposed construction years; hence, the focus of the analysis presented herein is on those impacts occurring from, and during, Folsom DS/FDR related construction activities.

3.9.1 Affected Environment/Existing Conditions

3.9.1.1 Area of Analysis

The Folsom DS/FDR study area includes roadways in the following jurisdictions:

- Counties: Yuba, Sacramento, Placer, and El Dorado.
- Communities: Cities of Folsom, Roseville, Lincoln, Rocklin, Wheatland and Marysville and Community of Granite Bay.

The Sacramento Area Council of Governments (SACOG) serves as the area Metropolitan Planning organization for the region. Local municipalities determine their own criteria for streets and roads while Caltrans, the California State Department of Transportation, oversees state highways.

The area is considered to be primarily suburban, low density development to the east of Sacramento. Transportation facilities and services include interstate and state highways, local roads and streets, local transit including local bus service and a light rail line from the City of Folsom to downtown Sacramento. Also, a number of bicycle paths/routes accompany major roads. Finally, a number of commuter bus services are provided within the counties and cities in the area.

Access to the proposed work sites is primarily restricted to the southwest region of Folsom Reservoir. Direct access to the Folsom Facility is limited to the routes described in Table 3.9-1.

Table 3.9-1 Direct Access to the Folsom Facility		
Direct Access Route	***Access Area***	***Facility/Structure***
Douglas Boulevard	Granite Bay	Dikes 1, 2, 3,
Auburn Folsom Road/Folsom-Auburn Road	Beal's Point	Dikes 4, 5, 6, Right Wing Dam (RWD)
Folsom Dam Road(1)	Main Concrete Dam	Folsom Dam
Natoma Street	Folsom Point	Left Wing Dam (LWD), Dike 7, Dike 8, MIAD
Green Valley Road	MIAD	MIAD

(1) Folsom Dam Road will only be used to access the Main Concrete Dam, and complete use of the roadway is not included in this analysis.

A multi-leveled approach has been applied to the Folsom DS/FDR to divide the evaluation of potential transportation impacts into two distinct areas of analysis:

- Local Access Routes
- Regional Access Routes

The local and regional access routes provide access to the Folsom DS/FDR features via the direct access routes shown in Table 3.9-1.

Figures 3.9-1 and 3.9-2 illustrate the regional and local routes, respectively, that are proposed to be used for providing access for materials and equipment related to construction of the alternatives. Figure 3.9-3 illustrates access routes available to Folsom DS/FDR construction personnel. A more detailed description of the selection of these routes is discussed below in Trip Generation and Trip Distribution. Access to the Direct Access Routes is provided via the local roadway network as illustrated in Table 3.9-2.

Table 3.9-2 provides a breakdown of the local access routes in terms of the names of the potentially affected roadways, the roadway segments of interest (i.e., limits of analysis), the city and county where the roadway is located, and finally the agency that has jurisdiction over each roadway segment. In addition, truck routes designated by California Department of Transportation (Caltrans) and/or transportation departments with jurisdiction have been highlighted. For the purposes of this analysis, Interstate 80 is considered the dividing line between local and regional access routes for the Folsom DS/FDR study area.

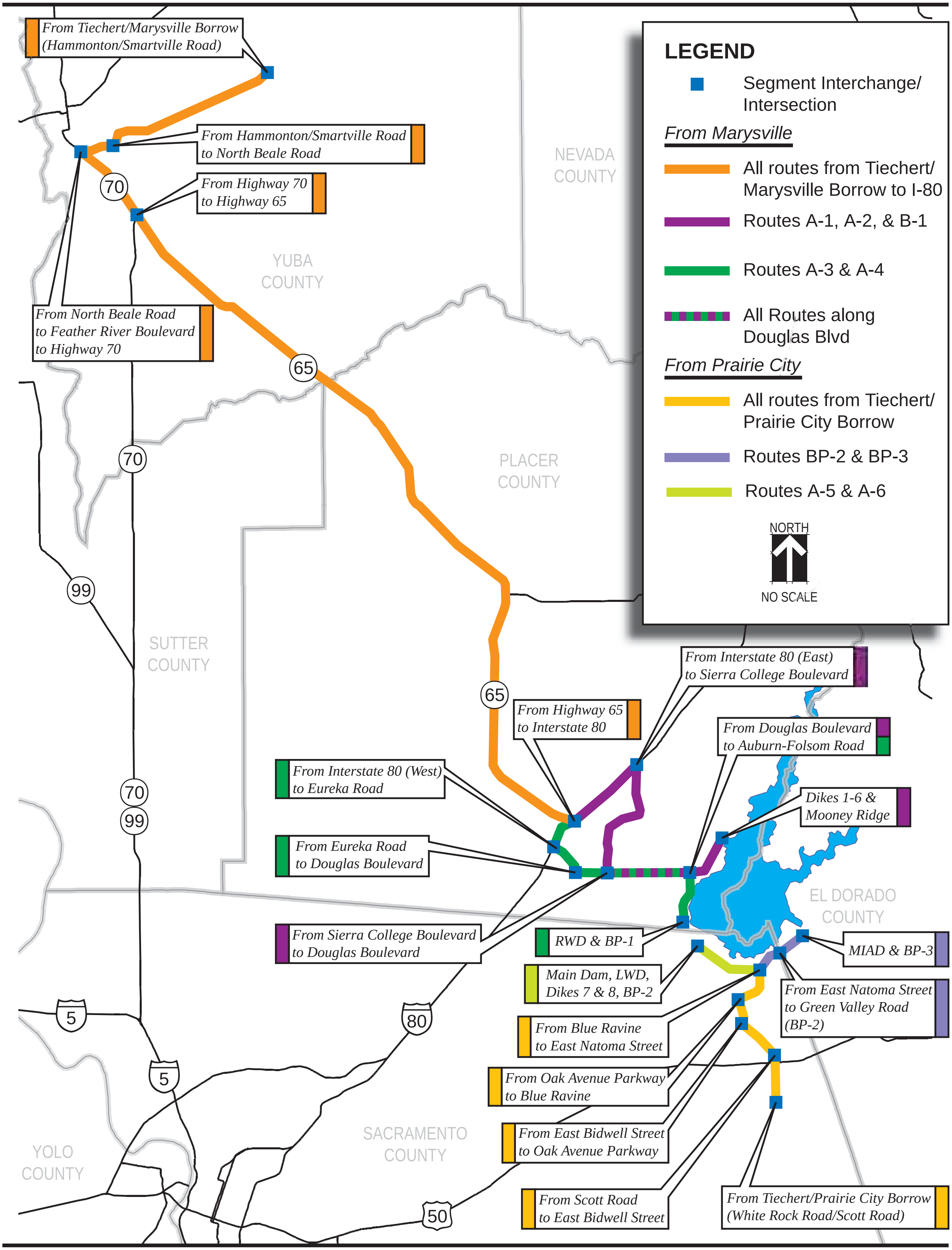

Figure 3.9-1
Regional Access Routes

CDM

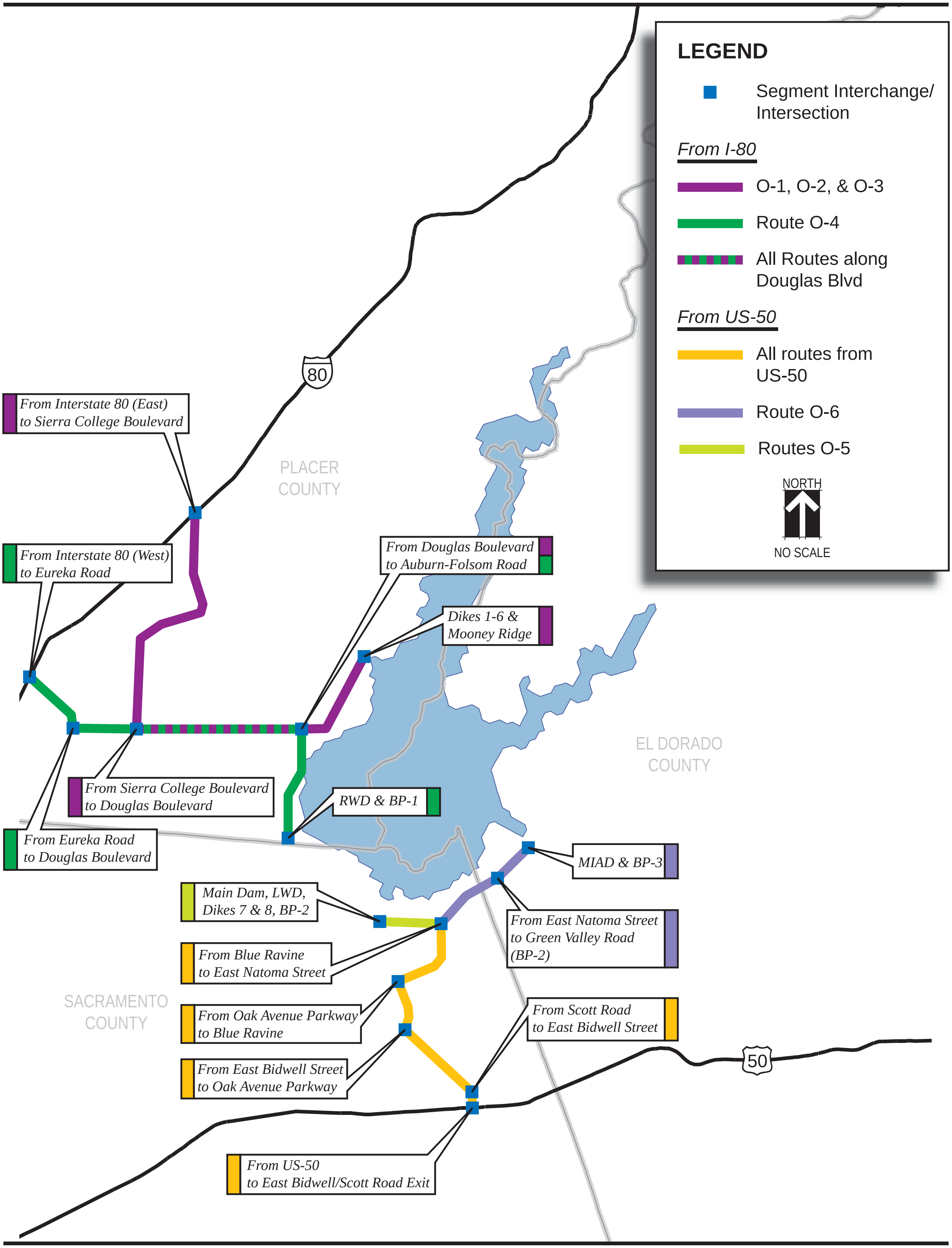

Figure 3.9-2
Local Access Routes

CDM

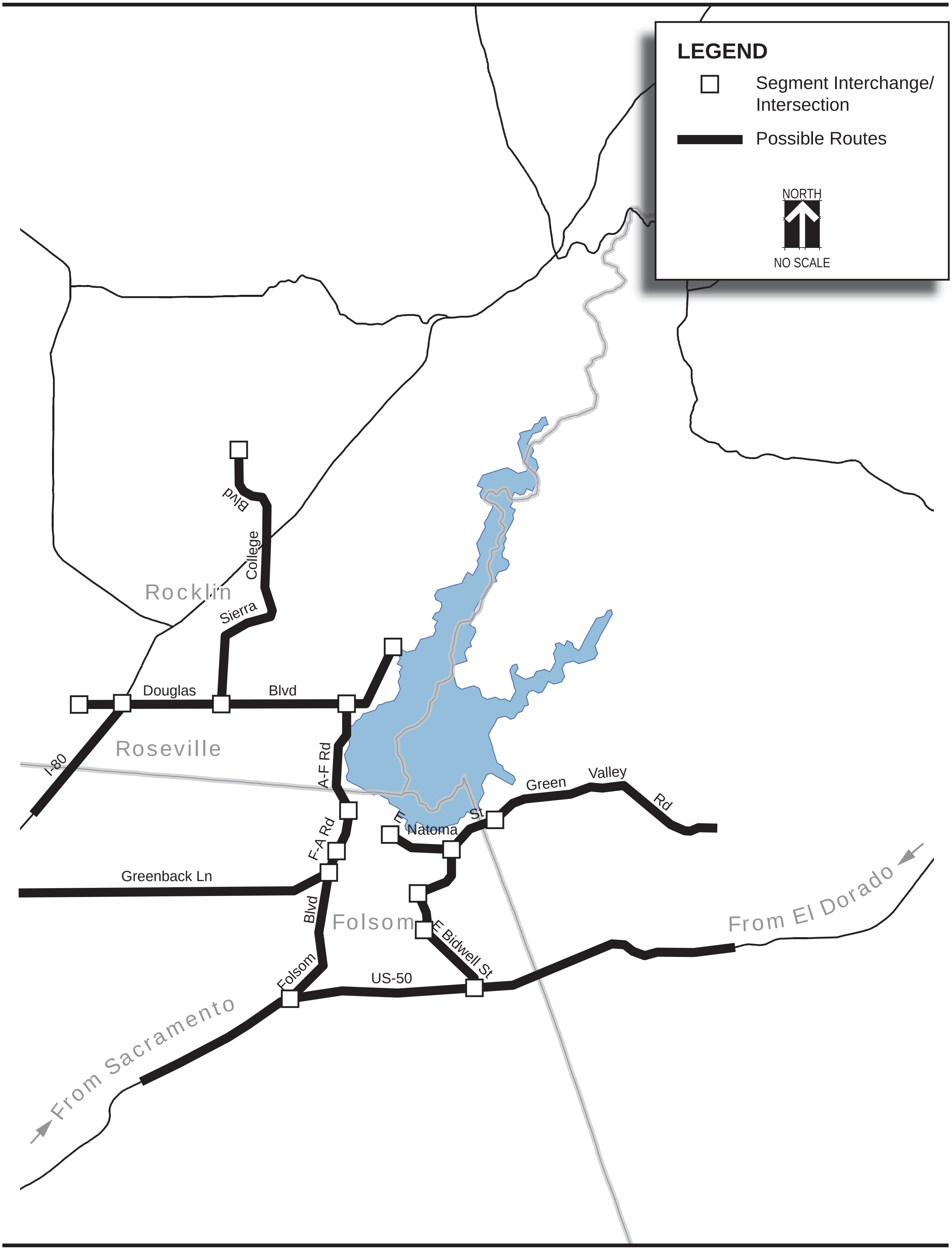

Figure 3.9-3
General Folsom DS/FDR Area Transportation Routes

CDM

Table 3.9-2
Local Access Routes

Roadway	***Segment Limits***	***City/Community***	***County***	***Jurisdiction***
Folsom Boulevard	from US 50 to A-F Road	City of Folsom	Sacramento County	City of Folsom
Auburn-Folsom (A-F) Road	from Folsom Boulevard to county line	City of Folsom	Sacramento County	City of Folsom
F-A Road	From county line to Douglas Boulevard	City of Roseville	Placer County	Placer County
Eureka Road	Interstate 80 to Douglas Boulevard	City of Roseville	Placer County	City of Roseville
Douglas Boulevard	Sierra College Boulevard to A-F Road	Granite Bay	Placer County	Placer County
Blue Ravine Road	Folsom Boulevard to Green Valley Road	City of Folsom	Sacramento County	City of Folsom
East Natoma Street	Folsom Boulevard to Green Valley Road	City of Folsom	Sacramento County	City of Folsom
Green Valley Road	Blue Ravine Road to County Line	City of Folsom	Sacramento County	City of Folsom
Green Valley Road	County Line to Sophia Parkway	Unincorporated El Dorado County	El Dorado County	El Dorado County
Oak Avenue Parkway	East Bidwell Street to Blue Ravine Road	City of Folsom	Sacramento County	City of Folsom
Sierra College Boulevard	Interstate 80 to Douglas Boulevard	City of Rocklin	Placer County	Placer County and Rocklin
Douglas Boulevard	Eureka Road to Sierra College Boulevard	City of Roseville	Placer County	City of Roseville
Eureka Road	Interstate 80 to Douglas Boulevard	City of Roseville	Placer County	City of Roseville
East Bidwell Street	US50 to Oak Avenue Parkway	City of Folsom	Sacramento County	City of Folsom
White Rock Road	Grant Line Road to Scott Road	Unincorporated Sacramento County	Sacramento County	Sacramento County
Scott Road	White Rock Road to Iron Point Road	Unincorporated Sacramento County	Sacramento County	Sacramento County
Sophia Parkway	County Line to Green Valley Road	Unincorporated El Dorado County	El Dorado County	El Dorado County

Roadway - CA Legal Route/Local Route
Roadway – Surface Transportation Assistance Act (STAA) Federal Route The STAA requires states to allow large trucks on identified access routes.

3.9.1.2 Regulatory Setting

As indicated above, the Folsom DS/FDR study area includes roadways in the Counties of Yuba, Sacramento, Placer, and El Dorado, and the Cities of Folsom, Roseville, Lincoln, Rocklin, Wheatland, and Marysville, and the Community of Granite Bay. The study area also includes roadways within the jurisdiction of Caltrans.

Each of these jurisdictions, with the exception of the City of Marysville, has adopted standards regarding the desired performance level for traffic conditions on the circulation system within its jurisdiction. A measure called "Level of Service" (LOS) is used to characterize traffic conditions. Progressively worsening traffic conditions are given the letter grades "A" through "F". While most motorists consider an "A", "B", "C" LOS as satisfactory, LOS "D" is considered marginally acceptable. Congestion and delay are considered unacceptable to most motorists and given the LOS "E" or "F" ratings. A more detailed explanation of LOS, and how it is determined, is provided later in Section 3.9.3.1. These LOS thresholds, reflected at the local jurisdiction level through the County and City General Plans, define the minimum levels of acceptable traffic conditions within the respective jurisdictions, typically LOS C or, in more urbanized areas, LOS D. Related to those LOS thresholds are additional thresholds used to determine where a change in traffic conditions, such as that associated with additional traffic from a new development project, would result in a significant impact to the local roadway system. Should a significant impact be identified, the formulation of mitigation measures for that impact is warranted. Table 3.9-3 presents the local and regional LOS standards and associated significance thresholds. These local significance thresholds were considered when developing significant thresholds for the CEQA impact analysis.

Table 3.9-3
Local and Regional LOS Standards and Significance Thresholds

Regulatory Agency	***Standards***	***Significance Thresholds***
Sacramento County	Rural collectors: LOS D Urban area roads: LOS E	*Roadways/Signalized Intersections*: A project is considered to have a significant effect if it would: • result in a roadway or a signalized intersection operating at an acceptable LOS to deteriorate to an unacceptable LOS; or • increase the volume to capacity (V/C) ratio by more than 0.05 at a roadway or at a signalized intersection that is operating at an unacceptable LOS without the project. *Unsignalized Intersections*: A project is considered to have a significant effect if it would: • result in an unsignalized intersection movement/approach operating at an acceptable LOS to deteriorate to an unacceptable LOS, and also cause the intersection to meet a traffic signal warrant; or • for an unsignalized intersection that meets a signal warrant, increase the delay by more than 5 seconds at a movement/approach that is operating at an unacceptable LOS without the project. *Freeway Ramps*: A project is considered to have a significant effect if it would: • result in a facility operating at an acceptable LOS to deteriorate to an unacceptable LOS, according to the LOS threshold defined by Caltrans. *Freeway Segments*: A project is considered to have a significant effect if it would: • result in a facility operating at an acceptable LOS to deteriorate to an unacceptable LOS, according to the LOS threshold defined in the Caltrans Route Concept Report for that facility. *Residential Streets*: A project is considered to have a significant effect if it would: • result in a residential street operating at an acceptable LOS to deteriorate to an unacceptable LOS; or • increase the V/C ratio by more than 0.05 at a residential street that is operating at an unacceptable LOS without the project. *Bicycle and Pedestrian Facilities:* A project is considered to have a significant effect if it would: • eliminate or adversely affect an existing bikeway or pedestrian facility in a way that

Table 3.9-3		
Local and Regional LOS Standards and Significance Thresholds		
Regulatory Agency	***Standards***	***Significance Thresholds***
		would discourage its use; • interfere with the implementation of a planned bikeway as shown in the Bicycle Master Plan, or be in conflict with the Pedestrian Master Plan; or • result in unsafe conditions for bicyclists or pedestrians, including unsafe bicycle/pedestrian, bicycle/motor vehicle, or pedestrian/motor vehicle conflict. *Safety:* A project is considered to have a significant effect if it would: • substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
City of Folsom	LOS C	If the “no project” LOS is LOS C or better and the project-generated traffic causes the intersection level of service to degrade to worse than LOS C (i.e., LOS D, E or F) then the proposed project must implement mitigation measures to return the intersection to LOS C or better. If the “no project” LOS is worse than LOS C (i.e., LOS D, E or F) and the project-generated traffic causes the overall average delay value at the intersection to increase by five seconds or more, then the Folsom DS/FDR must implement mitigation measures to improve the intersection to the “no project” condition or better. It is not necessary to improve the intersection to LOS C. If the “no project” LOS is worse than LOS C (i.e., LOS D, E, or F) and the project-generated traffic causes the overall delay value at the intersection to increase by less than five seconds, then the traffic impact is considered less than significant and no mitigation is required.
Placer County	LOS C on rural roadways, except within one-half mile of state highways where the standard shall be LOS D. LOS C on urban/suburban roadways except within one-half mile of state highways where the standard shall be LOS D.	Require mitigation to LOS C unless an intersection is within one-half mile of a State Highway, in which case the LOS standard is "D". This applies where the existing LOS is at these levels, or better. If the LOS is worse than these standards, seek to mitigate impacts back to the existing level (Brinkman 2006).
Granite Bay	The LOS on major roadways (i.e., arterial and collector routes) and intersection identified in the CIP shall be at Level C or better.	Require mitigation to LOS C (Granite Bay Community Plan).
City of Lincoln	LOS C for all streets and intersections (some variation by intersection)	If the Folsom DS/FDR is shown to cause degradation of intersection LOS to worse than “C” (Or whichever LOS is identified in the General Plan for the particular intersection) after considering any improvements already planned by the City, then the traffic study shall recommend feasible mitigation measures to bring the intersection LOS within acceptable standards (in accordance with the General Plan)(City of Lincoln Department of Public Works Design Criteria and Procedures Manual 2004)
City of Roseville	Varies by intersection	If the Folsom DS/FDR causes a signalized intersection previously identified in the Capital Improvement Program (CIP) as functioning at LOS C or better to function at LOS D or worse; If the Folsom DS/FDR causes a signalized intersection previously identified in the CIP as functioning at LOS D or E to degrade by one or more LOS category (i.e. from LOS D to LOS E); If the Folsom DS/FDR causes the overall percentage of intersections meeting LOS C at p.m. peak hour to fall below 70%.

Table 3.9-3 Local and Regional LOS Standards and Significance Thresholds		
Regulatory Agency	**Standards**	**Significance Thresholds**
Yuba County	On County roads in urban areas and within specific/community plan areas, LOS C shall be maintained during the PM Peak Hour at signalized intersections. On County roads in rural areas, LOS C shall be maintained	n/a
Wheatland	Maintain LOS C or better on all roadways, except within one-quarter mile of state highways. In these areas, the City shall strive to maintain LOS D or better.	n/a
City of Marysville	n/a	n/a
El Dorado County	Varies by intersection, LOS for County-maintained roads and state highways within the unincorporated areas of the county shall not be worse than LOS E in the Community Regions or LOS D in the Rural Centers and Rural Regions except as specified in Table TC-2 or, after December 31, 2008, Table TC-3.	Two (2) percent increase in traffic during the a.m. peak hour, p.m. peak hour, or daily, or The addition of 100 or more daily trips, or The addition of 10 or more trips during the a.m. peak hour or the p.m. peak hour.

Sources: 2004 El Dorado County General Plan; 1985 City of Marysville General Plan; 1993 Sacramento County General Plan; 1994 Placer County General Plan; 1993 City of Folsom General Plan; 2003 City of Roseville General Plan; October 2005 General Plan Public Draft Goals and Policies Report City of Lincoln; Wheatland General Plan Policy Document Part II December 2005

3.9.1.3 Environmental Setting

The following describes the existing characteristics of the roadways and intersections located within the traffic analysis study area. Existing traffic volume data for the subject roadways were collected from a variety of sources. Recent EIS/EIR filings, City and County Transportation Divisions, and General Plan documents were researched to collect as much existing traffic volume data as possible. The primary source of traffic data information is the American River Watershed Project Folsom

Dam Raise, Folsom Bridge Draft Supplemental EIS/EIR (Bridge EIS/EIR) dated May 2006 along with Caltrans traffic counts website and local city/county contacts.

If and where available, based on information currently available recent intersection capacity analysis data is included in the descriptions provided below.

Local Access Route Descriptions

Folsom Boulevard

Folsom Boulevard is functionally classified as a divided arterial and provides north-south access between the cities of Auburn to the north and Folsom to the south. Headed north from the US Highway 50 Interchange, Folsom Boulevard is a six-lane divided roadway to Iron Point Road. At Iron Point Road, the northbound side is reduced to two lanes while the southbound side maintains 3 lanes. At Natoma Station Drive, the southbound side of Folsom Boulevard also is reduced to two lanes. From Natoma Station Drive to Blue Ravine Road/Auburn-Folsom Road, Folsom Boulevard is a four-lane divided roadway. The speed limit is posted at 50 miles per hour (mph). Land use along much of the roadway is predominantly commercial.

Major intersections along Folsom Boulevard include:

<u>Folsom Boulevard at the US Highway 50 Interchange:</u> The traffic flow at this intersection consists of three intersection approaches. The approach from US Highway 50 (eastbound) consists of an exclusive left turn lane, a shared left/right lane, and a right turn lane. The northbound approach on Folsom Boulevard consists of an exclusive left turn lane and three through lanes. The southbound Folsom Boulevard approach consists of two through lanes. The intersection is signalized; there are no facilities for pedestrians or bicyclists. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

<u>Folsom Boulevard at Iron Point Road:</u> The traffic flow at this intersection consists of three intersection approaches. Iron Point Road enters from the east with two exclusive left turn lanes and one right turn lane. Folsom Boulevard northbound consists of two through lanes and one right turn lane. Folsom Boulevard southbound consists of one exclusive left turn lane and three through lanes. Iron Point Road has sidewalks on both sides of the roadway. There is a bicycle/pedestrian pathway that runs parallel with this section of Folsom Boulevard with a connector to the Iron Point Road/Folsom Boulevard intersection. Pedestrian crosswalks are provided on the westbound and southbound approaches to connect Iron Point Road to the bicycle/pedestrian pathway. The intersection is signalized and has pedestrian signal heads and push buttons. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

Folsom Boulevard at Natoma Station Drive: The Folsom Boulevard at Natoma Station Drive intersection consists of three approaches. Natoma Station Drive enters from the east and consists of two exclusive left turn lanes and one right turn lane. The Folsom Boulevard northbound approach has a lane configuration of two through lanes and one right turn lane. Folsom Boulevard southbound consists of one exclusive left turn lane and two through lanes. Natoma Station Drive has sidewalks on both sides of the roadway. A pedestrian/bicycle pathway connects into the intersection from the west. Crosswalks are provided across the Natoma Station Drive and Folsom Boulevard southbound approaches. The Folsom Boulevard/Natoma Station Drive intersection is signalized and includes pedestrian push buttons and signal heads. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

Folsom Boulevard at Blue Ravine Road: The traffic flow at the intersection of Folsom Boulevard at Blue Ravine Road consists of four intersection approaches. The Folsom Boulevard northbound and southbound approaches consist of an exclusive left turn lane, two through lanes, and a right turn lane. The Blue Ravine Road approaches consist of an exclusive left turn lane, one through lane, and one right turn lane. Sidewalks are provided on both sides of Blue Ravine Road in the vicinity of the intersection; short sections of sidewalk are provided on the west side of Folsom Boulevard to provide access to businesses adjacent to the intersection. There are pedestrian crosswalks on the Folsom Boulevard northbound approach and the Blue Ravine Road westbound approach. The intersection is signalized and includes pedestrian signal heads and push buttons. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

Folsom Boulevard at Natoma Street and Forrest Street: The Folsom Boulevard at Natoma Street/Forrest Street intersection consists of four approaches. The Folsom Boulevard approaches both consist of an exclusive left turn lane, two through lanes, and a right turn lane. The lane configuration of the Forrest Street approach is one combined left/through lane and one right turn lane. The Natoma Street approach consists of a left turn lane, a through lane, and a right turn lane. There is a bicycle lane provided along this section of Auburn-Folsom Road both northbound and southbound. Forrest Street and Natoma Street have sidewalks along both sides in the vicinity of the intersection. Pedestrian crossings are provided on all four approaches with pedestrian push button actuation. This intersection currently experiences a worse case of LOS D during the evening peak hour (4 p.m. to 6 p.m.) period as illustrated in the Bridge EIS/EIR.

Iron Point Road at Folsom Boulevard: The traffic flow at this intersection consists of three intersection approaches. Iron Point Road enters from the east with two exclusive left turn lanes and one right turn lane. Folsom Boulevard northbound consists of two through lanes and one right turn lane. Folsom Boulevard southbound consists of one exclusive left turn lane and three through lanes. Iron Point Road has sidewalks on both sides of the roadway. There is a bicycle/pedestrian pathway that runs parallel with this section of Folsom Boulevard with a connector to the Iron Point Road/Folsom Boulevard intersection. Pedestrian crosswalks are provided on the westbound and southbound approaches to connect Iron Point Road to the bicycle/pedestrian pathway. The intersection is signalized and has pedestrian signal heads and push buttons. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

Auburn-Folsom Road

Auburn-Folsom Road is functionally classified as an undivided arterial and provides north-south access between the cities of Auburn to the north and Folsom to the south. Beginning at the intersection of Greenback Lane/Riley Street/Folsom Boulevard, Auburn-Folsom Road is a four-lane divided roadway. Heading north, Auburn-Folsom Road continues with two lanes in each direction, becoming an undivided roadway outside of the City of Folsom limits, to its intersection with Folsom Dam Road. Continuing north, Auburn-Folsom Road narrows to one lane in each direction, crosses the Sacramento/Placer county line, and remains a two-lane undivided roadway to the Douglas Boulevard intersection. The speed limit is posted at 50 miles mph. Land use along Auburn-Folsom Road is mixed; commercial, residential and light industrial, however in downtown Folsom the land use becomes mainly commercial.

Major intersections located along Auburn-Folsom Road include:

<u>Folsom Boulevard/Auburn-Folsom Road at Greenback Lane:</u> The Folsom Boulevard/Auburn-Folsom Road at Greenback Lane intersection traffic flow is comprised of four approaches. The northbound approach on Folsom Boulevard (on the American River Bridge) has two exclusive left turn lanes, two through lanes, and a right turn lane. The Auburn-Folsom Road southbound approach and Greenback Lane westbound approaches consist of an exclusive left turn lane, two through lanes, and a right turn lane. The eastbound Greenback Lane approach lane configuration is two exclusive left lanes, one through lane, and a channelized right turn lane. Auburn-Folsom Road northbound has bicycle lanes on both sides of the roadway; Greenback Lane eastbound has a marked bicycle lane on the south side of the roadway. Pedestrian crosswalks are provided on all four intersection approaches and include pedestrian pushbuttons. The intersection is signalized. This intersection currently experiences a LOS F during the peak hour periods as illustrated in the Bridge EIS/EIR.

Auburn-Folsom Road at Oak Avenue Parkway: The intersection of Auburn-Folsom Road at Oak Avenue Parkway consists of four intersection approaches. The Auburn-Folsom Road approaches both have an exclusive left turn lane and two through lanes. The Oak Avenue Parkway approaches both have a single shared lane. Pedestrian crosswalks are provided across the Auburn-Folsom Road approaches with pedestrian pushbuttons and signal heads; however, there are no sidewalks present within the vicinity of the intersection. The intersection of Auburn-Folsom Road at Oak Avenue Parkway is signalized. This intersection currently experiences a LOS D during the peak hour periods as illustrated in the Bridge EIS/EIR.

Auburn-Folsom Road at Inwood Road: The traffic flow at this intersection consists of three intersection approaches. The Auburn-Folsom Road northbound approach has an exclusive left turn lane and two through lanes. The Auburn-Folsom Road southbound approach has two lanes, one through and one shared through/right. Inwood Road comes into the intersection from the west with an exclusive left turn lane and an exclusive right turn lane. There are no sidewalks present in the vicinity of the Auburn-Folsom Road at Inwood Road intersection; however, pedestrian crosswalks are present across the northbound and eastbound approaches. The intersection is signalized. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

Auburn-Folsom Road at Folsom Dam Road: The intersection of Auburn-Folsom Road at Folsom Dam Road consists of four intersection approaches. The Auburn-Folsom Road approaches consist of an exclusive left turn lane and two through lanes. The Folsom Dam Road eastbound approach is one shared lane; the westbound approach consists of an exclusive left turn lane and a shared through/right lane. Bicycle lanes are present on both sides of Auburn-Folsom Road in the vicinity of the intersection. Folsom Dam Road west of the intersection has sidewalks on both sides; the southbound Auburn-Folsom Road approach has a segment of sidewalk on the west side at the intersection. Pedestrian crosswalks are provided across the Auburn-Folsom northbound approach and the Folsom Dam Road eastbound approach. The intersection is signalized. This intersection currently experiences a LOS A during the peak hour periods as illustrated in the Bridge EIS/EIR.

Auburn-Folsom Road at Pinebrook Drive: The Auburn-Folsom Road at Pinebrook Drive intersection traffic flow consists of four approaches; three approaches are roadways, the fourth a driveway. The Auburn-Folsom Road northbound approach has an exclusive left turn lane and one through lane. The Auburn-Folsom Road southbound approach consists of a through lane and an exclusive right turn lane. The Pinebrook Drive approach lane configuration is one exclusive left turn lane and one right turn lane. The driveway approaches from the east and consists of a narrow general use lane. There are no marked pedestrian crosswalks; however, there is a short section of sidewalk on the Auburn-Folsom Road southbound approach that connects Pinebrook Drive to the commercial property to the north. The intersection is signalized. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

<u>Auburn-Folsom Road at Oak Leaf Way and Beal's Point Road:</u> The intersection is comprised of four approaches. Auburn-Folsom Road northbound consists of an exclusive left turn lane and one through lane. The southbound Auburn-Folsom Road approach has an exclusive left turn lane, one through lane, and a right turn lane. Oak Leaf Way comes into the intersection with a shared left/through lane and an exclusive right tune lane. Beal's Point Road consists of a single general use lane. Crosswalks are present across the northbound Auburn-Folsom Road, Oak Leaf Way and Beal's Point Road approaches. There are no marked bicycle lanes or sidewalks within the vicinity of the intersection. The Auburn-Folsom Road at Oak Leaf Way/Beal's Point Road intersection is signalized. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

<u>Auburn-Folsom Road at Eureka Road:</u> The intersection of Auburn-Folsom Road at Eureka Road has four approaches; three roadway approaches and one driveway access. The northbound approach on Auburn-Folsom Road consists of an exclusive left turn lane and a through lane; southbound consists of an exclusive left turn lane, one through lane, and an exclusive right turn lane. The Eureka Road approach from the west has a shared left/through lane and an exclusive right turn lane. A driveway access is directly across the intersection from Eureka Road. Pedestrian crosswalks are provided across the Auburn-Folsom Road northbound approach and the Eureka Road approach. There are no sidewalks within the vicinity of the intersection. The Auburn-Folsom Road at Eureka Road intersection is signalized. This intersection currently experiences a LOS B during the peak hour periods as illustrated in the Bridge EIS/EIR.

<u>Auburn-Folsom Road at Douglas Boulevard:</u> The Auburn-Folsom Road at Douglas Boulevard intersection is comprised of four intersection approaches. The Auburn-Folsom Road southbound, and both Douglas Boulevard approaches, consist of one exclusive left turn lane, two shared through lanes, and an exclusive channelized right turn lane. The Auburn-Folsom Road northbound approach consists of an exclusive left turn lane, one shared left/through lane, one through lane, and an exclusive channelized right turn lane. All four approaches have sidewalks present on both sides in the vicinity of the intersection. Pedestrian access is provided by crosswalks from each corner of the intersection to the channelization islands; and across each leg of the intersection from island to island. Pedestrian pushbuttons and signal heads are provided for all crossings. The intersection is signalized. This intersection currently experiences a LOS D during the peak hour periods as illustrated in the Bridge EIS/EIR.

Douglas Boulevard

Douglas Boulevard is an east-west roadway and is functionally classified as a divided arterial. Between Sierra College Boulevard and Auburn-Folsom Road, Douglas Boulevard consists of two lanes in each direction. Continuing east, it further narrows to a two-lane undivided roadway. Land uses along much of the roadway are offices and commercial to Sierra College Boulevard; residential/vacant/open space with limited commercial between Sierra College Boulevard and Auburn-Folsom Road; and primarily residential east of Auburn-Folsom Road. Douglas Boulevard west of Interstate 80 is two lanes in each direction through heavily developed and densely populated areas.

Major intersections along Douglas Boulevard include:

<u>Douglas Boulevard at Eureka Road:</u> The intersection of Douglas Boulevard at Eureka Road consists of four intersection approaches. The Douglas Boulevard eastbound approach has six lanes: two exclusive left turn lanes, three through lanes, and a right turn lane. The westbound Douglas Boulevard approach consists of two exclusive left turn lanes, three through lanes, and a channelized right turn lane. The Eureka Road northbound approach has two exclusive left turn lanes, two through lanes, and a right turn lane. The southbound Eureka Road approach consists of two left turn lanes, two through lanes, and a channelized right turn lane. The Eureka Road approaches also include a marked bicycle lane between the through and right turn lanes; Douglas Boulevard has a bicycle lane only on the north side between the through lane and the channelized right turns. All four approaches have sidewalks present on both sides of the roadways. Crosswalks are provided across all of the intersection approaches. The intersection is signalized and pedestrian push buttons are provided. This intersection currently experiences a LOS C during the peak hour period as illustrated in the Circulation Element section of the City of Roseville General Plan.

<u>Douglas Boulevard at East Roseville Parkway:</u> The intersection of Douglas Boulevard at East Roseville Parkway consists of four intersection approaches. The Douglas Boulevard eastbound approach has six lanes: two exclusive left turn lanes, three through lanes, and a right turn lane. The westbound Douglas Boulevard approach consists of two exclusive left turn lanes, three through lanes, and a channelized right turn lane. The East Roseville Parkway northbound approach has one exclusive left turn lane, two through lanes, and one right turn lane. The southbound East Roseville Parkway approach consists of two left turn lanes, two through lanes, and a channelized right turn lane. The East Roseville Parkway approaches also include a marked bicycle lane between the through and right turn lanes; Douglas Boulevard has a bicycle lane only on the north side between the through lane and the channelized right turns. All four approaches have sidewalks present on both sides of the roadways. Crosswalks are provided across all of the intersection approaches. The intersection is signalized and includes pedestrian push

buttons. This intersection currently experiences a LOS A during the peak hour period as illustrated in the City of Roseville General Plan, Circulation Element.

Douglas Boulevard at Sierra College Boulevard: The intersection of Douglas Boulevard at Sierra College Boulevard consists of four intersection approaches. The eastbound Douglas Boulevard approach has four approach lanes: one exclusive left turn lane, two through lanes, and a shared through/right lane. The westbound approach on Douglas Boulevard consists of one left turn lane, three through lanes, and a channelized right turn lane. The Sierra College Boulevard approaches both have four lanes: one left turn lane, two through lanes, and a right turn lane. The right turn lane on the northbound approach is channelized. There are no marked bicycle lanes at this intersection. Pedestrian access is provided on all approaches with sidewalks on both sides of the roadways and pedestrian crosswalks across all four approaches. The intersection of Douglas Boulevard and Sierra College Boulevard is signalized and includes pedestrian pushbuttons. This intersection currently experiences a LOS E during the peak hour period as illustrated in the Circulation Element section of the City of Roseville General Plan.

Douglas Boulevard at Cavitt-Stallman Road: The Douglas Boulevard at Cavitt-Stallman Road intersection is comprised of four approaches. The eastbound Douglas Boulevard approach has an exclusive left turn lane, a through lane, and a shared through/right lane. The Douglas Boulevard westbound approach consists of an exclusive left turn lane, two through lanes, and a right turn lane. Both Douglas Boulevard approaches have a marked bicycle lane. The Cavitt-Stallman Road approaches each have two lanes: one shared left/through and one exclusive right. Sidewalks are present on both sides of the roadways; crosswalks are provided across the Douglas Boulevard eastbound and both Cavitt-Stallman Road approaches. The intersection is signalized and includes pedestrian pushbuttons. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

Douglas Boulevard at Seeno Avenue: The intersection of Douglas Boulevard and Seeno Avenue consists of three intersection approaches. The Douglas Boulevard approaches, both east and west, have an exclusive left turn lane and two through lanes. The Seeno Avenue approach has one general use lane; however, it is wide enough to allow for both a right and left turning vehicles. There is sidewalk present on the north side of Douglas Boulevard; there are no marked pedestrian crossings at the intersection. The Douglas Boulevard at Seeno Avenue intersection is signalized. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

Douglas Boulevard at Barton Road: The intersection of Douglas Boulevard and Barton Road has four intersection approaches. The eastbound Douglas Boulevard approach has one left turn lane, one through lane, and a shared through/right turn lane. The Douglas Boulevard westbound approach consists of an exclusive left turn lane, two through lanes, and a right turn lane. The north and southbound approaches on Barton Road are both two lanes: one shared left/through and one right turn lane. The Barton Road northbound right turn lane is channelized. Pedestrian crosswalks are provided across the Douglas Boulevard westbound approach and both Barton Road approaches. A sidewalk is present along the Barton Road southbound approach and on the north side of Douglas Boulevard heading west from the intersection. The intersection is signalized. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

Douglas Boulevard at Auburn-Folsom Road: The Auburn-Folsom Road at Douglas Boulevard intersection is comprised of four intersection approaches. The Auburn-Folsom Road southbound, and both Douglas Boulevard approaches, consist of one exclusive left turn lane, two shared through lanes, and an exclusive channelized right turn lane. The Auburn-Folsom Road northbound approach consists of an exclusive left turn lane, one shared left/through lane, one through lane, and an exclusive channelized right turn lane. All four approaches have sidewalks present on both sides in the vicinity of the intersection. Pedestrian access is provided by crosswalks from each corner of the intersection to the channelization islands; and across each leg of the intersection from island to island. Pedestrian pushbuttons and signal heads are provided for all crossings. The intersection is signalized. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

Blue Ravine Road

Blue Ravine Road is an east-west roadway connecting Folsom Boulevard to East Natoma Street. It is classified as an arterial. Between Folsom Boulevard and Prairie City Road/Sibley Street, Blue Ravine Road consists of three lanes in each direction. East of Sibley Street, Blue Ravine Road narrows to two lanes in each direction to the intersection of Joerganson Road and then continues east varying between one-lane and two-lane configurations to East Natoma Street/Green Valley Road. Blue Ravine Road is classified as a divided arterial. The speed limit is 45 mph and the roadway is posted as a local truck route. Land uses along much of the roadway are mixed commercial/office with dense residential along its full length.

Major intersections along Blue Ravine Road include:

Blue Ravine Road at Folsom Boulevard and Auburn-Folsom Road: The traffic flow at the intersection of Blue Ravine Road at Folsom Boulevard and Auburn-Folsom Road consists of four intersection approaches. The Folsom Boulevard (northbound) and Auburn-Folsom Road (southbound) approaches consist of an exclusive left turn lane, two through lanes, and a right turn lane. The Blue Ravine Road approaches consist of an exclusive left turn lane, one through lane, and one right turn lane. Sidewalks are provided on both sides of Blue Ravine Road in the vicinity of the intersection; short sections of sidewalk are provided on the west side of Folsom Boulevard and Auburn-Folsom Road to provide access to businesses adjacent to the intersection. There are pedestrian crosswalks on the Folsom Boulevard northbound approach and the Blue Ravine Road westbound approach. The intersection is signalized and there are pedestrian signals and push buttons. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

Blue Ravine Road at Oak Avenue Parkway: The Blue Ravine Road at Oak Avenue Parkway intersection has four approach legs. The eastbound approach on Blue Ravine Road consists of five lanes: two left turn lanes, two through lanes, and a channelized right turn lane. The Blue Ravine Road westbound approach has two left turn lanes, one through lane, and a shared through/right turn lane. The Oak Avenue Parkway northbound approach leg consists of one left turn lane, three through lanes, and a channelized right turn lane. There is a marked bicycle lane between the through and right turn lanes. The southbound Oak Avenue Parkway approach has one left turn lane, one through lane, and a shared through/right turn lane. Sidewalks are present on both sides of all of the intersection approaches; pedestrian crosswalks are provided across all four legs of the intersection. The Blue Ravine Road at Oak Avenue Parkway intersection is signalized and provides pushbuttons and signal heads for pedestrian access. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

Blue Ravine Road at Green Valley Road and East Natoma Street: The intersection of Green Valley Road at Blue Ravine Road/East Natoma Street consists of four intersection approaches. The eastbound and westbound approaches on East Natoma Street both consist of an exclusive left turn lane and a shared through/right turn lane. The northbound Green Valley Road approach, and the southbound Blue Ravine Road approach, both have one left turn lane, one through lane, and one right turn lane. There is sidewalk present on the south side of eastbound East Natoma Street approach and on the west side of Green Valley Road heading south away from the intersection. Crosswalks are marked across the Green Valley Road approach and the East Natoma Street westbound approach. There is a marked bicycle path on both sides of East Natoma Street east of the intersection. The Green Valley Road at East Natoma Street and Blue Ravine Road intersection is signalized and includes pedestrian pushbuttons and signal heads. This intersection currently experiences a worse case of LOS C during the evening peak hour period (4 pm – 6 pm) as illustrated in the Bridge EIS/EIR.

East Natoma Street

Natoma Street is an east-west roadway in the City of Folsom. It is classified as an undivided arterial. Natoma Street consists of one lane in each direction from Folsom Boulevard to Stafford Street. East of Stafford Street, Natoma Street widens to two lanes in each direction and continues as a four-lane undivided roadway to Fargo Way. At Fargo Way, Natoma Street becomes East Natoma Street and continues to Folsom Dam Road as a two-lane undivided roadway. At Folsom Dam Road, the eastbound side of the roadway increases to two lanes; it continues as a three-lane road to Green Valley Road/Blue Ravine Road. Natoma Street is posted at 35 mph through the City of Folsom and then increases to 45 mph at the Prison entrance and increases again to 50 mph at Briggs Ranch Drive. Within the downtown area, land use is mixed use residential/commercial/office; east of Fargo Way the land use changes to residential/recreational.

Major intersections along East Natoma Street include:

East Natoma Street at Auburn-Folsom Road and Forrest Street: The Auburn-Folsom Road at Natoma Street/Forrest Street intersection consists of four approaches. The Auburn-Folsom Road approaches both consist of an exclusive left turn lane, two through lanes, and a right turn lane. The lane configuration of the Forrest Street approach is one combined left/through lane and one right turn lane. The Natoma Street approach consists of a left turn lane, a through lane, and a right turn lane. There is a bicycle lane provided along this section of Auburn-Folsom Road both northbound and southbound. Forrest Street and Natoma Street have sidewalks along both sides in the vicinity of the intersection. Pedestrian crossings are provided on all four approaches with pedestrian push button actuation. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

East Natoma Street at Riley Street: The intersection of Natoma Street at Riley Street consists of four approach legs. The lane configuration on all approaches is an exclusive left turn lane and a shared through/right turn lane. Bicycle lanes are present on both sides of the roadway. Pedestrian crosswalks are provided across the four approaches; there is sidewalk in the vicinity of the intersection on all approaches. The Natoma Street at Riley Street intersection is signalized and pedestrian pushbuttons and signal heads are provided. This intersection currently experiences a worse case of LOS F during the evening peak hour period (4 pm – 6 pm) as illustrated in Bridge EIS/EIR.

East Natoma Street at Coloma Street: The Natoma Street at Coloma Street intersection consists of four intersection approaches. All four intersection legs have the same lane configuration: one left turn lane and one shared through/right turn lane. Sidewalks are present on both sides of Natoma Street and Coloma Street in the vicinity of the intersection. Pedestrian crosswalks are provided across all four intersection approaches. The intersection is signalized and pedestrian pushbuttons and signal heads are provided for each crossing. This intersection currently experiences a worse case of LOS C during the evening peak hour period (4 pm – 6 pm) as illustrated in the Bridge EIS/EIR.

East Natoma Street at Stafford Street: The intersection of Natoma Street at Stafford Street has four approaches; the Stafford Street approaches are slightly offset with the northbound approach further west than the southbound approach. The Natoma Street eastbound approach consists of a left turn lane and a shared through/right turn lane. The Natoma Street westbound approach has a left turn lane, on through lane, and a right turn lane. The northbound and southbound Stafford Street approaches both have a marked shared left/through/right lane. Sidewalks are present on both sides of all four intersection legs. Crosswalks are provided across all intersection approaches. The Natoma Street at Stafford Street intersection is signalized and includes pedestrian pushbuttons. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

East Natoma Street at Wales Drive: The intersection of Natoma Street at Wales Drive consists of four approaches; three roadway approaches and one driveway access. The eastbound and westbound Natoma Street approaches have one left turn lane, one through lane, and a shared through/right lane. The Wales Drive northbound leg consists of one left turn lane and a shared through/right lane. The driveway access southbound has a left turn lane and a shared through/right turn lane. There are sidewalks present along both sides of Natoma Street and Wales Drive; the driveway access has sidewalk on the east side only. The Natoma Street and Wales Drive approaches have crosswalks. The intersection is signalized and pedestrian pushbuttons are provided. This intersection currently experiences a LOS B during the peak hour periods as illustrated in the Bridge EIS/EIR.

East Natoma Street at Natoma Street and Prison Road: The Natoma Street at East Natoma Street and Prison Road intersection has three approach legs. The Natoma Street eastbound approach consists of a left turn lane and a through lane. This approach also has a marked bicycle lane. The westbound East Natoma Street approach has one shared lane and a marked bicycle lane. The Prison Road, southbound, leg of the intersection has one left turn lane and a right turn lane. There are no pedestrian crosswalks or sidewalks at this intersection. The Natoma Street at East Natoma Street and Prison Road intersection is signalized. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

East Natoma Street at Folsom Dam Road and Briggs Ranch Drive**:** The traffic flow at the intersection of East Natoma Street at Folsom Dam Road consists of four intersection approaches. The eastbound East Natoma Street approach has one left turn lane, a though lane, and a shared through/right turn lane. The westbound approach on East Natoma Street consists of a left turn lane, a through lane, and a right turn lane. The Briggs Ranch Drive northbound leg to the intersection consists of a shared left/through lane and a right turn lane. The southbound approach on Folsom Dam Road has a left turn lane and a shared left/through/right turn lane. Sidewalks are present on both sides of Briggs Ranch Drive south of the intersection; there are crosswalks on both the East Natoma Street and northbound Briggs Ranch Drive approaches. The East Natoma Street at Folsom Dam Road and Briggs Ranch Drive intersection is signalized and pedestrian signals and pushbuttons are provided for each crossing. This intersection currently experiences a LOS A during the peak hour periods as illustrated in the Bridge EIS/EIR.

<u>East Natoma Street at Briggs Ranch Drive:</u> The traffic flow at the intersection of East Natoma Street and Briggs Ranch Drive consists of four approach legs. The eastbound East Natoma Street approach has one left turn lane, two through lanes, and a right turn lane. The westbound East Natoma Street leg consists of one left turn lane, one through lane, and one right turn lane. The Briggs Ranch Drive approach from the south has one shared left/through lane and a right turn lane; the approach from the north has a single, unmarked, shared use lane. Briggs Ranch Drive has sidewalks on both sides to the south of the intersection. East Natoma Street has sidewalk on the north side to the west of the intersection. The northbound Briggs Ranch Drive and eastbound East Natoma approaches have crosswalks. The intersection is signalized. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

Green Valley Road

Green Valley Road is an east-west roadway that begins at the intersection with East Natoma/Blue Ravine Road and continues east into El Dorado County. Within the Folsom DS/FDR area, Green Valley Road is a two-lane undivided roadway and is classified as an undivided arterial. The speed limit is posted at 45 mph. Green Valley Road does not have sidewalks or marked bicycle facilities. The land use along much of the roadway is primarily residential/recreational.

Folsom Dam Road

On February 28, 2003, “following a series of security reviews, Reclamation indefinitely closed Folsom Dam Road, as an emergency measure to preserve and protect the core mission of Folsom Dam and Reservoir and to ensure public safety in the vicinity of the dam and other parts of Sacramento County.” Following a Record of Decision issued May 2005, Reclamation allowed the road to be opened to commuter traffic for 3-hour periods during the morning and evening peak periods subject to the City of Folsom providing safety and infrastructure improvements. The City of Folsom is currently unable to open the roads subject to Reclamation’s conditions; therefore, the road remains temporarily closed.

To provide a conservative analysis of potential impacts on currently open roads, this analysis assumes that Folsom Dam Road is not available for construction activities. During implementation of the Folsom DS/FDR, the Folsom Dam Road could be used to accommodate construction traffic, which would reduce potential transportation impacts.

Sierra College Boulevard

Sierra College Boulevard is a north-south roadway that begins at its intersection with Hazel Avenue and Old Auburn Road and continues north to Interstate 80 and ends at the Caperton Reservoir. From Old Auburn Road to Seymour Place, Sierra College Boulevard is a four-lane divided roadway. At Seymour Place, the northbound side reduces to one lane. Sierra College Boulevard continues as a three-lane divided roadway to the Rocklin line north of Olympus Drive where it further reduces to a two-lane undivided roadway. It is classified as a divided arterial. Sierra College Boulevard is posted at 45 mph through the Folsom DS/FDR area. Land use along much of the roadway varies from residential to commercial/retail.

Major intersections along Sierra College Boulevard include:

<u>Sierra College Boulevard at Douglas Boulevard:</u> The intersection of Douglas Boulevard at Sierra College Boulevard consists of four intersection approaches. The eastbound Douglas Boulevard approach has four approach lanes: one exclusive left turn lane, two through lanes, and a shared through/right lane. The westbound approach on Douglas Boulevard consists of one left turn lane, three through lanes, and a channelized right turn lane. The Sierra College Boulevard approaches both have four lanes: one left turn lane, two through lanes, and a right turn lane. The right turn lane on the northbound approach is channelized. There are no marked bicycle lanes at this intersection. Pedestrian access is provided on all approaches with sidewalks on both sides of the roadways and pedestrian crosswalks across all four approaches. The intersection of Douglas Boulevard and Sierra College Boulevard is signalized and includes pedestrian pushbuttons. This intersection currently experiences a LOS E during the peak hour period as illustrated in the City of Roseville General Plan, Circulation Element.

Eureka Road

Eureka Road is a north-south roadway; within the limits of the Folsom DS/FDR study area, it begins at the intersection of Eureka Road and Douglas Boulevard and ends at the Interstate 80 interchange intersection. It is classified as an arterial, changing from undivided to divided within the Folsom DS/FDR study area. The roadway consists of six lanes, divided, with marked bicycle lanes on both sides. The posted speed limit within the Folsom DS/FDR study area is 45 mph. Land use along much of the roadway is predominantly commercial/retail and large office space.

Major intersections along Eureka Road include:

Eureka Road at Douglas Boulevard: The intersection of Eureka Road at Douglas Boulevard consists of four intersection approaches. The Douglas Boulevard eastbound approach has six lanes: two exclusive left turn lanes, three through lanes, and a right turn lane. The westbound Douglas Boulevard approach consists of two exclusive left turn lanes, three through lanes, and a channelized right turn lane. The Eureka Road northbound approach has two exclusive left turn lanes, two through lanes, and a right turn lane. The southbound Eureka Road approach consists of two left turn lanes, two through lanes, and a channelized right turn lane. The Eureka Road approaches also include a marked bicycle lane between the through and right turn lanes; Douglas Boulevard has a bicycle lane only on the north side between the through lane and the channelized right turns. All four approaches have sidewalks present on both sides of the roadways. Crosswalks are provided across all of the intersection approaches. The intersection is signalized and pedestrian push buttons are provided. This intersection currently experiences a LOS C during the peak hour period as illustrated in the Circulation Element section of the City of Roseville General Plan.

Eureka Road at Lead Hill Boulevard: The intersection of Eureka Road at Lead Hill Boulevard consists of four intersection approaches. The Eureka Road northbound and southbound approaches have five lanes: one exclusive left turn lane, three through lanes, and a channelized right turn lane. There is a marked bicycle lane between the through and right turn lane. The Lead Hill Boulevard approaches consist of four lanes: one exclusive left turn lane, two through lanes, and a channelized right turn lane. A bicycle lane is present between the through and right lane. All four approaches have sidewalks present on both sides of the roadway. Crosswalks are provided across all four intersection legs. The intersection is signalized and includes pedestrian signal heads and pushbutton actuation. This intersection currently experiences a LOS A during the peak hour period as illustrated in the Circulation Element section of the City of Roseville General Plan.

Eureka Road at Rocky Ridge Drive: The intersection of Eureka Road at Rocky Ridge Drive consists of four intersection approaches. The Eureka Road northbound and southbound approaches have five lanes: one exclusive left turn lane, three through lanes, and a channelized right turn lane. There is a marked bicycle lane between the through and right turn lane. The Rocky Ridge Drive approaches consist of four lanes: one exclusive left turn lane, two through lanes, and a channelized right turn lane. A bicycle lane is present between the through and right lane. All four approaches have sidewalks present on both sides of the roadway. Crosswalks are provided across all four intersection legs. The intersection is signalized and includes pedestrian signal heads and pushbutton actuation. This intersection currently experiences a LOS D during the peak hour period as illustrated in the Circulation Element section of the City of Roseville General Plan.

Eureka Road at Sunrise Avenue: The intersection of Eureka Road at Sunrise Avenue consists of four intersection approaches. The Eureka Road northbound and southbound approaches have five lanes: one exclusive left turn lane, three through lanes, and a channelized right turn lane. There is a marked bicycle lane between the through and right turn lane. The Sunrise Avenue approaches consist of six lanes: two exclusive left turn lanes, three through lanes, and a channelized right turn lane. A bicycle lane is marked between the through and right turn lane. All four intersection legs have pedestrian crosswalks; there are sidewalks on both sides of all approaches. The intersection is signalized and includes pedestrian pushbuttons. This intersection currently experiences a LOS D during the peak hour period as illustrated in the Circulation Element of the City of Roseville General Plan.

Eureka Road at Taylor Road and the Interstate 80 Off-Ramp: The intersection of Eureka Road at Taylor Road and Interstate 80 has four intersection approaches. The northbound Eureka Road approach consists of three through lanes and a channelized right turn lane. The southbound Eureka Road approach has one exclusive left turn lane, and two though lanes. The Taylor Road westbound approach consists of two exclusive left turn lanes and one exclusive right turn lane. The Interstate 80 off-ramp approach eastbound has one exclusive left turn lane, one through lane, and a channelized right turn lane. Sidewalks are present on both sides of the Taylor Road approach and the Eureka Road northbound approach. Crosswalks are marked across all four legs of the intersection. The Eureka Road at Taylor Road and Interstate 80 intersection is signalized and includes pedestrian signal heads and pushbuttons. This intersection currently experiences a LOS D during the peak hour period as illustrated in the Circulation Element of the City of Roseville General Plan.

East Bidwell Street

East Bidwell Street is a north-south roadway that connects Highway 50 with downtown Folsom. Within the Folsom DS/FDR study area, East Bidwell Street varies between four and six divided lanes. A marked bicycle lane and sidewalks are present along some sections of East Bidwell Street. The roadway is classified as a divided arterial. The speed limit is posted at 45 mph. Land use along much of the roadway is predominantly commercial and residential.

Major intersections along East Bidwell Street include:

East Bidwell Street at Highway 50 Interchange Off-Ramp: The traffic flow at this intersection consists of three intersection approaches. East Bidwell Street enters from the north with three though lanes and from the south with two through lanes. The Highway 50 westbound traffic exits East Bidwell Street to a highway entrance ramp before the intersection. The Highway 50 interchange off-ramp enters the intersection from the east and consists of two exclusive left turn lanes and two right turn lanes. The intersection is signalized, and a pedestrian crosswalk is provided across the Highway 50 ramp. There are no marked bicycle lanes at this location.

Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

East Bidwell Street at Iron Point Road: The intersection of East Bidwell Street and Iron Point Road has four approaches. The northbound and southbound legs of East Bidwell Street have two exclusive left turn lanes, three though lanes, and a channelized right turn lane. The Iron Point Road eastbound approach consists of one left turn lane, a through lane, and a shared through/right turn lane. The westbound Iron Point Road approach has two exclusive left turn lanes, two through lanes, and a channelized right turn lane. Bicycle lanes are present on all four intersection approach legs. Crosswalks are provided across all four approaches and pedestrian signal heads and timings are included. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

East Bidwell Street at Broadstone Parkway: The intersection of East Bidwell Street and Broadstone Parkway has four intersection legs. The northbound East Bidwell Street approach has one left turn lane, three through lanes, and a channelized right turn lane. The southbound approach on East Bidwell Street consists of two left turn lanes, three through lanes, and a channelized right turn lane. The eastbound and westbound Broadstone Parkway approaches both have two left turn lanes, three through lanes, and a channelized right turn lane. Marked bicycle lanes are provided on all four intersection approaches as are pedestrian crosswalks and pushbuttons. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

East Bidwell Street at Scholar Way and Clarksville Road: The intersection of East Bidwell Street at Scholar Way/Clarksville Road consists of four approaches. The northbound East Bidwell Street approaches has two left turn lanes, two through lanes, and a channelized right turn lane; the southbound approach has two left turn lanes, three through lanes, and a channelized right turn lane. The Scholar Way westbound and Clarksville Road eastbound approaches consist of one left turn lane, two through lanes, and a channelized right turn lane. Bicycle lanes are present on all four approach legs. Pedestrian accommodations, including crosswalks and pushbuttons, are included on all approaches. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

East Bidwell Street at Oak Avenue Parkway: The intersection of East Bidwell Street and Oak Avenue Parkway has four intersection approaches. All of the approaches have the same lane configuration: two left turn lanes, three through lanes, and a channelized right turn lane. Bicycle lanes are marked between the through and right turn lanes on all of the intersection legs. Crosswalks and pedestrian push buttons are included for all approaches. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

Oak Avenue Parkway

Oak Avenue Parkway is a six-lane divided roadway. Within the Folsom DS/FDR study area – between East Bidwell Street and Blue Ravine Road – there are no center left turn lanes for access to off-side driveways. All changes of direction are made at the intersections. Oak Avenue Parkway is classified as a divided arterial. The speed limit is posted at 45 mph. Land use along much of the roadway is predominantly residential with some small retail. Marked bicycle lanes and sidewalks are provided intermittently along the roadway.

Major intersections along Oak Avenue Parkway include:

Oak Avenue Parkway at East Bidwell Street: The intersection of Oak Avenue Parkway and East Bidwell Street has four intersection approaches. Each of the approaches consists of two left turn lanes, three through lanes, and a channelized right turn lane. Sidewalks are present on both sides of all approach legs. Bicycle lanes are marked between the through and right turn lanes on all of the intersection legs. Crosswalks and pedestrian push buttons are included for all approaches. Sidewalks are present on all four intersection corners. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

Oak Avenue Parkway at South Lexington Drive: The intersection of Oak Avenue Parkway and South Lexington Drive consists of four intersection approaches. The northbound and southbound Oak Avenue Parkway approaches have one left turn lane, two through lanes, and a shared through/right turn lane. The east and westbound South Lexington Drive approaches have one left turn lane and a shared through/right turn lane. Sidewalks are present on all four intersection approaches. Marked bicycle lanes are present on both Oak Avenue Parkway approach legs. Crosswalks with pedestrian pushbuttons are provided for all four approaches. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

Oak Avenue Parkway at North Lexington Drive: The intersection of Oak Avenue Parkway and North Lexington Drive has four intersection approaches. The north and south Oak Avenue Parkway intersection legs have one left turn lane, two through lanes, and a shared through/right turn lane. The North Lexington Drive approaches consist of a left turn lane and a shared through/right turn lane. Pedestrian accommodations, including sidewalks, crosswalks and pushbuttons, are provided for all four intersection approaches. There are marked bicycle lanes on the northbound and southbound Oak Avenue Parkway approaches. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

<u>Oak Avenue Parkway at Blue Ravine Road:</u> The Oak Avenue Parkway at Blue Ravine Road intersection has four approach legs. The Oak Avenue Parkway northbound approach leg consists of one left turn lane, three through lanes, and a channelized right turn lane. There is a marked bicycle lane between the through and right turn lanes. The southbound Oak Avenue Parkway approach has one left turn lane, one through lane, and a shared through/right turn lane. The eastbound approach on Blue Ravine Road consists of five lanes: two left turn lanes, two through lanes, and a channelized right turn lane. The Blue Ravine Road westbound approach has two left turn lanes, one through lane, and a shared through/right turn lane. Sidewalks are present on both sides of all of the intersection approaches; pedestrian crosswalks are provided across all four legs of the intersection. The Blue Ravine Road at Oak Avenue Parkway intersection is signalized and provides pushbuttons and signal heads for pedestrian access. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

Greenback Lane

Greenback Lane is a four-lane, divided roadway with center left turn lanes for cross-street and driveway access. It runs predominantly in an east-west direction and connects the City of Folsom with Interstate 80 and points west. Sidewalks are present intermittently on both sides of the roadway; there are marked bicycle facilities from Auburn-Folsom Road to Madison Avenue. It is classified as a divided arterial. The posted speed limit is 45 mph. The land use along much of the roadway within the Folsom DS/FDR study area is predominantly residential and small commercial/retail.

Major intersections along Greenback Lane include:

<u>Greenback Lane at Folsom Boulevard/Auburn-Folsom Road:</u> The Greenback Lane at Auburn-Folsom Road/Folsom Boulevard intersection traffic flow is comprised of four approaches. The northbound approach on Folsom Boulevard (on the American River Bridge) has two exclusive left turn lanes, two through lanes, and a right turn lane. The Auburn-Folsom Road southbound approach and Greenback Lane westbound approaches consist of an exclusive left turn lane, two through lanes, and a right turn lane. The eastbound Greenback Lane approach lane configuration is two exclusive left lanes, one through lane, and a channelized right turn lane. Auburn-Folsom Road northbound has bicycle lanes on both sides of the roadway; Greenback Lane eastbound has a marked bicycle lane on the south side of the roadway. Pedestrian crosswalks are provided on all four intersection approaches and include

pedestrian pushbuttons. The intersection is signalized. The intersection is signalized. This intersection currently experiences a LOS F during the peak hour periods as illustrated in the Bridge EIS/EIR.

Greenback Lane at Madison Avenue/Lake Natoma Drive: The intersection of Greenback Lane and Madison Avenue/Lake Natoma Drive consists of four approach legs. Greenback Lane westbound has one exclusive left turn lane, two through lanes, and a channelized right turn lane. The Greenback Lane southbound approach consists of one left turn lane and one shared left/through/right lane. The Madison Avenue eastbound approach has one exclusive left turn lane, one through lane, and a shared through/right turn lane. The northbound Lake Natoma Drive approach consists of one left turn lane, one through lane, and one right turn lane. The intersection is signalized. Sidewalks are present on both sides of all three roadways. Pedestrian crossings are located across the Madison Avenue, Lake Natoma Drive, and Greenback Lane southbound legs of the intersection. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

Greenback Lane at Main Street: The intersection of Greenback Lane and Main Street has four approach legs. All of the approaches have the same lane configuration: one exclusive left turn lane, one through lane, and a shared through/right turn lane. There is sidewalk present on all four approaches; pedestrian facilities are provided for all legs of the intersection. The Greenback Lane at Main Street intersection is signalized. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

Greenback Lane at Hazel Avenue: The Greenback Lane and Hazel Avenue intersection consists of four approach legs. The approaches each have five lanes: two exclusive left turn lanes, two through lanes, and a right turn lane. Sidewalks are available on all approaches. Pedestrian facilities, including crosswalks and pushbuttons, are provided on all four intersection legs. The Greenback Lane and Hazel Avenue location is signalized. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

Scott Road

Scott Road is a narrow two-lane, undivided roadway. Scott Road has a limited paved shoulder and minimal pavement markings. There are no sidewalks or marked bicycle facilities along Scott Road within the Folsom DS/FDR route. The posted speed limit is 35 mph. The land use along much of the roadway is predominantly agricultural.

White Rock Road

White Rock Road is a narrow two-lane, undivided roadway with limited paved shoulder and pavement markings. Sidewalks and marked bicycle facilities are not provided within the Folsom DS/FDR area. The posted speed limit is 35 mph. Land use along much of the roadway is mainly agricultural.

Regional Access Routes

In addition to the local roadway access routes, sand is expected to be hauled to the Folsom DS/FDR site from the City of Marysville, located approximately 50 miles to the northwest of the Folsom Facility. The Regional Routes accessing the Folsom DS/FDR area are listed in Table 3.9-4.

Table 3.9-4
Regional Access Routes

Roadway	***Segment Limits***	***City/Community***	***County***	***Jurisdiction***
Hammonton-Smartville (H-S) Road	From Teichert Aggregate to N. Beale Road	Marysville	Yuba County	Yuba County
N Beale Road	From H-S Road	Marysville	Yuba County	Yuba County
Feather River Boulevard	From N Beale Road to Highway 70	Marysville	Yuba County	Yuba County
Highway 70	Feather River Boulevard to Highway 65	Marysville	Yuba County	Yuba County
Highway 65	From Highway 70 to County Line (south of Wheatland)	Marysville/ Wheatland	Yuba County	Caltrans
Highway 65	County Line (south of Wheatland) to Interstate 80	Lincoln, Roseville	Placer County	Caltrans
Interstate 80	Highway 65 to Sierra College Boulevard	Roseville, Rocklin	Placer County	Caltrans
Interstate 80	Highway 65 to Eureka Road	Roseville, Rocklin	Placer County	Caltrans

Roadway – STAA Federal Route

Hammonton-Smartville Road

Hammonton-Smartville Road is an east-west roadway that runs from State Highway 20 to Chestnut Road (beneath Scenic Route 70). It is classified as a collector roadway. Hammonton-Smartville Road consists of two undivided lanes. There is limited paved shoulder and minimal pavement markings. The posted speed limit is 35 mph from North Beale Road to Dunning Avenue and then increases to 55 mph from Dunning Avenue to the Teichert Industries location. The land use along the roadway is predominantly agricultural.

Major intersections along Hammonton-Smartville Road include:

<u>Hammonton-Smartville Road at North Beale Road:</u> The Hammonton-Smartville Road at North Beale Road intersection consists of four intersection legs. The North Beale approaches have an exclusive left turn lane, two through lanes, and a

channelized right turn lane. The Hammonton-Smartville Road approaches have one exclusive left turn lane, one through lane, and a channelized right turn lane. Pedestrian crosswalks are provided across all four intersection approaches with pedestrian pushbuttons and signal heads. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

North Beale Road
North Beale Road is an east-west roadway in the City of Marysville that runs from Hammonton-Smartville Road to the Highway 70 westbound on-ramp. It is classified as a minor arterial. The roadway consists of four, undivided lanes. A center turn lane is provided intermittently along the roadway. A marked bicycle lane is present on both sides of the segment with the Folsom DS/FDR study area. The posted speed limit is 35 mph. Land use in the area is mixed use residential, commercial and retail.

Major intersections along North Beale Road include:

North Beale Road at Hammonton-Smartville Road: The North Beale Road at Hammonton-Smartville Road intersection consists of four intersection legs. The North Beale Road approaches have an exclusive left turn lane, two through lanes, and a channelized right turn lane. The Hammonton-Smartville Road approaches have one exclusive left turn lane, one through lane, and a channelized right turn lane. Pedestrian crosswalks are provided across all four intersection approaches with pedestrian pushbuttons and signal heads. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

North Beale Road at Lindhurst Avenue: The North Beale Road at Lindhurst Avenue intersection consists of four intersection legs. The North Beale Road southbound approach has an exclusive left turn lane, two through lanes, and two right turn lanes which are channelized well away from the intersection. The North Beale Road westbound approach has one exclusive left turn lane, a shared left/through lane, one through lane, and a channelized right turn lane. Lindhurst Avenue approaches eastbound; it consists of one exclusive left turn lane, one through lane, and a channelized right turn lane. The forth approach is a driveway for a retail center and has one left turn lane, two through lanes, and a channelized right turn lane. Bike lanes are present on all of the intersection approaches. Pedestrian crosswalks are provided across the Lindhurst Avenue and driveway approaches. Pushbuttons and signal heads are also provided for pedestrian access. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

North Beale Road at Walmart Drive***:*** The North Beale Road at Walmart Drive intersection consists of four intersection legs. The North Beale Road approaches have an exclusive left turn lane, one through lane, and a shared through/right lane. The Walmart Drive approach consists of one shared left/through lane and an exclusive right turn lane. The driveway approach has one shared left/through/right lane. Crosswalks are provided on all approach legs with pushbuttons and pedestrian signals. A bicycle lane is marked on the North Beale Road legs. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

North Beale Road at Feather River Boulevard: The intersection of North Beale Road and Feather River Boulevard consists of four approach legs. The North Beale Road westbound approach has one exclusive left turn lane, a through lane, and a shared through/right lane. The eastbound North Beale Road approach consists of one exclusive left turn lane and two through lanes; a right turn lane is present further to west of the intersection keeping those vehicles out of the intersection traffic stream. The Feather River Boulevard approach has one shared left/through lane and a channelized right turn lane. The forth leg of the intersection is a driveway approach with a shared left/through lane and an exclusive right turn lane. Pedestrian crosswalks and pushbuttons are provided on all four intersection approaches. A bicycle lane is marked on the North Beale Road approaches. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

Feather River Boulevard

Feather River Boulevard is a north-south roadway that connects North Beale Road in the City of Marysville to Highway 70 south of the city. It is classified as a collector roadway. Within the study area, Feather River Boulevard has sidewalks provided on both sides of the roadway. The roadway consists of four, undivided lanes.

Major intersections along Feather River Boulevard include:

Feather River Boulevard at North Beale Road: The intersection of Feather River Boulevard at North Beale Road consists of four approach legs. The North Beale Road westbound approach has one exclusive left turn lane, a through lane, and a shared through/right lane. The eastbound North Beale Road approach consists of one exclusive left turn lane and two through lanes; a right turn lane is present further to west of the intersection keeping those vehicles out of the intersection traffic stream. The Feather River Boulevard approach has one shared left/through lane and a channelized right turn lane. The forth leg of the intersection is a driveway approach with a shared left/through lane and an exclusive right turn lane. Pedestrian crosswalks and pushbuttons are provided on all four intersection approaches. A bicycle lane is marked on the North Beale Road approaches. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

Scenic Route 70

Scenic Route 70 is an east-west highway that connects Route 99 near Sacramento to Highway 395 north of Reno, Nevada. It is part of both the California Freeway and Expressway system and the Scenic Route system. The freeway section of Highway 70 ends at the North Beale/Feather River Road exits and then continues east as a scenic route. Scenic Route 70 is classified as principal arterial with a posted speed limit of 65 mph. It is a four-lane divided highway from the North Beale/Feather River Road exit south to the junction with Highway 65.

Scenic Route 65

Scenic Route 65 is a north-south state highway composed of two sections connecting Bakersfield to Exeter and Roseville to Yuba City. A highway section to connect the two pieces has not been constructed. Highway 65 is part of the California Freeway and Expressway system. The section of Highway 65 used as a regional haul route – between Highway 70 and Interstate 80 – is classified as a principal arterial. It consists of two, undivided lanes with varying shoulder width. The posted speed limit varies along the route, from low 25-30 mph sections through higher population areas to 55-65 mph sections through the rural/agricultural areas.

Major intersections along Scenic Route 65 include:

<u>Highway 65 at 7th Street:</u> The Highway 65 at 7th Street intersection consists of four intersection approaches. All four approaches have the same lane configuration: one left turn lane and one shared through/right turn lane. Sidewalks are present on both sides of all intersection approaches. Pedestrian crosswalks and pushbuttons are also present. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

<u>Highway 65 at 5th Street:</u> The Highway 65 at 5th Street intersection has four approaches. The northbound and southbound Highway 65 legs both consist of an exclusive left turn lane and a shared through/right turn lane. The eastbound 5th Street approach has one shared use lane; the westbound approach has an exclusive left turn lane and a shared through/right turn lane. There are sidewalks on both sides of all approaches. Pedestrian crosswalks and pushbuttons are also provided for all intersection legs. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

<u>Highway 65 at McBean Park Drive:</u> The intersection of Highway 65 at McBean Park Drive has four approach legs. The northbound Highway 65 approach consists of an exclusive left turn lane and a shared through/right turn lane. The southbound Highway 65 approach is a single shared use lane. McBean Park Drive eastbound has a left turn lane and a shared through/right turn lane; westbound is a single shared use

lane. All of the Highway 65 at McBean Park Drive approaches has pedestrian crosswalks and pushbuttons. Sidewalks are provided on all legs to the intersection. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

<u>Highway 65 at 3rd Street:</u> The Highway 65 at 3rd Street intersection consists of four approaches. The four approaches all have the same lane configuration with one left turn lane and a shared through/right turn lane. Sidewalks are present on both sides of all of the Highway 65 at 3rd Street approaches. Pedestrian accommodations, both crosswalks and pushbuttons, are also provided on all intersection legs. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

<u>Highway 65 at 1st Street:</u> The intersection of Highway 65 at 1st Street has four approach legs. Each approach consists of one left turn lane and a shared through/right turn lane. Crosswalks with pedestrian pushbuttons are provided for each intersection approach. Sidewalks are present along both sides of each leg. Recent capacity analysis data for this intersection were not evident in the information, contacts, and documents reviewed as part of the traffic study for the Folsom DS/FDR action.

Interstate 80

Interstate 80 is the second-longest interstate highway in the United States. The section of Interstate 80 located within the study area runs from Eureka Road to Sierra College Boulevard in a predominantly north-south direction within the analysis area, but, in general, is considered an east-west route. It is classified as a freeway. Interstate 80 consists of six lanes, divided by barriers, within the analysis area with acceleration/deceleration lanes at the interchanges.

Major intersections with Interstate 80 ramps include:

<u>Eureka Road at Taylor Road and the Interstate 80 Off-Ramp:</u> The intersection of Eureka Road at Taylor Road and Interstate 80 has four intersection approaches. The northbound Eureka Road approach consists of three through lanes and a channelized right turn lane. The southbound Eureka Road approach has one exclusive left turn lane, and two though lanes. The Taylor Road westbound approach consists of two exclusive left turn lanes and one exclusive right turn lane. The Interstate 80 off-ramp approach eastbound has one exclusive left turn lane, one through lane, and a channelized right turn lane. Sidewalks are present on both sides of the Taylor Road approach and the Eureka Road northbound approach. Crosswalks are marked across all four legs of the intersection. The Eureka Road at Taylor Road and Interstate 80 intersection is signalized and includes pedestrian signal heads and pushbuttons. This

intersection currently experiences a LOS D during the peak hour period as illustrated in the Circulation Element of the City of Roseville General Plan.

Sierra College Boulevard at Interstate 80 Ramps: The Sierra College Boulevard at Interstate 80 Ramps intersection consists of three approaches. The northbound Sierra College Boulevard approach has one left turn lane and one through lane. The southbound Sierra College Boulevard approach has a through lane and an exclusive right turn lane. The Interstate 80 eastbound approach consists of one left turn lane and a right turn lane. There are no sidewalks at this intersection location; however, crosswalks are provided across the Sierra College northbound and Interstate 80 approaches. These crossings have pedestrian pushbuttons and signals. This intersection currently experiences a LOS D during the peak hour period as illustrated in the Circulation Element of the City of Roseville General Plan.

Douglas Boulevard

Douglas Boulevard is an east-west roadway and is functionally classified as an Arterial. Douglas Boulevard consists of three lanes in each direction, divided, from Interstate 80 to Sierra College Boulevard. Between Sierra College Boulevard and Auburn-Folsom Road, Douglas Boulevard consists of two lanes in each direction. Continuing east, it further narrows to a two-lane undivided roadway. Land uses along much of the roadway are offices and commercial to Sierra College Boulevard; residential/vacant/open space with limited commercial between Sierra College Boulevard and Auburn-Folsom Road; and primarily residential east of Auburn-Folsom Road. Douglas Boulevard west of Interstate 80 is 2 lanes in each direction through heavily developed and densely populated areas.

A full description of major intersections on Douglas Boulevard can be found above in the description of Local Access Routes.

Eureka Road

Eureka Road is a north-south roadway; within the Folsom DS/FDR study area it begins at the intersection of Eureka Road and Douglas Boulevard and ends at the Interstate 80 interchange intersection. It is classified as an arterial. The roadway consists of six lanes, divided, with marked bicycle lanes on both sides. The posted speed limit within the Folsom DS/FDR limits is 45 mph. Land use along much of the roadway is predominantly commercial/retail and large office space.

Full intersection descriptions for the locations on Eureka Road can be found above in the description of Local Access Routes.

Sierra College Boulevard

Sierra College Boulevard is a north-south roadway that begins at its intersection with Hazel Avenue and Old Auburn Road and continues north to Interstate 80 and ends at the Caperton Reservoir. From Old Auburn Road to Seymour Place, Sierra College

Boulevard is a four-lane divided roadway. At Seymour Place, the northbound side reduces to one lane. Sierra College Boulevard continues as a three-lane divided roadway to the Rocklin line north of Olympus Drive where it further reduces to a two-lane undivided roadway. Sierra College Boulevard is posted at 45 mph through the Folsom DS/FDR area. Land use along much of the roadway varies from residential to commercial/retail.

A description of major intersections on Sierra College Boulevard can be found in the local haul routes section above.

Auburn-Folsom Road
Auburn-Folsom Road is functionally classified as an urban arterial and provides north-south access between the cities of Auburn to the north and Folsom to the south. Beginning at the intersection of Greenback Lane/Riley Street/Folsom Boulevard, Auburn-Folsom Road is a four-lane divided roadway. Heading north, Auburn-Folsom Road continues with two lanes in each direction, becoming an undivided roadway outside of the City of Folsom limits, to its intersection with Folsom Dam Road. Continuing north, Auburn-Folsom Road narrows to one lane in each direction, crosses the Sacramento/Placer County line, and remains a two-lane undivided roadway to the Douglas Boulevard intersection. The speed limit is posted at 50 mph. Land use along Auburn-Folsom Road is mixed; commercial, residential and light industrial, however in downtown Folsom the land use becomes mainly commercial.

A description of major intersections on Auburn-Folsom Road can be found in the local haul routes section above.

Access Route Incident (Collision) History
Incident or collision history along the local access routes has been collected and analyzed for the most recent three-year period available. The purpose of the collision analysis is to identify routes that may currently experience safety concerns as demonstrated by a high number of incidents. If a corridor currently experiences substantial safety concerns, the corridor may be ruled out as an access route to avoid a potential increase in collisions due to the construction traffic from the Folsom DS/FDR action, or the Folsom DS/FDR action may provide safety improvements as mitigation measures if there are no alternative routes available.

Collision rates at individual intersections have not been calculated. Instead, the intersection collision numbers have been included in the corridor collision rates. Including these collisions within the calculation will cause the corridor collision rate to be higher; however, it will help represent a conservative value for each roadway.

The Hundred Million Vehicle Miles traveled (HMVM) crash rate was determined for each roadway segment within the Folsom DS/FDR study area as a method of demonstrating overall corridor safety. Based on the latest three years of crash data available, crash rates should be calculated for roadway segments based on HMVM as follows:

HMVM = (A x 100,000,000)/ (ADT x D x L)

A = number of total crashes at the study location during a given period

ADT = Average Daily Traffic

D = number of days in the study period

L = length of study location in miles

The results of these calculations are contained in Table 3.9-5.

Based on the most recent motor vehicle safety data from the National Highway Traffic Safety Administration (NHSTA), there was a national average crash rate of 221 crashes per hundred million vehicle miles traveled in 2002. Thus, any rate higher than 221 may be indicative of a safety concern. A review of the collision data indicates that the following roadways may pose potential safety concerns relative to the selection of haul routes:

- Douglas Boulevard – Eureka Road to Sierra College Boulevard
- Douglas Boulevard – Barton Road to Auburn-Folsom Road
- East Bidwell Street – Blue Ravine Road to Oak Avenue Parkway
- Folsom Boulevard – Natoma Street to Blue Ravine Road/US 50 to Greenback Lane

Again, the calculations prepared include collisions that occurred at major intersections, which are typically not included in the HMVM calculation. Therefore, the results of the collision analysis are conservative (i.e., high). Specific intersection ‘crash rates’ are typically calculated separately from the HMVM.

Table 3.9-5 Accident History - Corridor Collision Rate					
		2006			
		No Action/No Project			
Roadway	Location	ADT	Accidents [1]	Length of Roadway Section (miles)	Accident Rate [2]
Folsom Boulevard	Natoma Street to Blue Ravine Road	38,398			
Folsom Boulevard	US50 to Greenback Lane	34,900	296	3.10	227.10
Folsom-Auburn Road	Oak Hill Drive to Folsom Dam Road	32,292			
Folsom-Auburn Road	Folsom Dam Road to Oak Avenue	29,591	162	2.20	208.25
Auburn-Folsom (A-F) Road	Douglas Boulevard to Eureka Road	31,563			
Auburn-Folsom (A-F) Road	Eureka Road to Oak Hill Drive	27,097	88	1.76	144.67
Blue Ravine Road	Folsom Boulevard to Sibley Street	19,410	24	0.73	154.69
Blue Ravine Road	Sibley Street to Riley Street	29,631	33	0.77	132.09
Blue Ravine Road	Oak Avenue Parkway to Green Valley Road/East Natoma Street	19,122	25	3.07	38.89
East Natoma St	Cimmaron Circle to Folsom Dam Road	19,967	11	0.81	62.11
East Natoma St	Folsom Dam Road to Green Valley Road	18,054	17	1.27	67.71
Natoma St	Folsom Blvd to Cimmaron Circle	~~	154	1.58	~~
Green Valley Road	East Natoma Street to Sophia Parkway	26,681	~~	1.20	~~
Greenback Lane	Hazel Avenue to Madison Avenue	24,390	32	1.63	73.51
Greenback Lane	Madison Avenue to Folsom Blvd	~~	43	1.04	
Douglas Boulevard	Eureka Road to Sierra College	12,800	81	1.12	515.99
Douglas Boulevard	Barton Road to A-F Road	37,452	164	1.01	395.94
Sierra College Boulevard	between I-80 and Douglas Boulevard	24,549	~~	~~	~~
Eureka Road	between I-80 and Douglas Boulevard	37,774	~~	~~	~~
Oak Avenue	Hazel Avenue to Santa Juanita Avenue	10,620	~~	~~	~~
East Bidwell Street	Blue Ravine Road to Oak Avenue Parkway	26,216	76	0.99	267.42
East Bidwell Street	Clarksville Road to Iron Point Road	36,371	40	1.00	100.44
Oak Avenue Parkway	Blue Ravine Road to East Bidwell Street	18,586	12	0.94	62.73
Oak Avenue Parkway	East Bidwell St to Riley St	12,145	3	0.38	59.36
Scott Road (south)	south of White Rock Road	1,604	~~	~~	~~
White Rock Road	between Scott Road (south) and Scott Road (north)	8,822	~~	~~	~~
Scott Road (north)	north of White Rock Road	6,140	~~	~~	~~
US50	Hazel Avenue to Folsom Boulevard	116,811	~~	~~	~~
US50	Folsom Boulevard to Prairie City Road	98,424	~~	~~	~~
US50	Prairie City Road to East Bidwell Street	75,161	~~	~~	~~
US50		82,051	~~	~~	~~
Regional Access Routes					
Hammonton-Smartville (H-S) Road		8,780	~~	~~	~~
N Beale Road		26,995	~~	~~	~~
Feather River Blvd.		0	~~	~~	~~
Highway 70	Yuba County, east of Feather River Boulevard interchange	53,371	~~	~~	~~
Highway 65	Roseville, northeast of Route 80	94,382	~~	~~	~~
Highway 65	Lincoln, northeast of 7th Street	20,899	~~	~~	~~
Highway 65	Wheatland, northeast of Evergreen Drive	21,910	~~	~~	~~
Interstate 80	Roseville, northeast of Route 65	123,064	~~	~~	~~
Interstate 80	Rocklin, northeast of Sierra College Boulevard	101,846	~~	~~	~~

[1] Accident totals represent most recent 3-years of available information
[2] Accident Rate is skewed high due to accidents at intersections being included in the calculation

3.9.2 Environmental Consequences/Environmental Impacts

3.9.2.1 Assessment Methods of Future Traffic Conditions

While a typical traffic impact analysis for a development project in the SACOG area would involve the use of trip modeling software such as MINUTP, the transportation impacts associated with the Folsom DS/FDR are only related to the construction elements of the project. No long-term or permanent traffic volume increases or long-term changes in traffic patterns are expected as a result of the Folsom DS/FDR. Therefore, any incremental transportation impacts associated with the Folsom DS/FDR are limited to the proposed construction years. According to the schedule, the Folsom DS/FDR is expected to be under construction from 2007 through 2014. Therefore, the analysis years include all construction years from Folsom DS/FDR startup in 2007 to Folsom DS/FDR completion in 2014, as well as the 2006 baseline conditions required by CEQA.

Two components of traffic growth are typically considered when evaluating future year conditions. First, an annual background growth rate is determined based on historical data. Second, any increase in traffic volumes expected from approved development projects are added into the network.

However, given the size of the Folsom DS/FDR area and the varying full buildout dates of the multitude of projects expected in the region over the next 10 years, an individual breakdown of traffic growth factors along every roadway in the Folsom DS/FDR area is beyond the scope of this analysis.

Instead, the SACOG Projections Data Set, approved by the Board of Directors December 16, 2004, has been utilized to develop an appropriate growth rate. Table 3.9-6 illustrates the expected population, household and job growth projects; growth rates vary widely throughout the region. The growth rates can be broken down into the two distinct project areas studied for the Folsom DS/FDR: Local Routes and Regional Routes.

According to the projections, with the exception of the Roseville jobs projection, the Local Access Routes area is generally expected to experience a growth rate of 3% or less per year for the next five years (2010), and 2% or less per year for the following five years (2015). Therefore, a conservative annual growth rate for the local routes has been selected as 3% per year compounded through 2010 and 2% per year compounded through 2015. Impacts associated with potential developments in the study area are already incorporated in the population, household and job growth rates. Consequently, only the growth rate will be applied to each construction year with no additional development project-specific traffic volume increases.

Table 3.9-6 ***SACOG Projections Adopted 12.16.04 for Jurisdictions 2005 - 2015***															
	2005 *			**2010**						**2015**					
	Population	**Households**	**Jobs**	**Population**		**Households**		**Jobs**		**Population**		**Households**		**Jobs**	
					% increase per year from 2005		**% increase per year from 2005**		**% increase per year from 2005**		**% increase per year from 2010**		**% increase per year from 2010**		**% increase per year from 2010**
El Dorado County	147,045	56,111	51,644	159,422	**1.63%**	59,074	**1.03%**	58,267	**2.44%**	171,212	**1.44%**	64,526	**1.78%**	61,988	**1.25%**
Unincorp. El Dorado County	136,974	51,819	38,241	148,169	**1.58%**	54,488	**1.01%**	43,837	**2.77%**	158,772	**1.39%**	59,444	**1.76%**	47,467	**1.60%**
Placer County	301,560	121,507	156,237	330,381	**1.84%**	128,711	**1.16%**	180,607	**2.94%**	358,488	**1.65%**	141,461	**1.91%**	196,896	**1.74%**
Lincoln	26,661	11,741	6,158	28,364	**1.25%**	11,644	**-0.17%**	8,354	**6.29%**	29,883	**1.05%**	11,926	**0.48%**	10,405	**4.49%**
Rocklin	52,035	19,999	15,003	56,765	**1.76%**	21,038	**1.02%**	17,349	**2.95%**	61,338	**1.56%**	22,961	**1.76%**	19,042	**1.88%**
Roseville	104,136	42,244	66,250	107,038	**0.55%**	42,379	**0.06%**	80,211	**3.90%**	108,692	**0.31%**	43,976	**0.74%**	91,013	**2.56%**
Sacramento County	1,361,637	502,142	657,100	1,454,596	**1.33%**	525,837	**0.93%**	734,253	**2.25%**	1,539,049	**1.14%**	571,255	**1.67%**	775,273	**1.09%**
Unincorp. Sacramento County	540,521	201,673	225,261	564,736	**0.88%**	207,112	**0.53%**	235,388	**0.88%**	583,772	**0.67%**	220,474	**1.26%**	231,365	**-0.34%**
Folsom	67,325	23,178	31,654	70,372	**0.89%**	23,971	**0.68%**	34,981	**2.02%**	72,778	**0.67%**	25,709	**1.41%**	36,453	**0.83%**
Yuba County	65,952	21,533	22,988	75,792	**2.82%**	24,880	**2.93%**	28,751	**4.58%**	85,979	**2.55%**	29,619	**3.55%**	33,752	**3.26%**
Marysville	12,916	4,727	8,982	13,314	**0.61%**	4,839	**0.47%**	10,235	**2.65%**	13,563	**0.37%**	5,134	**1.19%**	10,899	**1.27%**
Wheatland	3,698	1,219	365	4,847	**5.56%**	1,596	**5.54%**	683	**13.34%**	6,100	**4.71%**	2,090	**5.53%**	1,028	**8.52%**

** Note that the base year population numbers are estimates made by the State Department of Finance's Demographic Research Unit*

Local Routes

Regional Routes

Source: http://www.sacog.org/demographics/projections/index.cfm

According to the projections, with the exception of the Marysville area, the Regional Access Routes area is generally expected to experience substantial growth between 2005 through 2015. Based on the data illustrated by SACOG, a 6% per year compounded growth rate would be applicable to the Regional Access Routes. However, since the regional routes involve a larger area of influence than the local access routes, historical traffic volume data from Caltrans has been evaluated. Table 3.9-7 illustrates the historical traffic growth data over the past ten years, and the past five years. According to this research near the communities of Lincoln and Wheatland, traffic volumes along Highway 65 have grown 8 to 9% per year over the past five years and 6% per year over the past ten years. Highway 65 near Interstate 80 has experienced traffic growth of 11% per year over the past five years and 12% per year over the past 10 years. Contrarily, Interstate 80 in Rocklin and Roseville has experienced a consistent 2 to 4% annual growth in traffic volumes since 1994.

Therefore, varying growth rates are applied to the regional routes, as these routes involve a larger area of influence. A 6% annual growth rate is applied to Highways 65 and 70, while the 3%/2% annual growth rate applied to the local access routes will be applied to Interstate 80 and the roadways in Marysville.

Hereon, sections of the Folsom Bridge EIS/EIR are incorporated by reference into this analysis. This document is available for public review at local Corps offices, City of Folsom, and online at http://www.folsom.ca.us/about/whats_new/bridge.asp. Table 3.9-8 illustrates the No Action/No Project traffic volumes expected along each route evaluated in the Folsom DS/FDR study area. Given the smaller scope of the Folsom Bridge Project relative to the Folsom DS/FDR, the Folsom Bridge EIR/EIS analysis applied 'site specific' growth rates to each roadway studied. These individual growth rates were applied to each roadway studied in the Folsom DS/FDR action to determine the 2007 baseline conditions for No Action Alternative and Alternatives 1 through 5. If the Folsom Bridge EIS/EIR did not include one of the Folsom DS/FDR study roadways, then the 2006 baseline data was determined by applying the background growth rates as described above. The CEQA baseline 2006 traffic volume data for the Folsom DS/FDR was established by interpolating between the 2004 and 2007 No Action Alternative Folsom Bridge EIS/EIR data.

Table 3.9-8 illustrates the future traffic volumes expected along the local and regional access routes without implementation of the Folsom DS/FDR. Furthermore, Table 3.9-8 also illustrates the expected LOS based on the facility type code expected to be in place during each analysis year (i.e., in terms of the number of lanes and type of roadway expected to be in place, such as a two-lane undivided arterial road coded as "2AU", or a four-lane divided arterial "4AD", or a freeway "F", etc.). Most of the codes illustrated in Table 3.9-8 are provided in the Folsom Bridge EIS/EIR for 2004 as well as 2007. The Folsom Bridge EIS/EIR determined facility type code and LOS for 2004, 2007 and 2025.

Table 3.9-7 Historical Traffic Data - Background Growth Rates												
				1994	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*	*1994-2004*	*1999-2004*
Route	*County*	*Postmile*	*Description*	*AADT*	*AADT*	*AADT*	*AADT*	*AADT*	*AADT*	*AADT*	*% increase per year over 10 years*	*% increase per year, most recent 5 years*
65	Placer	4.86	Roseville, Jct. Rte. 80	27,000	50,000	56000	60000	60000	70000	84000	12%	11%
65	Placer	14.05	Lincoln, 7th Street	10,800	12,500	14200	14200	14200	16600	18600	6%	8%
65	Yuba	1.5	Wheatland, Evergreen Drive	10,500	12,900	14200	14200	14200	18200	19500	6%	9%
70	Yuba	0.35	Feather River Boulevard	10,000	11,600	37500	11600	40000	12600	13000	3%	2%
80	Placer	4.16	Roseville, Jct. Rte. 65	80,000	96,000	109000	103000	10300	10800	116000	4%	4%
80	Placer	7.42	Rocklin, Sierra College Blvd	77,000	87,000	93000	85000	90000	90000	96000	2%	2%

AADT = Annual Average Daily Traffic
Source: http://traffic-counts.dot.ca.gov/

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Table 3.9-8
No Action/No Project Traffic Volume Data

Local Access Routes

Roadway	Location	Route Designations: Materials, Equipment, Batch Plant Routes	Route Designations: Worker Routes	*Existing Conditions 2002 ADT	*Existing Conditions 2003 ADT	*Existing Conditions 2004 ADT	*Existing Conditions 2005 ADT	*Existing code	*Existing LOS	2006 (Interpolated) ADT	2006 code	2006 LOS	2007* Folsom Bridge No Action Alternative ADT	2007* No Action code	2007* No Action LOS	2007* Folsom Bridge Allternatives 2-5 ADT	2007* Alt. 2-5 code	2007* Alt. 2-5 LOS	2008 ADT (3% per year background growth)	2008 code	2008 LOS	2009 ADT (3% per year background growth)	2009 code	2009 LOS	2010 ADT (2% per year background growth rate)	2010 code	2010 LOS	2011 ADT	2011 code	2011 LOS	2012 ADT	2012 code	2012 LOS	2013 ADT	2013 code	2013 LOS	2014 ADT	2014 code	2014 LOS
Folsom Boulevard	Natoma Street to Blue Ravine Road		W-3A, W-5A, W-6A, W-3B, W-5B, W-6B, W-3C, W-5C, W-6C, W-3D, W-5D, W-3E, W-5E			37,800		4AD	F	38,398	4AD	F	38,700	4AD	F	37,800	4AD	F	38,934	4AD	F	40,103	4AD	F	40,906	4AD	F	41,725	4AD	F	42,560	4AD	F	43,412	4AD	F	44,715	4AD	F
Folsom Boulevard	Leidesdorff Street to Greenback Lane		W-3A, W-5A, W-6A, W-3B, W-5B, W-6B, W-3C, W-5C, W-6C			34,900		4AD	D	34,900	4AD	D	38,000	4AD	F	32,600	4AD	D	33,578	4AD	D	34,586	4AD	D	35,278	4AD	D	35,984	4AD	E	36,704	4AD	E	37,439	4AD	F	38,563	4AD	F
Folsom-Auburn Road	Oak Hill Drive to Folsom Dam Road	A-4, O-4, BP-1	W-1C, 2C, 3C, 4C, 5C, 6C, 7C, 1D,2D, 2E, W-3A, 5A, 6A, 3B, 5B,			31,300		2A	F	32,292	2A	F	32,800	4AU	F	40,300	4AU	F	41,509	4AU	F	42,755	2A	F	43,611	2A	F	44,484	2A	F	45,374	2A	F	46,282	2A	F	47,671	2A	F
Folsom-Auburn Road	Folsom Dam Road to Oak Avenue		W-3A, 5A, 6A, 7A, 3B, 4B, 5B, 6B, 7B, 1E, 2E, 5C			28,600		4AU	E	29,591	4AU	F	30,100	4AU	F	21,400	4AU	D	22,042	4AU	D	22,704	4AU	D	23,159	4AU	D	23,623	4AU	D	24,096	4AU	D	24,578	4AU	D	25,316	4AU	D
Auburn-Folsom (A-F) Road	Douglas Boulevard to Eureka Road	A-2,A-3,A-4, O-2, O-3, O-4, BP-1	W-3A, 5A, 6A, 7A, 1B, 2B, 3B, 4B, 5B, 6B, 7B, 1C, 2C, 1D, 2D, 1E, 2E			30,900		2A	F	31,563	2A	F	31,900	4AU	F	34,300	4AU	F	35,329	4AU	F	36,389	4AU	F	37,117	4AU	F	37,860	4AU	F	38,618	4AU	F	39,391	4AU	F	40,573	4AU	F
Auburn-Folsom (A-F) Road	Eureka Road to Oak Hill Drive	A-2, A-3, O-2, O-3, BP-1	W-3A, 5A, 6A, 7A, 1B, 2B, 3B, 4B, 5B, 6B, 7B, 1C, 2C, 1D, 2D, 1E, 2E			26,500		2A	F	27,097	2A	F	27,400	2A	F	30,500	2A	F	31,415	2A	F	32,358	2A	F	33,006	2A	F	33,667	2A	F	34,341	2A	F	35,028	2A	F	36,079	2A	F
Sierra College	north of Douglas Boulevard	A-1, A-2, O-1, O-2	W-2A, W-2B, W-2C, W-2D, W-2E		22,465	23,139		4AD	C	24,549	4AD	C	25,286	4AD	C	25,286	4AD	C	26,045	4AD	C	26,827	4AD	C	27,364	4AD	C	27,912	4AD	C	28,471	4AD	C	29,041	4AD	C	29,913	4AD	C
Eureka Road	east of N. Sunrise Avenue	A-3, A-4, O-3, O-4, BP-1			34,568	35,605		6AD	C	37,774	6AD	C	38,908	6AD	C	38,908	6AD	C	40,076	6AD	C	41,279	6AD	C	42,105	6AD	C	42,948	6AD	C	43,807	6AD	C	44,684	6AD	C	46,025	6AD	C
Douglas Boulevard	east of A-F Road	A-1,O-1	W-1A, W-2A, W-3A, W-4A, W-5A, W-6A, W-7A					2A	C	12,800	2A	C	13,184	2A	C	13,184	2A	C	13,580	2A	C	13,988	2A	C	14,268	2A	C	14,554	2A	C	14,846	2A	C	15,143	2A	C	15,598	2A	C
Douglas Boulevard	Barton Road to A-F Road	A-1, A-2, A-3, A-4, O-1, O-2, O-3, O-4, BP-1	W-1A, W-2A, W-4A, W-1B, W-2B, W-4B, W-1C, W-2C, W-1D, W-2D, W-1E, W-2E			36,000		4AD	E	37,452	4AD	F	38,200	4AD	F	40,200	4AD	F	41,406	4AD	F	42,649	4AD	F	43,502	4AD	F	44,373	4AD	F	45,261	4AD	F	46,167	4AD	F	47,553	4AD	F
Douglas Boulevard	Barton to Sierra Colleg Blvd.				41,305	42,544		4AD	F	45,136	4AD	F	46,491	4AD	F	46,491	4AD	F	47,886	4AD	F	49,323	4AD	F	50,310	4AD	F	51,317	4AD	F	52,344	4AD	F	53,391	4AD	F	54,993	4AD	F
Blue Ravine Road	Oak Avenue Parkway to Green	A-5, A-6,O-5, O-6, BP-2,	W-6D, W-6E			18,200		4AD	C	19,122	4AD	C	19,600	4AD	D	19,500	4AD	D	20,085	4AD	D	20,688	4AD	D	21,102	4AD	D	21,525	4AD	D	21,956	4AD	D	22,396	4AD	D	23,068	4AD	D
East Natoma St	Cimmaron Circle to Folsom Dam Road		W-1D, 3D, 4D, 5D, 1E, 2E, 3E, 4E, 5E			18,400		2A	E	19,967	2A	F	20,800	4AU	D	16,600	4AU	C	17,098	4AU	D	17,611	4AU	E	17,964	4AU	E	18,324	4AU	E	18,691	4AU	E	19,065	4AU	F	19,637	4AU	F
East Natoma St	Folsom Dam Road to Green Valley Road	A-5, A-6,O-5, O-6, BP-2, BP3	W-7A, 7B, 7C, 1D,2D,3D,4D,5D,6D,7D, 1E, 2E, 3E, 4E, 5E, 6E			16,300		2A	D	18,054	2A	E	19,000	4AU	D	27,100	4AU	D	27,913	4AU	F	28,751	4AU	F	29,327	4AU	F	29,914	4AU	F	30,513	4AU	F	31,124	4AU	F	32,058	4AU	F
Green Valley Road	East Natoma Street to Sophia Parkway	A-6, O-6	W-1E, W-2E, W-3E, W-4E, W-5E, W-6E			24,400		2A	F	26,681	2A	F	27,900	4AU	D	32,000	4AU	F	32,960	4AU	F	33,949	4AU	F	34,628	4AU	F	35,321	4AU	F	36,028	4AU	F	36,749	4AU	F	37,852	4AU	F
Greenback Lane	Hazel Avenue to Madison Avenue		W-4B, W-4C, W-4D, W-4E			23,400		4AMD	B	24,390	4AMD	B	24,900	4AMD	B	24,100	4AMD	B	24,823	4AMD	B	25,568	4AMD	C	26,080	4AMD	C	26,602	4AMD	C	27,135	4AMD	C	27,678	4AMD	C	28,509	4AMD	C
East Bidwell Street	Clarksville Road to Iron Point Road	A-5, A-6, O-5, O-6, BP-2, BP-3	W-6D, W-6E			32,800		4AD	D	36,371	4AD	E	38,300	4AD	F	39,300	4AD	F	40,479	4AD	F	41,694	4AD	F	42,528	4AD	F	43,379	4AD	F	44,247	4AD	F	45,132	4AD	F	46,486	4AD	F
Oak Avenue Parkway	Blue Ravine Road to East Bidwell Street	A-5, A-6, O-5, O-6, BP-2, BP-3	W-6D, W-6E			17,600		6AD	C	18,586	6AD	C	19,100	6AD	C	22,200	6AD	C	22,866	6AD	C	23,552	6AD	C	24,024	6AD	C	24,505	6AD	C	24,996	6AD	C	25,496	6AD	C	26,261	6AD	C
Scott Road (south)	south of White Rock Road	A-5, A-6, BP-2, BP-3			1,468			2C	A/B	1,604	2C	A/B	1,652	2C	A/B	1,652	2C	A/B	1,702	2C	A/B	1,754	2C	A/B	1,790	2C	A/B	1,826	2C	A/B	1,863	2C	A/B	1,901	2C	A/B	1,959	2C	A/B
White Rock Road	between Scott Road (south) and Scott Road (north)	A-5, A-6, BP-2, BP-3					8,565	2C	C	8,822	2C	C	9,087	2C	D	9,087	2C	D	9,360	2C	D	9,641	2C	D	9,834	2C	E	10,031	2C	E	10,232	2C	E	10,437	2C	E	10,751	2C	E
Scott Road (north)	north of White Rock Road	A-5, A-6, BP-2, BP-3		5,455				2C	C	6,140	2C	C	6,324	2C	C	6,324	2C	C	6,514	2C	C	6,710	2C	C	6,845	2C	C	6,982	2C	C	7,122	2C	C	7,265	2C	C	7,483	2C	C
US50	Hazel Avenue to Folsom Boulevard	O-5, O-6	W-5A, W-5B, W-5C, W-5D, W-5E			111,800		4FA	F	116,811	4FA	F	119,400	4FA	F	116,800	4FA	F	120,304	4FA	F	123,914	4FA	F	126,393	4FA	F	128,921	4FA	F	131,500	4FA	F	134,130	4FA	F	138,154	4FA	F
US50	Folsom Boulevard to Prairie City Road	O-5, O-6	W-6A, W-6B, W-6C			94,400		4F	F	98,424	4F	F	100,500	4F	F	99,000	4F	F	101,970	4F	F	105,030	4F	F	107,131	4F	F	109,274	4F	F	111,460	4F	F	113,690	4F	F	117,101	4F	F
US50	Prairie City Road to East Bidwell Street	O-5, O-6	W-6A, W-6B, W-6C			71,800		4F	E	75,161	4F	E	76,900	4F	E	71,800	4F	E	73,954	4F	E	76,173	4F	E	77,697	4F	E	79,251	4F	E	80,837	4F	F	82,454	4F	F	84,928	4F	F
US50	East Bidwell St to County Line		W-6A, W-6B, W-6C, W-6D, W-6E			77,000		4F	E	82,051	4F	F	84,700	4F	F	81,900	4F	F	84,357	4F	F	86,888	4F	F	88,626	4F	F	90,399	4F	F	92,207	4F	F	94,052	4F	F	96,874	4F	F
Regional Access Routes																																							
													3% per year background growth												2% per year background growth rate														
Hammonton-Smartville (H-S) Road	north of N. Beale Road	A-1, A-2		7801						8,780	2C	C	9,043	2C	D	9,043	2C	D	9,315	2C	D	9,594	2C	D	9,786	2C	D	9,982	2C	E	10,181	2C	E	10,385	2C	E	10,593	2C	E
N Beale Road	south of H-S Road	A-1, A-2		23,985						26,995	4AU	C	27,805	4AU	D	27,805	4AU	D	28,639	4AU	D	29,499	4AU	E/F	30,088	4AU	F	30,690	4AU	F	31,304	4AU	F	31,930	4AU	F	32,569	4AU	F
Feather River Blvd. Ramp	south of N. Beale Street	A-1, A-2									4AU					0			0			0			0			0			0			0			0		
													6% per year background growth																										
Highway 70	Yuba County, east of Feather River Boulevard interchange	A-1, A-2				47,500				53,371	4AMD	F	56,574	4AMD	F	56,574	4AMD	F	59,969	4AMD	F	63,568	4AMD	F	67,383	4AMD	F	71,426	4AMD	F	75,712	4AMD	F	80,255	4AMD	F	85,071	4AMD	F
Highway 65	Roseville, northeast of Route 80	A-1, A-2				84,000				94,382	4F	F	100,046	4F	F	100,046	4F	F	106,049	4F	F	112,412	4F	F	119,157	4F	F	126,307	4F	F	133,886	4F	F	141,920	4F	F	150,436	4F	F
Highway 65	Lincoln, northeast of 7th Street	A-1, A-2				18,600				20,899	2A	F	22,153	2A	F	22,153	2A	F	23,483	2A	F	24,892	2A	F	26,386	2A	F	27,970	2A	F	29,649	2A	F	31,428	2A	F	33,314	2A	F
Highway 65	Wheatland, northeast of Evergreen Drive	A-1, A-2				19,500				21,910	2A	F	23,225	2A	F	23,225	2A	F	24,619	2A	F	26,097	2A	F	27,663	2A	F	29,323	2A	F	31,083	2A	F	32,948	2A	F	34,925	2A	F
													3% per year background growth												2% per year background growth rate														
Interstate 80	Roseville, northeast of Route 65	A-1, A-2, O-1, O-2				116,000				123,064	4FA	F	126,757	4FA	F	126,757	4FA	F	130,560	4FA	F	134,477	4FA	F	138,512	4FA	F	141,283	4FA	F	144,109	4FA	F	146,992	4FA	F	149,932	4FA	F
Interstate 80	Rocklin, south of Sierra College Boulevard	A-1, A-2, O-1, O-2				96,000				101,846	4FA	E/F	104,902	4FA	F	104,902	4FA	F	108,050	4FA	F	111,292	4FA	F	114,631	4FA	F	116,924	4FA	F	119,263	4FA	F	121,649	4FA	F	124,082	4FA	F

Source: American River Watershed Project Folsom Dam Raise, Folsom Bridge Supplemental EIS/EIR May 2006; El Dorado County online traffic volume data; 2004 Caltrans online traffic volume data; 2003 data source:http://maps.roseville.ca.us/trafficinfotool/

With the exception of Highway 65, 70 and Interstate 80 data, 2004 data from the Amer

2007 data from Bridge EIS/EIR year 2007

2006 data interpolated between 2004 and 2007 data from Folsom Bridge EIS/EIR May 2006

2004 data for Sierra College Boulevard and Eureka Road based on 3% growth rate applied to 2003 data.

*code and LOS information for Existing Conditions and 2007 provided in Bridge EIS/EIR.

X,XXX volumes based on 3% per year growth rate

X,XXX collected in April 2006

No Action/No Project Alternative assumes no major roadway reconstruction projects that modfiy roadway classification on the horizon for the project area.

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Specifically, the LOS designations were identified using Table 3-2 *Functional Class and Daily Roadway Segment LOS Thresholds* from the Bridge EIS/EIR, as developed by Fehr & Peers. Because the Folsom DS/FDR years are from 2007 through 2014, this analysis determined facility codes and LOS for remaining years not used in the Bridge EIS/EIR based on major roadway expansion projects described in the General Plans reviewed. A further discussion of LOS follows.

Level of Service

The evaluation of transportation impacts associated with any Folsom DS/FDR focuses on capacity analysis. A primary result of capacity analysis is the assignment of levels of service to traffic facilities under various traffic flow conditions. The capacity analysis methodology is based on the concepts and procedures in the *Highway Capacity Manual* (HCM).[1] The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels of service are defined for each type of facility. They are assigned letter designations from A to F, with LOS A representing the best operating conditions and LOS F the worst. Since the level of service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels of service, depending on the time of day, day of week, or period of year.

A description of the operating condition under each level of service is provided below:

- *LOS A* describes conditions with little to no delay to motorists.
- *LOS B* represents a desirable level with relatively low delay to motorists.
- *LOS C* describes conditions with average delays to motorists.
- *LOS D* describes operations where the influence of congestion becomes more noticeable. Delays are still within an acceptable range.
- *LOS E* represents operating conditions with high delay values. This level is considered by many agencies to be the limit of acceptable delay.
- *LOS F* is considered to be unacceptable to most drivers with high delay values that often occur, when arrival flow rates exceed the capacity of the intersection.

[1]*Highway Capacity Manual 2000*, Transportation Research Board; Washington, D.C.; 2001.

Roadway Segments
Fehr & Peers developed a listing of LOS thresholds based on daily volumes, number of lanes and facility type as presented in Table 3-2, of the Folsom Bridge EIS/EIR (Corps 2006b). These thresholds were calculated based on the HCM and will be used to evaluate roadway segment level of service for the purposes of this Folsom DS/FDR EIS/EIR.

Unsignalized Intersections
Levels of service for unsignalized intersections are calculated using the operational analysis methodology of the HCM. The procedure accounts for lane configuration on both the minor and major street approaches, conflicting traffic stream volumes, and the type of intersection control (STOP, YIELD, or all-way STOP control). The definition of level of service for unsignalized intersections is a function of average *control* delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The level-of-service criteria for unsignalized intersections are shown in Table 3.9-9.

Table 3.9-9
Local Access Route Existing Traffic Volumes and Arterial LOS

Level of Service	***Unsignalized Intersection Criteria*** Average Control Delay (Seconds per Vehicle)	***Signalized Intersection Criteria*** Average Control Delay (Seconds per Vehicle)
A	≤10	≤10
B	>10 and ≤15	>10 and ≤20
C	>15 and ≤25	>20 and ≤35
D	>25 and ≤35	>35 and ≤55
E	>35 and ≤50	>55 and ≤80
F	>50	>80

Source: *Highway Capacity Manual 2000,* Transportation Research Board, 2001, pages 16-2 and 17-2.

Signalized Intersections
Levels of service for signalized intersections are also calculated using the operational analysis methodology of the HCM. The methodology for signalized intersections assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on average *control* delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

Table 3.9-9 *LOS Criteria* summarizes the relationship between level of service and average control delay.

For signalized intersections, this delay criterion may be applied in assigning LOS designations to individual lane groups, to individual intersection approaches, or to the entire intersection. For unsignalized intersections, this delay criterion may be applied in assigning LOS designations to individual lane groups or to individual intersection approaches.

As illustrated in Table 3.9-9, a good LOS consists of minimal delays, while a poor LOS consists of extended delays. Delays can be correlated to the ratio between traffic volume and capacity. For example, if the volume of traffic approaching an intersection is greater than the capacity for that volume of traffic, the end result is a poor LOS. Conversely, if the volume of traffic approaching an intersection is significantly less than the capacity, the end result is a good LOS.

Assessment Periods

According to Caltrans' Guidelines for Preparation of Traffic Impact Studies, the following scenarios are typically evaluated:

- Existing Conditions - Current year traffic volumes and peak hour LOS analysis of effected State highway facilities.
- Proposed Project Only - Trip generation, distribution, and assignment in the year the Folsom DS/FDR is anticipated to complete construction.
- Cumulative Conditions (Existing Conditions Plus Other Approved and Pending Projects Without Proposed Project) - Trip assignment and peak hour LOS analysis in the year the Folsom DS/FDR is anticipated to complete construction.
- Cumulative Conditions Plus Proposed Project (Existing Conditions Plus Other Approved and Pending Projects Plus Proposed Folsom DS/FDR) - Trip assignment and peak hour LOS analysis in the year the Folsom DS/FDR is anticipated to complete construction.
- Cumulative Conditions Plus Proposed Phases (Interim Years) - Trip assignment and peak hour LOS analysis in the years the Folsom DS/FDR phases are anticipated to complete construction.

Transportation impacts associated with the Folsom DS/FDR are evaluated in two ways; one regarding average daily traffic and the other in terms of specific time periods during the day (i.e., hourly basis, as needed). The analysis is based on the following criteria:

- Material hauling activity will occur during normal work hours, from 7am to 3pm.
- Equipment hauling activity will occur during normal work hours, from 7am to 3pm.
- Two work shifts will operate as follows:
    - 5am to 2pm
    - 2pm to 11pm

The first component of the traffic impact analysis is an evaluation of the increase in traffic volumes on a daily basis. As illustrated earlier in Table 3.9-3, there are a variety of thresholds established by the communities and counties through which the project transportation components are expected to pass. Most of the thresholds focus on whether the existing LOS along a roadway is degraded by one or more letter grades due to project-related traffic, (i.e., LOS C to LOS D or worse). However, when a facility is already experiencing a LOS F, the Sacramento County guidelines illustrate that an increase in the Volume to Capacity (V/C) ratio by more than 0.05 is also of concern. And finally, El Dorado County presents the most stringent thresholds that include determining whether project-related traffic exceeds a 2% increase in traffic during the a.m. peak hour, p.m. peak hour, or daily.

Therefore, only those roadways that are expected to experience LOS deterioration, or currently operate at LOS F and would experience an increase in the V/C ratio of more the 0.05 due to the Folsom DS/FDR, or would experience an increase in daily traffic volumes of 2% or more would typically be evaluated for hourly impacts, which is normally the second component of detailed traffic impact analysis conducted for a specific project. At this time, however, given the variety of alternatives evaluated and access routes to the Folsom DS/FDR features currently being considered a programmatic level of planning, it is beyond the scope of this EIS/EIR to conduct such a peak hour analyses of the roads and intersections distributed throughout the study area.

The work shifts illustrated above result in four potential impact hours: 4a.m. to 5a.m.; 1p.m. to 2p.m.; 2p.m. to 3p.m.; and 11p.m. to 12a.m. Based on 24-hour existing traffic data volumes collected, the critical peak hours to be evaluated based on the worker schedule are 1p.m. to 2p.m. and 2p.m. to 3p.m. Therefore, hourly impacts associated with workers should only be evaluated for the higher of the two hourly periods. For example, if a Folsom DS/FDR roadway carries approximately 1,200 vehicles from 1p.m. to 2p.m., and 1,800 vehicles from 2p.m. to 3p.m., then only the 2p.m. to 3p.m. hour would be evaluated since the number of new worker trips would be the same for each hour (i.e., ten workers will arrive from 1p.m. to 2p.m., ten workers will depart from 2p.m. to 3pm).

Trip Generation

Expected traffic volume increases associated with a development project are typically determined using the Institute of Transportation Engineers (ITE) Trip Generation Manual, 7th Edition land use trip generation rates. However, there are no empirical data sources in the Manual related to construction activities. Alternatively, projects will typically collect local data to develop empirical data representative of the proposed development project.

Unfortunately, the Folsom DS/FDR and prior studies associated with it do not have empirical data sources available to determine the expected traffic volume increases due to construction activities. Instead, new trips have been determined by calculating the amounts of aggregate or 'raw' materials, and 'offsite' materials required for the Folsom DS/FDR. In addition, trip calculations are required for equipment deliveries and labor forces.

Aggregate and Offsite Materials

Aggregate materials include fine filters, coarse filters, cement, fine aggregate (for concrete), coarse aggregate (for concrete), road base, and asphalt. Offsite materials include Slope U/S, Toe Drain, HDPE Pipe, Pipe Filter, U/S Filter, Seeding, and rebar (steel) (see Chapter 2 for definitions). In order to determine the number of trips necessary to deliver the materials required, certain assumptions were made in assigning the number of trucks per material required based on the weight of each material being hauled.

Table 3.9-10 illustrates the assumptions made with respect to the weight of each material being hauled.

Table 3.9-10
Assumptions for Total Truck Calculations

Material	***Unit Weight***		***CY per Load***	***Use (CY/load)***	***Use Notes***	***Source***
Fine Filter	2,400	#/cy	20.83	20		UNB Transportation Group
Coarse Filter	2,800	#/cy	17.86	17		UNB Transportation Group
Slope Protection U/S face	3,300	#/cy	15.15	15		UNB Transportation Group
Toe Drain Pipe	30.8	#/20 ft	276.00	276	# pipes/per load	ADS Pipe
Road Base	2,700	#/cy	18.52	18		UNB Transportation Group
Asphalt	3,919	#/cy	12.76	12		National Asphalt Paving Association
Seeding (assume 1" depth)	304	#/cy		150	#/acre	FHWA BPMs for Sediment and Erosion Control; Univ. of Missouri Extension
8" HDPE Drain Pipe	30.8	#/20 ft	276.00	276	# pipes/per load	ADS Pipe
CIP Concrete	4,946	#/cy	10.11	10		See cement
Rebar (Steel Reinforcement)	490	#/cy		50,000	lbs. max	ASTM Standard (Rinker.com)
Cement	4,946	#/cy	10.11	10		Constructionwork.com
Coarse Filter for drain pipe	2,800	#/cy	17.86	17		UNB Transportation Group
Coarse Filter U/S bedding	2,800	#/cy	17.86	17		UNB Transportation Group

# = pounds
cy = cubic yards
ft = foot

Hauling materials will occur in two types of vehicles: the "California Transfer Dump" 20 cubic yard (CY) and a standard tractor trailer or flatbed. The capacity of each truck is not as critical in this exercise as is the weight limit of the proposed haul routes. Therefore, the following assumptions were made relative to the proposed truck use and weight limits:

- Standard hauling vehicle is a 20CY dump truck (10 wheel); weight =15 tons (30,000 pounds)
- Standard tractor weight = 7.5 tons (15,000 pounds)
- Standard flatbed trailer = 48 feet long x 102 inches wide; weight = 6.25 tons (12,500 pounds)
- Maximum allowed Gross Vehicle Weight (GVW) as per California Vehicle Code (CVC) = 40 tons (80,000 pounds)

However, additional weight restrictions on city and county streets can be imposed by the owning agency. For roadways with maximum allowed GVW less than 40 tons, waivers will be required. Table 3.9-11 illustrates the weight limits available for the proposed haul routes. Surface Transportation Assistance Act (STAA) routes require states to allow large trucks on identified routes. Large trucks include: (1) doubles with 28.5-foot trailers; (2) singles with 48-foot semi-trailers and unlimited kingpin-to-rear axle (KPRA) distance; (3) unlimited length for both vehicle combinations; and (4) widths up to 102 inches. California (Assembly Bill 866) increased the California legal vehicle length from 60 to 65 feet and its width from 8.0 to 8.5 feet.

Equipment

Equipment needs for the Folsom DS/FDR for each alternative have been illustrated in Appendix F. Each equipment-related trip will include fuel deliveries as well as the initial delivery of all equipment to each staging area for each Folsom DS/FDR feature. The initial delivery of equipment is expected to occur at the beginning of each Folsom DS/FDR feature sequence. The daily impact calculations represent a conservative analysis, as once the equipment has been delivered to each staging area, additional daily trips will not be incurred until removal or haul out of the equipment at the completion of each Folsom DS/FDR feature. The equipment deliveries include but are not limited to: Drill Rig for Setting Charges, Dozers, Rippers, Scrapers, Excavators, Loaders, Small Crane, Compactors, 20CY Dump Trucks, 50CY Dump Trucks, Fuel Trucks, and Water Trucks.

All equipment is expected to be delivered to the staging areas immediately adjacent to each Folsom DS/FDR feature.

Labor Forces

Labor force needs for the Folsom DS/FDR have been illustrated in Tables 3.9-12 through 3.9-16. The labor force numbers are doubled to represent two shifts per day and doubled again to represent four trips per day.

Table 3.9-11 Truck Routes - Weight Limits				
Local Access Routes				
Roadway	***Location***	***Designated Truck Route***	***Designation (or Weight Limit)***	***Exception***
Folsom Boulevard	Natoma Street to Blue Ravine Road	Yes	City of Folsom Route	n/a
Folsom Boulevard	US50 to Greenback Lane	Yes	City of Folsom Route	n/a
Folsom-Auburn Road	Oak Hill Drive to Folsom Dam Road	No	10,000 lbs	pick up/delivery allowed
Folsom-Auburn Road	Folsom Dam Road to Oak Avenue	No	10,000 lbs	pick up/delivery allowed
Auburn-Folsom (A-F) Road	Douglas Boulevard to Eureka Road	No	10,000 lbs	pick up/delivery allowed
Auburn-Folsom (A-F) Road	Eureka Road to Oak Hill Drive	No	10,000 lbs	pick up/delivery allowed
Blue Ravine Road	Folsom Boulevard to Sibley Street	Yes	City of Folsom Route	n/a
Blue Ravine Road	Sibley Street to Riley Street	Yes	City of Folsom Route	n/a
Blue Ravine Road	Oak Avenue Parkway to Green Valley Road/East Natoma Street	Yes	City of Folsom Route	n/a
East Natoma St	Cimmaron Circle to Folsom Dam Road	No	10,000 lbs	pick up/delivery allowed
East Natoma St	Folsom Dam Road to Green Valley Road	No	10,000 lbs	pick up/delivery allowed
Natoma St	Folsom Blvd to Cimmaron Circle	No	10,000 lbs	permit
Green Valley Road	East Natoma Street to Sophia Parkway	Yes	City of Folsom Route	n/a
Greenback Lane	Hazel Avenue to Madison Avenue	Yes	City of Folsom Route	n/a
Greenback Lane	Madison Avenue to Folsom Blvd	Yes	City of Folsom Route	n/a
Douglas Boulevard	Eureka Road to Sierra College	Yes	STAA - Federal	n/a
Douglas Boulevard	Barton Road to A-F Road	Yes	STAA - Federal	n/a
Sierra College Boulevard	between I-80 and Douglas Boulevard	Yes	CA Legal	n/a
Eureka Road	between I-80 and Douglas Boulevard	Yes	STAA - Federal	n/a
Oak Avenue	Hazel Avenue to Santa Juanita Avenue			
East Bidwell Street	Blue Ravine Road to Oak Avenue Parkway	Yes	City of Folsom Route	n/a
East Bidwell Street	Clarksville Road to Iron Point Road	Yes	City of Folsom Route	n/a
Oak Avenue Parkway	Blue Ravine Road to East Bidwell Street	No	10,000 lbs	permit
Oak Avenue Parkway	East Bidwell St to Riley St	No	10,000 lbs	permit
Scott Road (south)	south of White Rock Road	Yes	CA Legal	n/a
White Rock Road	between Scott Road (south) and Scott Road (north)	Yes	CA Legal	n/a
Scott Road (north)	north of White Rock Road	Yes	CA Legal	n/a
US50	Hazel Avenue to Folsom Boulevard	Yes	STAA - Federal	n/a
US50	Folsom Boulevard to Prairie City Road	Yes	STAA - Federal	n/a
US50	Prairie City Road to East Bidwell Street	Yes	STAA - Federal	n/a
US50				
Regional Access Routes				
Hammonton-Smartville (H-S) Road		Yes	CA Legal	n/a
N Beale Road		Yes	CA Legal	n/a
Feather River Blvd.		Yes	CA Legal	n/a
Highway 70	Yuba County, east of Feather River Boulevard interchange	Yes	STAA - Federal	n/a
Highway 65	Roseville, northeast of Route 80	Yes	STAA - Federal	n/a
Highway 65	Lincoln, northeast of 7th Street	Yes	STAA - Federal	n/a
Highway 65	Wheatland, northeast of Evergreen Drive	Yes	STAA - Federal	n/a
Interstate 80	Roseville, northeast of Route 65	Yes	STAA-Federal	n/a
Interstate 80	Rocklin, northeast of Sierra College Boulevard	Yes	STAA-Federal	n/a

Source: http://www.dot.ca.gov/hq/traffops/trucks/trucksize/truckmap/;
http://www.roseville.ca.us/civica/filebank/blobdload.asp?BlobID=2144;
http://ci.folsom.ca.us/agendas/MG65540/AS65552/AI66593/DO66829/DO_66829.PDF
STAA- Federal = Surface Transportation Assisstance Act

Table 3.9-12
Daily Number of Workers Trips Per Construction Year
Alternative 1

Project Feature	*Route Letter Designation*	*Number of Workers per day all alternatives*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*
Granite Bay Borrow Development (913,000 cu yds max)	A	30								
Dikes 1, 2, 3 Stripping, Excavation and Construction	A	23								
Beals Point South/North Borrow Development (1,250,000 cu yd max)	B	20	20	20	20					
Dike 4&5 Stripping/Excavation and Construction	B	27		27						
Dike 6 Stripping/Excavation and Construction	B	20		20						
Mooney Ridge Stripping/Excavation and Construction	B	30								
Right Wing Dam Stripping/Excavation and Construction	C	60			60	60				
Auxiliary Spillway Borrow Development (3,190,000 cu yds)	D	32	32	32	32					
Auxiliary Spillway Construction	D	60			60	60	60			
Tunnel Construction	D	30								
Left Wing Dam Stripping/Excavation and Construction	D	60						60		
Dike 7 & 8 Stripping/Excavation and Construction	D	40								
Main Concrete Dam Raise	D	45								
Main Concrete Dam Tendons and Shears	D	40							40	
Folsom Point Area Borrow Development and processing (1,673,000 cu yd max)	E	25								
MIAD -Stripping/Excavation and Construction	E	30		30	30	30				
MIAD Jet Grouting	E	20			20	20				
		Total Number Workers per shift per year	52	129	222	170	60	60	40	0
		Total workers per day (two shifts per day)	104	258	444	340	120	120	80	0
		# of trips per day (two trips per worker)	**208**	**516**	**888**	**680**	**240**	**240**	**160**	**0**

Table 3.9-13
Daily Number of Workers Trips Per Construction Year
Alternative 2

Project Feature	*Route Letter Designation*	*Number of Workers per day all alternatives*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*
Granite Bay Borrow Development (913,000 cu yds max)	A	30								
Dikes 1, 2, 3 Stripping, Excavation and Construction	A	23							23	
Beals Point South/North Borrow Development (1,250,000 cu yd max)	B	20	20	20	20					
Dike 4&5 Stripping/Excavation and Construction	B	27		27						
Dike 6 Stripping/Excavation and Construction	B	20		20						
Right Wing Dam Stripping/Excavation and Construction	C	60			60	60				
Auxiliary Spillway Borrow Development (3,190,000 cu yds)	D	32	32	32	32					
Auxiliary Spillway Construction	D	60			60	60	60			
Tunnel Construction	D	30			30	30	30			
Left Wing Dam Stripping/Excavation and Construction	D	60						60	60	
Dike 7 & 8 Stripping/Excavation and Construction	D	40						40		
Main Concrete Dam Raise	D	45					45			
Main Concrete Dam Tendons and Shears	D	40							40	
Folsom Point Area Borrow Development and processing (1,673,000 cu yd max)	E	25								
MIAD -Stripping/Excavation and Construction	E	30		30	30	30	30			
MIAD Jet Grouting	E	20								
		Total Number Workers per shift per year	52	129	232	180	165	100	153	0
		Total workers per day (two shifts per day)	104	258	464	360	330	200	306	0
		# of trips per day (two trips per worker)	**208**	**516**	**928**	**720**	**660**	**400**	**612**	**0**

The number of workers illustrated on this spreadsheet is equal to the number of workers as illustrated on Table 3-9 X Personnel Schedule.

Table 3.9-14
Daily Number of Workers Trips Per Construction Year
Alternative 3

Project Feature	*Route Letter Designation*	*Number of Workers per day all alternatives*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*
Granite Bay Borrow Development (913,000 cu yds max)	A	30								
Dikes 1, 2, 3 Stripping, Excavation and Construction	A	23			23					
Beals Point South/North Borrow Development (1,250,000 cu yd max)	B	20								
Dike 4&5 Stripping/Excavation and Construction	B	27		27						
Dike 6 Stripping/Excavation and Construction	B	20		20						
Right Wing Dam Stripping/Excavation and Construction	C	60		60						
Auxiliary Spillway Borrow Development (3,190,000 cu yds)	D	32	32	32	32					
Auxiliary Spillway Construction	D	60			60	60	60			
Tunnel Construction	D	30								
Left Wing Dam Stripping/Excavation and Construction	D	60						60	60	
Dike 7 & 8 Stripping/Excavation and Construction	D	40						40		
Main Concrete Dam Raise	D	45					45			
Main Concrete Dam Tendons and Shears	D	40							40	
Folsom Point Area Borrow Development and processing (1,673,000 cu yd max)	E	25								
MIAD -Stripping/Excavation and Construction	E	30		30	30	30				
MIAD Jet Grouting	E	20			20	20				
		Total Number Workers per shift per year	32	169	165	110	105	100	100	0
		Total workers per day (two shifts per day)	64	338	330	220	210	200	200	0
		# of trips per day (two trips per worker)	**128**	**676**	**660**	**440**	**420**	**400**	**400**	**0**

Table 3.9-15
Daily Number of Workers Trips Per Construction Year
Alternative 4

Project Feature	*Route Letter Designation*	*Number of Workers per day all alternatives*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*
Granite Bay Borrow Development (913,000 cu yds max)	A	30							30	
Dikes 1, 2, 3 Stripping, Excavation and Construction	A	23							23	
Beals Point South/North Borrow Development (1,250,000 cu yd max)	B	20	20	20	20					
Dike 4&5 Stripping/Excavation and Construction	B	27		27						
Dike 6 Stripping/Excavation and Construction	B	20		20						
Right Wing Dam Stripping/Excavation and Construction	C	60			60	60				
Auxiliary Spillway Borrow Development (3,190,000 cu yds)	D	32	32	32	32					
Auxiliary Spillway Construction	D	60			60	60	60			
Tunnel Construction	D	30								
Left Wing Dam Stripping/Excavation and Construction	D	60						60	60	
Dike 7 & 8 Stripping/Excavation and Construction	D	40						40		
Main Concrete Dam Raise	D	45					45			
Main Concrete Dam Tendons and Shears	D	40							40	
Folsom Point Area Borrow Development and processing (1,673,000 cu yd max)	E	25								
MIAD -Stripping/Excavation and Construction	E	30		30	30	30				
MIAD Jet Grouting	E	20			20	20				
Total Number Workers per shift per year			52	129	222	170	105	100	183	0
Total workers per day (two shifts per day)			104	258	444	340	210	200	366	0
# of trips per day (two trips per worker)			**208**	**516**	**888**	**680**	**420**	**400**	**732**	**0**

Table 3.9-16										
Daily Number of Workers Trips Per Construction Year										
Alternative 5										
Project Feature	*Route Letter Designation*	*Number of Workers per day all alternatives*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*
Granite Bay Borrow Development (913,000 cu yds max)	A	30							30	30
Dikes 1, 2, 3 Stripping, Excavation and Construction	A	23							23	23
Beals Point South/North Borrow Development (1,250,000 cu yd max)	B	20	20	20	20	20	20	20		
Dike 4&5 Stripping/Excavation and Construction	B	27		27						
Dike 6 Stripping/Excavation and Construction	B	20		20						
Right Wing Dam Stripping/Excavation and Construction	C	60			60	60	60	60		
Auxiliary Spillway Borrow Development (3,190,000 cu yds)	D	32								
Auxiliary Spillway Construction	D	60								
Tunnel Construction	D	30								
Left Wing Dam Stripping/Excavation and Construction	D	60						60	60	
Dike 7 & 8 Stripping/Excavation and Construction	D	40						40		
Main Concrete Dam Raise	D	45					45	45		
Main Concrete Dam Tendons and Shears	D	40							40	40
Folsom Point Area Borrow Development and processing (1,673,000 cu yd max)	E	25	25	25	25	25	25	25	25	
MIAD -Stripping/Excavation and Construction	E	30		30	30	30	30			
MIAD Jet Grouting	E	20								
		Total Number Workers per shift per year	45	122	135	135	180	250	208	123
		Total workers per day (two shifts per day)	90	244	270	270	360	500	416	246
		# of trips per day (two trips per worker)	**180**	**488**	**540**	**540**	**720**	**1000**	**832**	**492**

Trip Distribution

Distributing the material, equipment and labor force trips throughout the Folsom DS/FDR study area roadway network is a complex task and one that employs a thorough knowledge of the Folsom DS/FDR area and Folsom DS/FDR features, recognizing that the specific details of each feature have not yet been defined, consequently some reasonable estimates, assumptions, and projections must due for now. The following describes how the expected trips generated by the Folsom DS/FDR are distributed and assigned to the Folsom DS/FDR area roadway network.

The Folsom DS/FDR site has been divided into two distinct areas:

- West Project Features include: Dikes 1 through 6, and RWD
- East Project Features include: Auxiliary Spillway, Tunnel, Main Concrete Dam, LWD, Dikes 7, 8 and MIAD.

Aggregate and Batch Plant Materials

Two sources for aggregate and batch plant materials have been identified for the Folsom DS/FDR:

- Tiechert Marysville Borrow Source located on Hammonton-Smartville Road in Marysville, Yuba County
- Tiechert Prairie City Borrow Source located on Scott Road south of White Rock Road in Sacramento County.

The following assumptions have been made to distribute the aggregate materials to each Folsom DS/FDR feature:

- West Project features will receive aggregate materials (sand, gravel, road base and paving) from the Tiechert Marysville Borrow.
- East Project Features will receive aggregate materials (sand, gravel, road base and paving) from the Tiechert Prairie City Borrow.

Pre-mixed concrete for West Project Features will come from Marysville Borrow to the project Features; Cement and concrete aggregates for East Project Features (except for MIAD) would come from Prairie City to Plant #2 (located at LWD); cement for MIAD would come from Prairie City to Plant #3 (located at MIAD). Plant #1 is limited to processing only.

Tables 3.9-17 and 3.9-18 illustrate the daily total truck numbers and the overall total truck trip numbers, respectively, required for each material for each Folsom DS/FDR feature per alternative.

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Table 3.9-17
Folsom Safety of Dams Offsite Material Haul Schedule

		Number of Workers	Raw Concrete Hauling					Filter Material Hauling					Reinforcement Steel Hauling					Pre-Cast Parapet Wall Hauling					Road Base Hauling					Asphalt Hauling				
Project Feature	Year	All Alts	Alt 1 No Raise	Alt 2 4-ft Raise/Tunnel	Alt 3 3.5-ft raise	Alt 4 7-ft raise	Alt 5 17-ft Raise	Alt 1 No Raise	Alt 2 4-ft Raise/Tunnel	Alt 3 3.5-ft raise	Alt 4 7-ft raise	Alt 5 17-ft Raise	Alt 1 No Raise	Alt 2 4-ft Raise/Tunnel	Alt 3 3.5-ft raise	Alt 4 7-ft raise	Alt 5 17-ft Raise	Alt 1 No Raise	Alt 2 4-ft Raise/Tunnel	Alt 3 3.5-ft raise	Alt 4 7-ft raise	Alt 5 17-ft Raise	Alt 1 No Raise	Alt 2 4-ft Raise/Tunnel	Alt 3 3.5-ft raise	Alt 4 7-ft raise	Alt 5 17-ft Raise	Alt 1 No Raise	Alt 2 4-ft Raise/Tunnel	Alt 3 3.5-ft raise	Alt 4 7-ft raise	Alt 5 17-ft Raise
Main Concrete Dam Raise	2011	45		14 trucks for 90 days	14 trucks for 90 days	15 trucks for 120 days	17 trucks for 180 days	0																								
Main Concrete Dam Tendons and Shears	2013-2014	40	4 trucks for 180 days	4 trucks for 180 days	4 trucks for 180 days	4 trucks for 180 days	4 trucks for 180 days						5 Trucks for 440 days	5 Trucks for 440 days	5 Trucks for 440 days	5 Trucks for 440 days	5 Trucks for 440 days															
Auxiliary Spillway Borrow Development (3,190,000 cu yd)	2007-2009	32						NA			NA																					
Auxiliary Spillway Construction	2009-2011	60	14 Trucks for 440 days	14 Trucks for 440 days	14 Trucks for 440 days	14 Trucks for 440 days							42 RT/day for 440 days	42 RT/day for 440 days	42 RT/day for 440 days	42 RT/day for 440 days																
Tunnel Construction	2009-2011	30		19 Trucks for 360 days																												
Right Wing Dam Construction	2009-2010	60		2 Trucks for 10 days				17 Trucks for 280 days	24 Trucks for 200 days	18 Trucks for 200 days	30 Trucks for 120 days	31 Trucks for 120 days		44 Trucks for 200 days					10 Trucks for 200 days				12 Trucks for 1 day	48 Trucks for 8 days	46 Trucks for 4 days	37 Trucks for 15 days	35 Trucks for 15 days	4 Trucks for 1 day	9 Trucks for 15 days	8 Trucks for 15 days	8 Trucks for 20 days	8 Trucks for 20 days
Left Wing Dam Construction	2012-2013	60		2 Trucks for 30 days				12 Trucks for 120 days	19 Trucks for 240 days	5 Trucks for 240 days	4 Trucks for 240 days	3 Trucks for 440 days		27 Trucks for 100 days					6 Trucks for 100 days				21 Trucks for 1 day	31 Trucks for 4 days	55 Trucks for 2 day	38 Trucks for 4 days	39 Trucks for 4 days	7 Trucks for 1 day	8 Trucks for 5 days	7 Trucks for 10 day	9 Trucks for 5 days	9 Trucks for 5 days
Beals Point/Mooney Ridge Borrow Development (1,250,000 cu yd max)	2007 -2010	20																														
Dike 5 Construction	2008	20						16 Trucks for 90 days	3 Trucks for 90 days	2 Trucks for 140 days	2 Trucks for 140 days	2 Trucks for 260 days											44 Trucks for 2 days	41 Trucks for 2 days	39 Trucks for 1 day	35 Trucks for 3 days	37 Trucks for 3 days	6 Trucks for 5 days	6 Trucks for 5 days	5 Trucks for 5 days	6 Trucks for 5 days	6 Trucks for 5 days
Dike 6 Construction	2008	20						20 Trucks for 45 days	2 Trucks for 45 days	7 Trucks for 120 days	2 Trucks for 100 days	2 Trucks for 150 days											32 Trucks for 2 days	39 Trucks for 2 days	33 Trucks for 1 day	48 Trucks for 2	50 Trucks for 2 days	7 Trucks for 3 days	5 Trucks for 5 days	5 Trucks for 5 days	6 Trucks for 5 days	6 Trucks for 5 days
Folsom Point Area Borrow Development and processing	2007-2012	25																														
MIAD Construction	2010-2011 (2012)	30						34 Trucks for 360 days	35 Trucks for 480 days	34 Trucks for 360 days	34 Trucks for 360 days	35 Trucks for 480 days											27 Trucks for 10 Days	27 Trucks for 10 Days	27 Trucks for 10 Days	27 Trucks for 10 Days	27 Trucks for 10 Days	8 Trucks for 10 Days	8 Trucks for 10 Days	8 Trucks for 10 Days	8 Trucks for 10 Days	8 Trucks for 10 Days
MIAD Jet Grouting	2008-2009	20	11 RT for 360 days		11 RT for 360 days	11 RT for 360 days																										
Dike 7 Construction	2012	20						[illegible] Trucks for 15 days	2 Trucks for 30 days	[illegible] Trucks for 45 days	[illegible] Trucks for 90 days	6 Trucks for 90 days											31 Trucks for 1 Day	38 Trucks for 1 Day	22 Trucks for 1 Day	[illegible] Trucks for 1 Day	53 Trucks for 1 Day	5 Trucks for 2 days	6 Trucks for 2 Days	6 Trucks for 4 Days	7 Trucks for 2 Days	7 Trucks for 2 Days
Dike 8 Construction	2012	20						0	9 Trucks for 2 days	7 Trucks for 45 days	12 Trucks for 45 days	7 Trucks for 90 days												32 Trucks for 1 Day	16 Trucks for 1 Day	42 Trucks for 1 Day	48 Trucks for 1 Day		6 Trucks for 2 Days	5 Trucks for 2 Days	7 Trucks for 2 Days	7 Trucks for 2 Days
Granite Bay Borrow Development (913,000 cu yd max)	2013-2014	30						NA			NA	NA																				
Dike 4 Construction	2013-2014	20						19 Trucks for 15 days	1 Trucks for 30 days	3 Trucks for 60 days	3 Trucks for 60 days	3 Trucks for 120 days											35 Trucks for 1 Day	38 Trucks for 2 Days	29 Trucks for 1 Day	48 Trucks for 2 Days	50 Trucks for 2 Days	5 Trucks for 5 days	5 Trucks for 5 Days	4 Trucks for 5 Days	5 Trucks for 5 Days	6 Trucks for 5 Days
Dikes 1, 2, 3, 4 Construction	2013-2014	20						0	2 Trucks for 60 days	0	9 Trucks for 240 days	7 Trucks for 400 days												48 Trucks for 5 Days	39 Trucks for 39 Days	48 Trucks for 8 Days	55 Trucks for 10 Days		8 Trucks for 10 Days	8 Trucks for 15 Days	7 Trucks for 15 Days	8 Trucks for 15 Days

Table 3.9-18
Folsom Safety of Dams Offsite Material Haul Schedule

Project Feature	Year	Number of Workers	Raw Concrete Hauling					Filter Material Hauling					Reinforcement Steel Hauling				
		All Alternatives	Alternative 1 - No Raise	2 - 4-ft Raise/Tunnel	Alternative 3 - 3.5-ft raise	Alternative 4 - 7-ft raise	Alternative 5 - 17-ft Raise	Alternative 1 - No Raise	2 - 4-ft Raise/Tunnel	Alternative 3 - 3.5-ft raise	Alternative 4 - 7-ft raise	Alternative 5 - 17-ft Raise	Alternative 1 - No Raise	2 - 4-ft Raise/Tunnel	Alternative 3 - 3.5-ft raise	Alternative 4 - 7-ft raise	Alternative 5 - 17-ft Raise
Main Concrete Dam Raise	2011-2012	45		1260		1260	3060	0									
Main Concrete Dam Tendons and Shears	2013-2014	40	2500	720		720	720						166	2200		2200	2200
Auxiliary Spillway Borrow Development (3,190,000 cu yd)	2007-2009	32						NA			NA						
Auxiliary Spillway Construction	2009-2011	60	12481	6160	28081	6160		904					82	18480	367	18480	
Tunnel Construction	2009-2011	30		6840													
Right Wing Dam Construction	2008-2012	60		20	318			3522	4800	287	3600	3720		8800	6		
Left Wing Dam Construction	2012-2013	60		60	100			1111	4560	90	1200	1320		2700	2		
Beals Point/Mooney Ridge Borrow Development (1,250,000 cu yd max)	2007 -2012	20															
Dike 5 Construction	2008	20			89			1621	270	88	280	520			2		
Dike 6 Construction	2008	20			75			973	90	68	840	300			2		
Folsom Point Area Borrow Development and processing	2007-2013	25															
MIAD Construction	2008-2011	30			228			18089	16800	206	12240	16800			4		
MIAD Jet Grouting	2009-2010	20	4100			3960											
Dike 7 Construction	2012	20			43			0	60	39	585	540			1		
Dike 8 Construction	2012	20			43			0	18	38	315	630			1		
Granite Bay Borrow Development (913,000 cu yd max)	2009-2014	30						NA			NA	NA					
Dike 4 Construction	2008	20			65			785	30	58	180	360			2		
Dikes 1, 2, 3 Construction	2009-2014	20			1203/926/880			0	120	1665/4088/1217	0	2800			39/34/1		

Project Feature	Year	Pre-Cast Parapet Wall Hauling					Road Base Hauling					Asphalt Hauling				
		Alternative 1 - No Raise	2 - 4-ft Raise/Tunnel	Alternative 3 - 3.5-ft raise	Alternative 4 - 7-ft raise	Alternative 5 - 17-ft Raise	Alternative 1 - No Raise	Alternative 2 - 4-ft Raise/Tunnel	Alternative 3 - 3.5-ft raise	Alternative 4 - 7-ft raise	Alternative 5 - 17-ft Raise	Alternative 1 - No Raise	Alternative 2 - 4-ft Raise/Tunnel	Alternative 3 - 3.5-ft raise	Alternative 4 - 7-ft raise	Alternative 5 - 17-ft Raise
Main Concrete Dam Raise	2011-2012															
Main Concrete Dam Tendons and Shears	2013-2014															
Auxiliary Spillway Borrow Development (3,190,000 cu yd)	2007-2009															
Auxiliary Spillway Construction	2009-2011						1250					92		92		
Tunnel Construction	2009-2011															
Right Wing Dam Construction	2008-2012		2000				334	384		184	525	167	135		120	160
Left Wing Dam Construction	2012-2013		600				100	124		110	156	50	40		70	45
Beals Point/Mooney Ridge Borrow Development (1,250,000 cu yd max)	2007 -2012															
Dike 5 Construction	2008						100	82		39	111	50	30		25	30
Dike 6 Construction	2008						73	78		33	100	36	25		25	30
Folsom Point Area Borrow Development and processing	2007-2013															
MIAD Construction	2008-2011						295	270		270	270	127	80		80	80
MIAD Jet Grouting	2009-2010															
Dike 7 Construction	2012						0	38		22	53	0	12		24	14
Dike 8 Construction	2012							32		16	48		12		10	14
Granite Bay Borrow Development (913,000 cu yd max)	2009-2014															
Dike 4 Construction	2008						78	76		29	100	39	25		20	30
Dikes 1, 2, 3 Construction	2009-2014							240		195	550		80		120	120

Offsite Materials and Equipment

Offsite materials such as Slope U/S, Toe Drain, HDPE Pipe, Pipe Filter, U/S Filter, Seeding, Rebar will be delivered to the West Project Features from Interstate 80 and to the East Project Features (including Main Concrete Dam) via US Highway 50.

In addition, equipment needs, will be delivered to the west facilities from Interstate 80 and to the east facilities via US Highway 50.

Labor Force

According to data from the California Labor Market Info Data Library Unemployment rates 2005 data, there are 5,700 total unemployed workers in the region. Since 82% of the unemployed are located in Sacramento area, with 11% in Placer County and 7% in El Dorado County. Table 3.9-19 presents the assumptions used on where the workers are expected to originate their trips.

Table 3.9-19
Distribution of Labor Force

Region	***Folsom DS/FDR Worker Distribution***
Rocklin area (Placer County to the north)	5%
Roseville area (Placer County to the west)	5%
Folsom	5%
El Dorado area (Green Valley Road)	2.5%
El Dorado area (US50)	2.5%
Sacramento area (I-80)	40%
Sacramento area (US50)	40%
Total	100%

Based on California Unemployment Rates in 2005, Department of Finance

Trip Assignment

Figures 3.9-1 through 3.9-3 illustrate the proposed routes. Based on the existing traffic volume conditions, the truck route restrictions/designations and general knowledge of the Folsom DS/FDR area, Tables 3.9-20 and 3.9-21 illustrate the proposed access routes for the Folsom DS/FDR. The Local Access Routes and the Regional Access Routes have been further broken down into five types of routes:

- Aggregate Materials
- Offsite Materials
- Batch Plant

- Equipment
- Workers

Table 3.9-20 illustrates the proposed routes and their corresponding designations for hauling of aggregate, offsite, and batch plant materials. Equipment deliveries are expected to use the same routes as the offsite materials.

Table 3.9-21 illustrates the expected routes that workers would use for access/egress for each Folsom DS/FDR feature.

The following assumptions relate to the personnel access routes:

- Folsom DS/FDR personnel from Rocklin area would use Sierra College Boulevard to Douglas Boulevard and further south along Auburn-Folsom Road, Folsom-Auburn Road and East Natoma Street as required to access the Folsom DS/FDR area.
- Folsom DS/FDR personnel from Roseville area would use Douglas Boulevard and head south as required along Auburn-Folsom Road, Folsom-Auburn Road and East Natoma Street as required to access the Folsom DS/FDR area.
- Folsom DS/FDR personnel from Folsom would use East Natoma Street to access the east facilities and Folsom-Auburn Road, Auburn-Folsom Road, Douglas Boulevard to access West Project Features.
- Folsom DS/FDR personnel from Sacramento Interstate 80 would use Greenback Lane to Folsom-Auburn Road to East Natoma Street to access the East Project Features and Interstate 80 to Douglas Boulevard to access the West Project Features.
- Folsom DS/FDR personnel from Sacramento US Highway 50 would use Folsom Boulevard to Folsom-Auburn Road to Auburn-Folsom Road and Douglas Boulevard as required to reach the West Project Features.
- Folsom DS/FDR personnel from Sacramento US Highway 50 would use Folsom Boulevard to Folsom-Auburn Road to East Natoma Street to access the East Project Features.
- Folsom DS/FDR personnel from El Dorado US Highway 50 would use East Bidwell Street to Oak Avenue Parkway to Blue Ravine Road to East Natoma Street to access the East Project Features.

Table 3.9-20
Material Route Designations

Route Designation												ROUTE										FACILITY
AGGREGATE MATERIALS (from Marysville)																						
A-1	From	Tiechert Borrow (hammonton-smartville	to	N. Beale Road	to	Feather River Boulevar	to	Highway 70	to	Highway 65	to	Interstate 80	to	Sierra College Boulevard	to	Douglas Boulevard	to					Dikes 1, 2, 3
A-2	From	Tiechert Borrow (hammonton-smartville	to	N. Beale Road	to	Feather River Boulevar	to	Highway 70	to	Highway 65	to	Interstate 80	to	Sierra College Boulevard	to	Douglas Boulevard	to	A-F Road	to			Mooney Ridge
A-3	From	Tiechert Borrow (hammonton-smartville	to	N. Beale Road	to	Feather River Boulevar	to	Highway 70	to	Highway 65	to	Interstate 80	to	Eureka Road	to	Douglas Boulevard	to	A-F Road	to			Dikes 4,5,6
A-4	From	Tiechert Borrow (hammonton-smartville	to	N. Beale Road	to	Feather River Boulevar	to	Highway 70	to	Highway 65	to	Interstate 80	to	Eureka Road	to	Douglas Boulevard	to	A-F Road	to	F-A Road	to	RWD
AGGREGATE MATERIALS (from Prairie City)																						
Route Designation								**ROUTE**								**FACILITY**						
A-5	From	Prairie City Borrow (White Rock/Scott Road)	to	Scott Road	to	East Bidwell St	to	Oak Ave. Parkway	to	Blue Ravine	to	E. Natoma Street	to			Main Dam, LWD, Dikes 7,8						
A-6	From	Prairie City Borrow (White Rock/Scott Road)	to	Scott Road	to	East Bidwell St	to	Oak Ave. Parkway	to	Blue Ravine	to	E. Natoma Street	to	Green Valley Road	to	MIAD						
BP-2	From	Prairie City Borrow (White Rock/Scott Road)	to	Scott Road	to	East Bidwell St	to	Oak Ave. Parkway	to	Blue Ravine	to	E. Natoma Street	to			Batch Plant 2						
BP-3	From	Prairie City Borrow (White Rock/Scott Road)	to	Scott Road	to	East Bidwell St	to	Oak Ave. Parkway	to	Blue Ravine	to	E. Natoma Street	to	Green valley Road	to	Batch Plant 3						
OFFSITE MATERIALS & EQUIPMENT (FROM I-80)																						
Route Designation						**ROUTE**						**FACILITY**										
O-1	From	Interstate 80	to	Boulevard	to	Douglas Boulevard	to					Site										
O-2	From	Interstate 80	to	Sierra College Boulevard	to	Douglas Boulevard	to	A-F Road	to			Mooney Ridge, Beals Point Borrow Site										
O-3	From	Interstate 80	to	Eureka Road	to	Douglas Boulevard	to	A-F Road	to			Dikes 4,5,6										
O-4	From	Interstate 80	to	Eureka Road	to	Douglas Boulevard	to	A-F Road	to	F-A Road	to	RWD										
OFFSITE MATERIALS & EQUIPMENT (FROM US50)																						
Route Designation								**ROUTE**						**FACILITY**								
O-5	From	US50	to	East Bidwell Street	to	Oak Avenue Parkway	to	Blue Ravine	to	E. Natoma	to			Main Dam, LWD, Dikes 7,8, Auxiliary Spillway, Bridge Spoils								
O-6	From	US50	to	East Bidwell Street	to	Oak Avenue Parkway	to	Blue Ravine	to	E. Natoma	to	Green Valley Road	to	MIAD, MIAD Borrow Site								

Assumptions:
Folsom Dam Road is not open to construction traffic
Aggregate materials include: Fine Filters, Coarse Fiters, Cement and Asphalt
Offsite materials include: Slope U/S, toe drain, HDPE Pipe, Pipe Filter, U/S Filter, Seeding, Rebar
Access to Dikes 7,8 via East Natoma Street - may require waiver from City of Folsom
Main Dam materials come from US 50 and are staged east of the dam

Table 3.9-21
Personnel Access Route Designations

WORKER ROUTE DESIGNATION	ROUTE																FACILITY
W-1A	Roseville area		Douglas Boulevard	to													Dikes 1,2,3
W-2A	Rocklin area		Sierra College Boulevard	to	Douglas Boulevard	to											Dikes 1,2,3
W-3A	Folsom		E Natoma Street	to	Folsom Boulevard	to	F-A Road	to	A-F Road	to	Douglas Boulevard	to					Dikes 1,2,3
W-4A	Sacramento I-80		Douglas Boulevard	to													Dikes 1,2,3
W-5A	Sacramento US50		Folsom Boulevard	to	F-A Road	to	A-F Road	to	Douglas Boulevard	to							Dikes 1,2,3
W-6A	El Dorado (US50)		US50	to	Folsom Boulevard	to	F-A Road	to	A-F Road	to	Douglas Boulevard	to					Dikes 1,2,3
W-7A	El Dorado (GVR)		Green Valley Road	to	E. Natoma Street	to	F-A Road	to	A-F Road	to	Douglas Boulevard	to					Dikes 1,2,3
W-1B	Roseville area		Douglas Boulevard	to	A-F Road	to											Mooney Ridge, Dikes 4,5,6
W-2B	Rocklin area		Sierra College Boulevard	to	Douglas Boulevard	to	A-F Road	to									Mooney Ridge, Dikes 4,5,6
W-3B	Folsom		E Natoma Street	to	Folsom Boulevard	to	F-A Road	to	A-F Road	to							Mooney Ridge, Dikes 4,5,6
W-4B	Sacramento I-80		Greenback Lane	to	F-A Road	to	A-F Road	to									Mooney Ridge, Dikes 4,5,6
W-5B	Sacramento US50		Folsom Boulevard	to	F-A Road	to	A-F Road	to									Mooney Ridge, Dikes 4,5,6
W-6B	El Dorado (US50)		US50	to	Folsom Boulevard	to	F-A Road	to	A-F Road	to							Mooney Ridge, Dikes 4,5,6
W-7B	El Dorado (GVR)		Green Valley Road	to	E. Natoma Street	to	F-A Road	to	A-F Road	to							Mooney Ridge, Dikes 4,5,6
W-1C	Roseville area		Douglas Boulevard	to	A-F Road	to	F-A Road	to									RWD
W-2C	Rocklin area		Sierra College Boulevard	to	Douglas Boulevard	to	A-F Road	to	F-A Road	to							RWD
W-3C	Folsom		E. Natoma Street	to	Folsom Boulevard	to	F-A Road	to									RWD
W-4C	Sacramento I-80		Greenback Lane	to	F-A Road	to											RWD
W-5C	Sacramento US50		Folsom Boulevard	to	F-A Road	to											RWD
W-6C	El Dorado (US50)		US50	to	Folsom Boulevard	to	F-A Road	to									RWD
W-7C	El Dorado (GVR)		Green Valley Road	to	E. Natoma Street	to	F-A Road	to									RWD
W-1D	Roseville area		Douglas Boulevard	to	A-F Road	to	F-A Road	to	E. Natoma Street	to							Auxilliary spillway, tunnel, Main Dam, LWD, Dikes 7,8
W-2D	Rocklin area		Sierra College Boulevard	to	Douglas Boulevard	to	A-F Road	to	F-A Road	to	E.Natoma Street	to					Auxilliary spillway, tunnel, Main Dam, LWD, Dikes 7,8
W-3D	Folsom		E. Natoma Street	to													Auxilliary spillway, tunnel, Main Dam, LWD, Dikes 7,8
W-4D	Sacramento I-80		Greenback Lane	to	F-A Road	to	E. Natoma Street	to									Auxilliary spillway, tunnel, Main Dam, LWD, Dikes 7,8
W-5D	Sacramento US50		Folsom Boulevard	to	F-A Road	to	E. Natoma Street	to									Auxilliary spillway, tunnel, Main Dam, LWD, Dikes 7,8
W-6D	El Dorado (US50)		US50	to	E. Bidwell St	to	Oak Ave. Parkway	to	Blue Ravine	to	E. Natoma Street	to					Auxilliary spillway, tunnel, Main Dam, LWD, Dikes 7,8
W-7D	El Dorado (GVR)		Green Valley Road	to	E. Natoma Street	to											Auxilliary spillway, tunnel, Main Dam, LWD, Dikes 7,8
W-1E	Roseville area		Douglas Boulevard	to	A-F Road	to	F-A Road	to	Folsom Boulevard	to	E. Natoma Street	to	Green Valley Road	to			MIAD
W-2E	Rocklin area		Sierra College Boulevard	to	Douglas Boulevard	to	A-F Road	to	F-A Road	to	Folsom Boulevard	to	E.Natoma Street	to	Green Valley Road	to	MIAD
W-3E	Folsom		E. Natoma Street	to	Green Valley Road	to											MIAD
W-4E	Sacramento I-80		Greenback Lane	to	Folsom Boulevard	to	E. Natoma Street	to	Green Valley Road	to							MIAD
W-5E	Sacramento US50		Folsom Boulevard	to	E. Natoma Street	to	Green Valley Road	to									MIAD
W-6E	El Dorado (US50)		US50	to	E. Bidwell St	to	Oak Ave. Parkway	to	Blue Ravine	to	E. Natoma Street	to	Green Valley Road	to			MIAD
W-7E	El Dorado (GVR)		Green Valley Road	to													MIAD

Assumptions:

5% orker population comes f Rocklin area
5% orker population comes f Roseville area
5% orker population comes f Folsom area
40% orker population comes f Sacramento I-80
40% orker population comes f Sacramento US50
2.5% orker population comes f El Dorado (US50)
2.5% orker population comes f El Dorado (GVR = Green Valley Road)

- Folsom DS/FDR personnel from El Dorado Green Valley Road (GVR) would use Green Valley Road to East Natoma Street to access east facilities, and East Natoma Street to Folsom-Auburn Road and Douglas Boulevard as required to reach the West Project Features.

Daily Trips

Materials and Equipment

Determination of daily truck trips associated with each Folsom DS/FDR alternative includes the following assumptions:

- Total truck trips are distributed evenly over multiple year construction periods.
- Daily trips are not applicable for the entire construction period. The daily trips illustrate conservative scenario at the beginning of each construction phase when both materials and equipment will be delivered to the site.
- Quantities of delivered materials will be met prior to the end of each construction period.
- Daily truck calculations assume 244 hauling days per year.

Tables 3.9-22 through 3.9-29 in Appendix F illustrate the daily trips associated with hauling in materials and equipment. Tables 3.9-30 through 3.9-37 in Appendix F illustrate the trips assigned to each route.

Personnel

- Determination of daily worker trips associated with all Folsom DS/FDR alternatives includes the following assumptions:
- Each worker number represents four daily trips (workers are illustrated per shift).
- Worse case scenario assumes each worker will travel alone and not carpool.
- Each worker will drive to each Folsom DS/FDR feature as opposed to meeting at a staging area to be dispersed to their respective work sites.

Tables 3.9-38 through 3.9-77 (included in Appendix F) illustrate the distribution of workers to each Folsom DS/FDR feature from each unemployment region as identified in *Trip Distribution.* Tables 3.9-38 through 3.9-77 illustrate slightly higher worker and trip numbers than the summary illustrated on Table 3.9-12 through 3.9-16 due to rounding.

Tables 3.9-78 through 3.9-85 (included in Appendix F) illustrate the assignment of truck and worker trips as well as the daily impacts of each alternative associated with hauling materials and equipment and personnel arrivals and departures. Tables 3.9-86 through 3.9-93 illustrate the expected changes in Average Daily Trips (ADT), if any, the changes, if any in LOS, the V/C ratios for all roadways experiencing LOS F, and the percent increase in ADT, if any, for each alternative for each construction year. Emergency operations are currently not included in this analysis and it is not yet determined if its inclusion will impact the analysis presented thus far.

3.9.2.2 Significance Criteria

Appendix G of the CEQA Guidelines provides general guidance that can be considered in determining whether a project would result in a significant impact related to transportation/traffic. Considerations identified therein include the following:

Would the project:

A. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

B. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

C. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

D. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

E. Result in inadequate emergency access?

F. Result in inadequate parking capacity?

G. Conflict with adopted policies, plans, and programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

Relative to the Folsom DS/FDR, the CEQA considerations presented above, with the exception of Criterion C (i.e., none of the alternatives would have any influence on air traffic patterns), and the local significance thresholds presented earlier in Table 3.9-3 were taken into account in evaluating whether the Folsom DS/FDR's traffic impacts are significant.

Table 3.9-86
2007 Daily Project Impacts Alternatives 1 though 5

		ROUTE DESIGNATIONS		2007 No Action/No Project				Alternative 1					Alternative 2					Alternative 3					Alternative 4					Alternative 5				
Roadway	Location	Materials/ Equip.	Worker Routes	ADT	V/C	code	LOS	New ADT	V/C	%	code	LOS	New ADT	V/C	%	code	LOS	New	V/C	%	code	LOS	New	V/C	%	code	LOS	New	V/C	%	code	LOS
Folsom Boulevard	Natoma Street to Blue Ravine Road		W-3A, W-5A, W-6A, W-3B, W-5B, W-6B, W-3C, W-5C, W-6C, W-3D, W-5D, W-3E, W-5E	37,800	1.01	4AD	F	37,900	1.01	0.26%	4AD	F	37,900	1.01	0.26%	4AD	F	37,860	1.01	0.16%	4AD	F	37,900	1.01	0.26%	4AD	F	37,884	1.01	0.22%	4AD	F
Folsom Boulevard	Leidesdorff Street to Greenback Lane		W-3A, W-5A, W-6A, W-3B, W-5B, W-6B, W-3C, W-5C, W-6C	32,600		4AD	D	32,640		0.12%	4AD	D	32,640		0.12%	4AD	D	32,600			4AD	D	32,640		0.12%	4AD	D	32,640		0.12%	4AD	D
Folsom-Auburn Road	Oak Hill Drive to Folsom Dam Road	A-4, O-4, BP-1	W-1C, 2C, 3C, 4C, 5C, 6C, 7C, 1D,2D, 2E, W-3A, 5A, 6A, 3B, 5B, 6B,1E	40,300	1.39	4AU	F	40,356	1.40	0.14%	4AU	F	40,316	1.40	0.04%	4AU	F	40,316	1.40	0.04%	4AU	F	40,356	1.40	0.14%	4AU	F	40,348	1.40	0.12%	4AU	F
Folsom-Auburn Road	Folsom Dam Road to Oak Avenue		W-3A, 5A, 6A, 7A, 3B, 4B, 5B, 6B, 7B, 1E, 2E, 5C	21,400		4AU	D	21,476		0.36%	4AU	D	21,476		0.36%	4AU	D	21,400			4AU	D	21,440		0.19%	4AU	D	21,452		0.24%	4AU	D
Auburn-Folsom (A-F) Road	Douglas Boulevard to Eureka Road	A-2,A-3,A-4, O-2, O-3, O-4, BP-1	W-3A, 5A, 6A, 7A, 1B, 2B, 3B, 4B, 5B, 6B, 7B, 1C, 2C, 1D, 2D, 1E, 2E	34,300	1.19	4AU	F	34,402	1.19	0.30%	4AU	F	34,402	1.19	0.30%	4AU	F	34,316	1.19	0.05%	4AU	F	34,402	1.19	0.30%	4AU	F	34,394	1.19	0.27%	4AU	F
Auburn-Folsom (A-F) Road	Eureka Road to Oak Hill Drive	A-2, A-3, O-2, O-3, BP-1	W-3A, 5A, 6A, 7A, 1B, 2B, 3B, 4B, 5B, 6B, 7B, 1C, 2C, 1D, 2D, 1E, 2E	30,500	1.63	2A	F	30,602	1.64	0.33%	2A	F	30,602	1.64	0.33%	2A	F	30,508	1.63	0.03%	2A	F	30,602	1.64	0.33%	2A	F	30,594	1.64	0.31%	2A	F
Sierra College Boulevard	north of Douglas Boulevard	A-1, A-2, O-1, O-2	W-2A, W-2B, W-2C, W-2D, W-2E	25,286		4AD	D	25,300		0.06%	4AD	D	25,300		0.06%	4AD	D	25,294		0.03%	4AD	D	25,300		0.06%	4AD	D	25,296		0.04%	4AD	D
Eureka Road	east of N. Sunrise Avenue	A-3, A-4, O-3, O-4, BP-1		38,908		6AD	D	38,908			6AD	D	38,908			6AD	D	38,908			6AD	D	38,908			6AD	D	38,908			6AD	D
Douglas Boulevard	east of A-F Road	A-1,O-1	W-1A, W-2A, W-3A, W-4A, W-5A, W-6A, W-7A	13,184		2A	D	13,184			2A	D	13,184			2A	D	13,184			2A	D	13,184			2A	D	13,184			2A	D
Douglas Boulevard	Barton Road to A-F Road	A-1, A-2, A-3, A-4, O-1, O-2, O-3, O-4, BP-1	W-1A, W-2A, W-4A, W-1B, W-2B, W-4B, W-1C,	40,200	1.07	4AD	F	40,258	1.08	0.14%	4AD	F	40,258	1.08	0.14%	4AD	F	40,216	1.08	0.04%	4AD	F	40,258	1.08	0.14%	4AD	F	40,250	1.08	0.12%	4AD	F
Douglas Boulevard	Barton to Sierra Colleg Blvd.			46,491	1.24	4AD	F	46,491	1.24		4AD	F	46,491	1.24		4AD	F	46,491	1.24		4AD	F	46,491	1.24		4AD	F	46,491	1.24		4AD	F
Blue Ravine Road	Oak Avenue Parkway to Green Valley Road/East Natoma Street	A-5, A-6,O-5, O-6, BP-2, BP3	W-6D, W-6E	19,500		4AD	D	19,504		0.02%	4AD	D	19,504		0.02%	4AD	D	19,504		0.02%	4AD	D	19,504		0.02%	4AD	D	19,504		0.02%	4AD	D
East Natoma St	Cimmaron Circle to Folsom Dam Road		W-1D, 3D, 4D, 5D, 1E, 2E, 3E, 4E, 5E	16,600		4AU	C	16,720		0.72%	4AU	C	16,720		0.72%	4AU	C	16,720		0.72%	4AU	C	16,720		0.72%	4AU	C	16,692		0.55%	4AU	C
East Natoma St	Folsom Dam Road to Green Valley Road	A-5, A-6,O-5, O-6, BP-2, BP3	W-7A, 7B, 7C, 1D,2D,3D,4D,5D,6D,7D, 1E, 2E, 3E, 4E, 5E, 6E	27,100		4AU	D	27,240		0.52%	4AU	D	27,236		0.50%	4AU	D	27,236		0.50%	4AU	D	27,240		0.52%	4AU	D	27,200		0.37%	4AU	D
Green Valley Road	East Natoma Street to Sophia Parkway	A-6, O-6	W-1E, W-2E, W-3E, W-4E, W-5E, W-6E	32,000	1.11	4AU	F	32,000	1.11		4AU	F	32,000	1.11		4AU	F	32,000	1.11		4AU	F	32,000	1.11		4AU	F	32,096	1.11	0.30%	4AU	F
Greenback Lane	Hazel Avenue to Madison Avenue		W-4B, W-4C, W-4D, W-4E	24,100		4AMD	B	24,184		0.35%	4AMD	B	24,184		0.35%	4AMD	B	24,152		0.22%	4AMD	B	24,184		0.35%	4AMD	B	24,172		0.30%	4AMD	B
East Bidwell Street	Clarksville Road to Iron Point Road	A-5, A-6, O-5, O-6, BP-2, BP-3	W-6D, W-6E	39,300		4AD	F	39,300			4AD	F	39,300			4AD	F	39,300			4AD	F	39,300			4AD	F	39,300			4AD	F
Oak Avenue Parkway	Blue Ravine Road to East Bidwell Street		W-6D, W-6E	22,200		6AD	C	22,204		0.02%	6AD	C	22,204		0.02%	6AD	C	22,204		0.02%	6AD	C	22,204		0.02%	6AD	C	22,244		0.20%	6AD	C
Scott Road (south)	south of White Rock Road	A-5, A-6, BP-2, BP-3		1,652		2C	A/B	1,652			2C	A/B	1,652			2C	A/B	1,652			2C	A/B	1,652			2C	A/B	1,652			2C	A/B
White Rock Road	between Scott Road (south) and Scott Road (north)	A-5, A-6, BP-2, BP-3		9,087		2C	E	9,087			2C	E	9,087			2C	E	9,087			2C	E	9,087			2C	E	9,087			2C	E
Scott Road (north)	north of White Rock Road	A-5, A-6, BP-2, BP-3		6,324		2C	D	6,324			2C	D	6,324			2C	D	6,324			2C	D	6,324			2C	D	6,324			2C	D
US50	Hazel Avenue to Folsom Boulevard	O-5, O-6	W-5A, W-5B, W-5C, W-5D, W-5E	116,800	1.16	4FA	F	116,884	1.16	0.07%	4FA	F	116,884	1.16	0.07%	4FA	F	116,852	1.16	0.04%	4FA	F	116,884	1.16	0.07%	4FA	F	116,872	1.16	0.06%	4FA	F
US50	Folsom Boulevard to Prairie City Road	O-5, O-6	W-6A, W-6B, W-6C	99,000	1.23	4F	F	99,004	1.23	0.00%	4F	F	99,004	1.23	0.00%	4F	F	99,000	1.23		4F	F	99,008	1.23	0.01%	4F	F	99,004	1.23	0.00%	4F	F
US50	Prairie City Road to East Bidwell Street	O-5, O-6	W-6A, W-6B, W-6C	71,800		4F	E	71,804		0.01%	4F	E	71,804		0.01%	4F	E	71,800			4F	E	71,808		0.01%	4F	E	71,804		0.01%	4F	E
US50	East Bidwell St to County Line		W-6A, W-6B, W-6C, W-6D, W-6E	81,900	1.02	4F	F	81,908	1.02	0.01%	4F	F	81,908	1.02	0.01%	4F	F	81,904	1.02	0.00%	4F	F	81,908	1.02	0.01%	4F	F	81,908	1.02	0.01%	4F	F
Regional Access Routes																																
Hammonton-Smartville (H-S) Road	north of N. Beale Road	A-1, A-2		9,043		2C	E	9,043			2C	E	9,043			2C	E	9,043			2C	E	9,043			2C	E	9,043			2C	E
N Beale Road	south of H-S Road	A-1, A-2		27,805		4AU	E	27,805			4AU	E	27,805			4AU	E	27,805			4AU	E	27,805			4AU	E	27,805			4AU	E
Feather River Blvd. Ramp	south of N. Beale Street	A-1, A-2																														
				56,574	1.57	4AMD	F	56,574	1.57		4AMD	F	56,574	1.57		4AMD	F	56,574	1.57		4AMD	F	56,574	1.57		4AMD	F	56,574	1.57		4AMD	F
Highway 70	Yuba County, east of Feather River Boulevard interchange	A-1, A-2		100,046	1.25	4F	F	100,046	1.25		4F	F	100,046	1.25		4F	F	100,046	1.25		4F	F	100,046	1.25		4F	F	100,046	1.25		4F	F
Highway 65	Roseville, northeast of Route 80	A-1, A-2		22,153	1.18	2A	F	22,153	1.18		2A	F	22,153	1.18		2A	F	22,153	1.18		2A	F	22,153	1.18		2A	F	22,153	1.18		2A	F
Highway 65	Lincoln, northeast of 7th Street	A-1, A-2		23,225	1.24	2A	F	23,225	1.24		2A	F	23,225	1.24		2A	F	23,225	1.24		2A	F	23,225	1.24		2A	F	23,225	1.24		2A	F
Interstate 80	Roseville, northeast of Route 65	A-1, A-2, O-1, O-2		126,757	1.26	4FA	F	126,759	1.26	0.00%	4FA	F	126,759	1.26	0.00%	4FA	F	126,757	1.26		4FA	F	126,759	1.26	0.002%	4FA	F	126,759	1.26	0.002%	4FA	F
Interstate 80	Rocklin, south of Sierra College Boulevard	A-1, A-2, O-1, O-2		104,902	1.04	4FA	F	104,904	1.04	0.00%	4FA	F	104,904	1.04	0.00%	4FA	F	104,902	1.04		4FA	F	104,904	1.04	0.002%	4FA	F	104,904	1.04	0.002%	4FA	F

New Aggregate trips are those trips hauling aggregate materials (fine & coarse filters, road base and asphalt)
New Offsite trips are those trips hauling offsite materials (slope u/s, toe drain, hdpe pipe, pipe filter, u/s filter, seeding, rebar)
New BP trips are those trips hauling aggregate materials (cement, fine & coarse aggregates) directly to the batch plants. This does not include trips from the batch plants to the project
New Equipment trips are those trips hauling in equipment to each project feature staging area (staging area assumed adjacent to project feature for hauling evaluation).

Table 3.9-87
2008 Daily Project Impacts Alternatives 1 though 5

				2008																												
		DESIGNATIONS		No Action/No Project				Alternative 1					Alternative 2					Alternative 3					Alternative 4					Alternative 5				
Roadway	Location	Materials/ Equip. Routes	Worker Routes	ADT	V/C	code	LOS	New ADT	V/C	% increase	code	LOS	New ADT	V/C	% increase	code	LOS	New ADT	V/C	% increase	code	LOS	New ADT	V/C	% increase	code	LOS	New ADT	V/C	% increase	code	LOS
Folsom Boulevard	Natoma Street to Blue Ravine Road		W-3A, W-5A, W-6A, W-3B, W-5B, W-6B, W-3C, W-5C, W-6C, W-3D, W-5D, W-3E, W-5E	38,934	1.04	4AD	F	39,182	1.05	0.64%	4AD	F	39,182	1.05	0.64%	4AD	F	39,258	1.05	0.83%	4AD	F	39,182	1.05	0.64%	4AD	F	39,166	1.05	0.60%	4AD	F
Folsom Boulevard	Leidesdorff Street to Greenback Lane		W-3A, W-5A, W-6A, W-3B, W-5B, W-6B, W-3C, W-5C, W-6C	33,578		4AD	D	33,710		0.39%	4AD	D	33,710		0.39%	4AD	D	33,786		0.62%	4AD	D	33,710		0.39%	4AD	D	33,710		0.39%	4AD	D
Folsom-Auburn Road	Oak Hill Drive to Folsom Dam Road	A-4, O-4, BP-1	W-1C, 2C, 3C, 4C, 5C, 6C, 7C, 1D,2D, 2E, W-3A, 5A, 6A, 3B, 5B, 6B,1E	41,509	1.44	4AU	F	41,673	1.44	0.40%	4AU	F	41,673	1.44	0.40%	4AU	F	41,886	1.45	0.91%	4AU	F	41,673	1.44	0.40%	4AU	F	41,653	1.44	0.35%	4AU	F
Folsom-Auburn Road	Folsom Dam Road to Oak Avenue		W-3A, 5A, 6A, 7A, 3B, 4B, 5B, 6B, 7B, 1E, 2E, 5C	22,042		4AU	D	22,310		1.22%	4AU	D	22,310		1.22%	4AU	D	22,330		1.31%	4AU	D	22,310		1.22%	4AU	D	22,318		1.25%	4AU	D
Auburn-Folsom (A-F) Road	Douglas Boulevard to Eureka Road	A-2,A-3,A-4, O-2, O-3, O-4, BP-1	W-3A, 5A, 6A, 7A, 1B, 2B, 3B, 4B, 5B, 6B, 7B, 1C, 2C, 1D, 2D, 1E, 2E	35,329	1.22	4AU	F	35,666	1.23	0.95%	4AU	F	35,657	1.23	0.93%	4AU	F	35,595	1.23	0.75%	4AU	F	35,699	1.24	1.05%	4AU	F	35,649	1.23	0.91%	4AU	F
Auburn-Folsom (A-F) Road	Eureka Road to Oak Hill Drive	A-2, A-3, O-2, O-3, BP-1	W-3A, 5A, 6A, 7A, 1B, 2B, 3B, 4B, 5B, 6B, 7B, 1C, 2C, 1D, 2D, 1E, 2E	31,415	1.68	2A	F	31,737	1.70	1.02%	2A	F	31,725	1.70	0.99%	2A	F	31,669	1.69	0.81%	2A	F	31,737	1.70	1.02%	2A	F	31,723	1.70	0.98%	2A	F
Sierra College Boulevard	north of Douglas Boulevard	A-1, A-2, O-1, O-2	W-2A, W-2B, W-2C, W-2D, W-2E	26,045		4AD	D	26,065		0.08%	4AD	D	26,075		0.12%	4AD	D	26,081		0.14%	4AD	D	26,075		0.12%	4AD	D	26,071		0.10%	4AD	D
Eureka Road	east of N. Sunrise Avenue	A-3, A-4, O-3, O-4, BP-1		40,076		6AD	D	40,103		0.07%	6AD	D	40,094		0.04%	6AD	D	40,094		0.04%	6AD	D	40,136		0.15%	6AD	D	40,094		0.04%	6AD	D
Douglas Boulevard	east of A-F Road	A-1,O-1	W-1A, W-2A, W-3A, W-4A, W-5A, W-6A, W-7A	13,580		2A	D	13,580			2A	D	13,580			2A	D	13,580			2A	D	13,580			2A	D	13,580			2A	D
Douglas Boulevard	Barton Road to A-F Road	A-1, A-2, A-3, A-4, O-1, O-2, O-3, O-4, BP-1	W-1A, W-2A, W-4A, W-1B, W-2B, W-4B, W-1C, W-2C, W-1D, W-2D, W-1E, W-2E	41,406	1.11	4AD	F	41,599	1.11	0.47%	4AD	F	41,590	1.11	0.44%	4AD	F	41,572	1.11	0.40%	4AD	F	41,632	1.11	0.55%	4AD	F	41,582	1.11	0.43%	4AD	F
Douglas Boulevard	Barton to Sierra Colleg Blvd.			47,886	1.28	4AD	F	47,886	1.28		4AD	F	47,886	1.28		4AD	F	47,886	1.28		4AD	F	47,886	1.28		4AD	F	47,886	1.28		4AD	F
Blue Ravine Road	Oak Avenue Parkway to Green Valley Road/East Natoma Street	A-5, A-6,O-5, O-6, BP-2, BP3	W-6D, W-6E	20,085		4AD	D	20,190		0.52%	4AD	D	20,101		0.08%	4AD	D	20,102		0.08%	4AD	D	20,166		0.40%	4AD	D	20,169		0.42%	4AD	D
East Natoma St	Cimmaron Circle to Folsom Dam Road		W-1D, 3D, 4D, 5D, 1E, 2E, 3E, 4E, 5E	17,098		4AU	C	17,338		1.40%	4AU	C	17,338		1.40%	4AU	C	17,338		1.40%	4AU	C	17,338		1.40%	4AU	C	17,310		1.24%	4AU	C
East Natoma St	Folsom Dam Road to Green Valley Road	A-5, A-6,O-5, O-6, BP-2, BP3	W-7A, 7B, 7C, 1D,2D,3D,4D,5D,6D,7D, 1E, 2E, 3E, 4E, 5E, 6E	27,913		4AU	E	28,282		1.32%	4AU	E	28,193		1.00%	4AU	E	28,182		0.96%	4AU	E	28,258		1.24%	4AU	E	28,221		1.10%	4AU	E
Green Valley Road	East Natoma Street to Sophia Parkway	A-6, O-6	W-1E, W-2E, W-3E, W-4E, W-5E, W-6E	32,960	1.14	4AU	F	33,164	1.15	0.62%	4AU	F	33,158	1.15	0.60%	4AU	F	33,092	1.15	0.40%	4AU	F	33,140	1.15	0.55%	4AU	F	33,256	1.15	0.90%	4AU	F
Greenback Lane	Hazel Avenue to Madison Avenue		W-4B, W-4C, W-4D, W-4E	24,823		4AMD	B	25,031		0.84%	4AMD	B	25,031		0.84%	4AMD	B	25,095		1.10%	4AMD	B	25,031		0.84%	4AMD	B	25,019		0.79%	4AMD	B
East Bidwell Street	Clarksville Road to Iron Point Road	A-5, A-6, O-5, O-6, BP-2, BP-3	W-6D, W-6E	40,479		4AD	F	40,695		0.53%	4AD	F	40,695		0.53%	4AD		40,499		0.05%	4AD		40,647		0.42%	4AD		40,638		0.39%	4AD	
Oak Avenue Parkway	Blue Ravine Road to East Bidwell Street		W-6D, W-6E	22,866		6AD	C	22,874		0.03%	6AD	C	22,874		0.03%	6AD	C	22,874		0.03%	6AD	C	22,874		0.03%	6AD	C	22,874		0.03%	6AD	C
Scott Road (south)	south of White Rock Road	A-5, A-6, BP-2, BP-3		1,702		2C	A/B	1,794		5.41%	2C	A/B	1,702			2C	A/B	1,709		0.41%	2C	A/B	1,770		4.00%	2C	A/B	1,771		4.05%	2C	A/B
White Rock Road	between Scott Road (south) and Scott Road (north)	A-5, A-6, BP-2, BP-3		9,360		2C	E	9,452		0.98%	2C	E	9,360			2C	E	9,367		0.07%	2C	E	9,428		0.73%	2C	E	9,429		0.74%	2C	E
Scott Road (north)	north of White Rock Road	A-5, A-6, BP-2, BP-3		6,514		2C	D	6,594		1.23%	2C	D	6,519		0.08%	2C	D	6,515		0.02%	2C	D	6,519		0.08%	2C	D	6,521		0.11%	2C	D
US50	Hazel Avenue to Folsom Boulevard	O-5, O-6	W-5A, W-5B, W-5C, W-5D, W-5E	120,304	1.19	4FA	F	120,517	1.20	0.18%	4FA	F	120,517	1.20	0.18%	4FA	F	120,577	1.20	0.23%	4FA	F	120,517	1.20	0.18%	4FA	F	120,507	1.20	0.17%	4FA	F
US50	Folsom Boulevard to Prairie City Road	O-5, O-6	W-6A, W-6B, W-6C	101,970	1.27	4F	F	101,991	1.27	0.02%	4F	F	101,987	1.27	0.02%	4F	F	101,987	1.27	0.02%	4F	F	101,987	1.27	0.02%	4F	F	101,989	1.27	0.02%	4F	F
US50	Prairie City Road to East Bidwell Street	O-5, O-6	W-6A, W-6B, W-6C	73,954		4F	E	73,975		0.03%	4F	E	73,971		0.02%	4F	E	73,971		0.02%	4F	E	73,971		0.02%	4F	E	73,973		0.03%	4F	E
US50	East Bidwell St to County Line		W-6A, W-6B, W-6C, W-6D, W-6E	84,357	1.05	4F	F	84,377	1.05	0.02%	4F	F	84,377	1.05	0.02%	4F	F	84,381	1.05	0.03%	4F	F	84,377	1.05	0.02%	4F	F	84,377	1.05	0.02%	4F	F
Regional Access Routes																																
Hammonton-Smartville (H-S) Road	north of N. Beale Road	A-1, A-2		9,315		2C	E	9,315			2C	E	9,315			2C	E	9,315			2C	E	9,315			2C	E	9,315			2C	E
N Beale Road	south of H-S Road	A-1, A-2		28,639		4AU	E	28,639			4AU	E	28,639			4AU	E	28,639			4AU	E	28,639			4AU	E	28,639			4AU	E
Feather River Blvd. Ramp	south of N. Beale Street	A-1, A-2																														
Highway 70	Yuba County, east of Feather River Boulevard interchange	A-1, A-2		59,969	1.67	4AMD	F	59,969	1.67		4AMD	F	59,969	1.67		4AMD	F	59,969	1.67		4AMD	F	59,969	1.67		4AMD	F	59,969	1.67		4AMD	F
Highway 65	Roseville, northeast of Route 80	A-1, A-2		106,049	1.32	4F	F	106,049	1.32		4F	F	106,049	1.32		4F	F	106,049	1.32		4F	F	106,049	1.32		4F	F	106,049	1.32		4F	F
Highway 65	Lincoln, northeast of 7th Street	A-1, A-2		23,483	1.26	2A	F	23,483	1.26		2A	F	23,483	1.26		2A	F	23,483	1.26		2A	F	23,483	1.26		2A	F	23,483	1.26		2A	F
Highway 65	Wheatland, northeast of Evergreen Drive	A-1, A-2		24,619	1.32	2A	F	24,619	1.32		2A	F	24,619	1.32		2A	F	24,619	1.32		2A	F	24,619	1.32		2A	F	24,619	1.32		2A	F
Interstate 80	Roseville, northeast of Route 65	A-1, A-2, O-1, O-2		130,560	1.30	4FA	F	130,562	1.30	0.00%	4FA	F	130,566	1.30	0.00%	4FA	F	130,560	1.30		4FA	F	130,562	1.30	0.00%	4FA	F	130,566	1.30	0.00%	4FA	F
Interstate 80	Rocklin, south of Sierra College Boulevard	A-1, A-2, O-1, O-2		108,050	1.07	4FA	F	108,052	1.07	0.00%	4FA	F	108,056	1.07	0.01%	4FA	F	108,050	1.07		4FA	F	108,052	1.07	0.00%	4FA	F	108,056	1.07	0.01%	4FA	F

New Aggregate trips are those trips hauling aggregate materials (fine & coarse filters, road base and asphalt)
New Offsite trips are those trips hauling offsite materials (slope u/s, toe drain, hdpe pipe, pipe filter, u/s filter, seeding, rebar)
New BP trips are those trips hauling aggregate materials (cement, fine & coarse aggregates) directly to the batch plants. This does not
New Equipment trips are those trips hauling in equipment to each project feature staging area (staging area assumed adjacent

Table 3.9-88
2009 Daily Project Impacts Alternatives 1 though 5

		DESIGNATIONS		2009 No Action/No Project				Alternative 1					Alternative 2					Alternative 3					Alternative 4					Alternative 5				
Roadway	Location	Materials/ Equip. Routes	Worker Routes	ADT	V/C	code	LOS	New ADT	V/C	% increase	code	LOS	New ADT	V/C	% increase	code	LOS	New ADT	V/C	% increase	code	LOS	New ADT	V/C	% increase	code	LOS	New ADT	V/C	% increase	code	LOS
Folsom Boulevard	Natoma Street to Blue Ravine Road		W-3A, W-5A, W-6A, W-3B, W-5B, W-6B, W-3C, W-5C, W-6C, W-3D, W-5D, W-3E, W-5E	40,103	1.07	4AD	F	40,519	1.08	1.04%	4AD	F	40,539	1.08	1.09%	4AD	F	40,407	1.08	0.76%	4AD	F	40,519	1.08	1.04%	4AD	F	40,359	1.08	0.64%	4AD	F
Folsom Boulevard	Leidesdorff Street to Greenback Lane		W-3A, W-5A, W-6A, W-3B, W-5B, W-6B, W-3C, W-5C, W-6C	34,586		4AD	D	34,742		0.45%	4AD	D	34,742		0.45%	4AD	D	34,630		0.13%	4AD	D	34,742		0.45%	4AD	D	34,742		0.45%	4AD	D
Folsom-Auburn Road	Oak Hill Drive to Folsom Dam Road	A-4, O-4, BP-1	W-1C, 2C, 3C, 4C, 5C, 6C, 7C, 1D,2D, 2E, W-3A, 5A, 6A, 3B, 5B, 6B,1E	42,755	2.29	2A	F	43,123	2.31	0.86%	2A	F	43,183	2.31	1.00%	2A	F	42,866	2.29	0.26%	2A	F	43,122	2.31	0.86%	2A	F	43,085	2.30	0.77%	2A	F
Folsom-Auburn Road	Folsom Dam Road to Oak Avenue		W-3A, 5A, 6A, 7A, 3B, 4B, 5B, 6B, 7B, 1E, 2E, 5C	22,704		4AU	D	22,900		0.86%	4AU	D	22,892		0.83%	4AU	D	22,776		0.32%	4AU	D	22,868		0.72%	4AU	D	22,900		0.86%	4AU	D
Auburn-Folsom (A-F) Road	Douglas Boulevard to Eureka Road	A-2,A-3,A-4, O-2, O-3, O-4, BP-1	W-3A, 5A, 6A, 7A, 1B, 2B, 3B, 4B, 5B, 6B, 7B, 1C, 2C, 1D, 2D, 1E, 2E	36,389		4AU	E	36,581		0.53%	4AU	F	36,643		0.70%	4AU	F	36,504		0.32%	4AU	F	36,582		0.53%	4AU	F	36,545		0.43%	4AU	F
Auburn-Folsom (A-F) Road	Eureka Road to Oak Hill Drive	A-2, A-3, O-2, O-3, BP-1	W-3A, 5A, 6A, 7A, 1B, 2B, 3B, 4B, 5B, 6B, 7B, 1C, 2C, 1D, 2D, 1E, 2E	32,358	1.73	2A	F	32,530	1.74	0.53%	2A	F	32,541	1.74	0.57%	2A	F	32,473	1.74	0.36%	2A	F	32,532	1.74	0.54%	2A	F	32,492	1.74	0.41%	2A	F
Sierra College Boulevard	north of Douglas Boulevard	A-1, A-2, O-1, O-2	W-2A, W-2B, W-2C, W-2D, W-2E	26,827		4AD	D	26,875		0.18%	4AD	D	26,881		0.20%	4AD	D	26,876		0.18%	4AD	D	26,877		0.19%	4AD	D	26,857		0.11%	4AD	D
Eureka Road	east of N. Sunrise Avenue	A-3, A-4, O-3, O-4, BP-1		41,279		6AD	D	41,299		0.05%	6AD	D	41,351		0.17%	6AD	D	41,282		0.01%	6AD	D	41,298		0.05%	6AD	D	41,301		0.05%	6AD	D
Douglas Boulevard	east of A-F Road	A-1,O-1	W-1A, W-2A, W-3A, W-4A, W-5A, W-6A, W-7A	13,988		2A	D	13,988			2A	D	13,988			2A	D	14,093		0.75%	2A	D	13,988			2A	D	13,988			2A	D
Douglas Boulevard	Barton Road to A-F Road	A-1, A-2, A-3, A-4, O-1, O-2, O-3, O-4, BP-1	W-1A, W-2A, W-4A, W-1B, W-2B, W-4B, W-1C, W-2C, W-1D, W-2D, W-1E, W-2E	42,649	1.14	4AD	F	42,797	1.14	0.35%	4AD	F	42,859	1.15	0.49%	4AD	F	42,773	1.14	0.29%	4AD	F	42,798	1.14	0.35%	4AD	F	42,761	1.14	0.26%	4AD	F
Douglas Boulevard	Barton to Sierra Colleg Blvd.			49,323	1.32	4AD	F	49,323	1.32		4AD	F	49,323	1.32		4AD	F	49,323	1.32		4AD	F	49,323	1.32		4AD	F	49,323	1.32		4AD	F
Blue Ravine Road	Oak Avenue Parkway to Green Valley Road/East Natoma Street	A-5, A-6,O-5, O-6, BP-2, BP3	W-6D, W-6E	20,688		4AD	D	20,871		0.88%	4AD	D	20,883		0.94%	4AD	D	20,834		0.71%	4AD	D	20,839		0.73%	4AD	D	20,772		0.41%	4AD	D
East Natoma St	Cimmaron Circle to Folsom Dam Road		W-1D, 3D, 4D, 5D, 1E, 2E, 3E, 4E, 5E	17,611		4AU	D	18,143		3.02%	4AU	D	17,983		2.11%	4AU	D	18,143		3.02%	4AU	D	18,143		3.02%	4AU	D	17,823		1.20%	4AU	D
East Natoma St	Folsom Dam Road to Green Valley Road	A-5, A-6,O-5, O-6, BP-2, BP3	W-7A, 7B, 7C, 1D,2D,3D,4D,5D,6D,7D, 1E, 2E, 3E, 4E, 5E, 6E	28,751		4AU	E	29,510		2.64%	4AU	F	29,570		2.85%	4AU	F	29,465		2.48%	4AU	F	29,478		2.53%	4AU	F	29,059		1.07%	4AU	F
Green Valley Road	East Natoma Street to Sophia Parkway	A-6, O-6	W-1E, W-2E, W-3E, W-4E, W-5E, W-6E	33,949	1.17	4AU	F	34,233	1.18	0.84%	4AU	F	34,113	1.18	0.48%	4AU	F	34,157	1.18	0.61%	4AU	F	34,209	1.18	0.77%	4AU	F	34,245	1.18	0.87%	4AU	F
Greenback Lane	Hazel Avenue to Madison Avenue		W-4B, W-4C, W-4D, W-4E	25,568		4AMD	C	25,924		1.39%	4AMD	C	25,940		1.45%	4AMD	C	25,796		0.89%	4AMD	C	25,924		1.39%	4AMD	C	25,784		0.84%	4AMD	C
East Bidwell Street	Clarksville Road to Iron Point Road	A-5, A-6, O-5, O-6, BP-2, BP-3	W-6D, W-6E	41,694		4AD	F	42,104		0.98%	4AD		42,172		1.15%	4AD		42,071		0.90%	4AD		42,036		0.82%	4AD		41,853		0.38%	4AD	
Oak Avenue Parkway	Blue Ravine Road to East Bidwell Street		W-6D, W-6E	23,552		6AD	C	23,572		0.08%	6AD	C	23,572		0.08%	6AD	C	23,572		0.08%	6AD	C	23,572		0.08%	6AD	C	23,560		0.03%	6AD	C
Scott Road (south)	south of White Rock Road	A-5, A-6, BP-2, BP-3		1,754		2C	A/B	1,902		8.44%	2C	A/B	1,844		5.13%	2C	A/B	1,872		6.73%	2C	A/B	1,836		4.68%	2C	A/B	1,823		3.93%	2C	A/B
White Rock Road	between Scott Road (south) and Scott Road (north)	A-5, A-6, BP-2, BP-3		9,641		2C	E	9,789		1.54%	2C	E	9,731		0.93%	2C	E	9,759		1.22%	2C	E	9,723		0.85%	2C	E	9,710		0.72%	2C	E
Scott Road (north)	north of White Rock Road	A-5, A-6, BP-2, BP-3		6,710		2C	D	6,725		0.22%	2C	D	6,795		1.27%	2C	D	6,718		0.12%	2C	D	6,759		0.73%	2C	D	6,717		0.10%	2C	D
US50	Hazel Avenue to Folsom Boulevard	O-5, O-6	W-5A, W-5B, W-5C, W-5D, W-5E	123,914	1.23	4FA	F	124,285	1.23	0.30%	4FA	F	124,371	1.24	0.37%	4FA	F	124,186	1.23	0.22%	4FA	F	124,319	1.23	0.33%	4FA	F	124,137	1.23	0.18%	4FA	F
US50	Folsom Boulevard to Prairie City Road	O-5, O-6	W-6A, W-6B, W-6C	105,030	1.31	4F	F	105,057	1.31	0.03%	4F	F	105,127	1.31	0.09%	4F	F	105,042	1.31	0.01%	4F	F	105,091	1.31	0.06%	4F	F	105,049	1.31	0.02%	4F	F
US50	Prairie City Road to East Bidwell Street	O-5, O-6	W-6A, W-6B, W-6C	76,173		4F	E	76,200		0.04%	4F	E	76,270		0.13%	4F	E	76,185		0.02%	4F	E	76,234		0.08%	4F	E	76,192		0.02%	4F	E
US50	East Bidwell St to County Line		W-6A, W-6B, W-6C, W-6D, W-6E	86,888	1.08	4F	F	86,920	1.08	0.04%	4F	F	86,920	1.08	0.04%	4F	F	86,912	1.08	0.03%	4F	F	86,920	1.08	0.04%	4F	F	86,908	1.08	0.02%	4F	F
Regional Access Routes																																
Hammonton-Smartville (H-S) Road	north of N. Beale Road	A-1, A-2		9,594		2C	E	9,594			2C	E	9,594			2C	E	9,602		0.08%	2C	E	9,594			2C	E	9,594			2C	E
N Beale Road	south of H-S Road	A-1, A-2		29,499	1.02	4AU	F	29,499	1.02		4AU	F	29,499	1.02		4AU	F	29,507	1.02	0.03%	4AU	F	29,499	1.02		4AU	F	29,499	1.02		4AU	F
Feather River Blvd. Ramp	south of N. Beale Street	A-1, A-2																														
Highway 70	Yuba County, east of Feather River Boulevard interchange	A-1, A-2		63,568	1.77	4AMD	F	63,568	1.77		4AMD	F	63,568	1.77		4AMD	F	63,576	1.77	0.01%	4AMD	F	63,568	1.77		4AMD	F	63,568	1.77		4AMD	F
Highway 65	Roseville, northeast of Route 80	A-1, A-2		112,412	1.40	4F	F	112,412	1.40		4F	F	112,412	1.40		4F	F	112,420	1.40	0.01%	4F	F	112,412	1.40		4F	F	112,412	1.40		4F	F
Highway 65	Lincoln, northeast of 7th Street	A-1, A-2		24,892	1.33	2A	F	24,892	1.33		2A	F	24,892	1.33		2A	F	24,900	1.33	0.03%	2A	F	24,892	1.33		2A	F	24,892	1.33		2A	F
Highway 65	Wheatland, northeast of Evergreen Drive	A-1, A-2		26,097	1.40	2A	F	26,097	1.40		2A	F	26,097	1.40		2A	F	26,105	1.40	0.03%	2A	F	26,097	1.40		2A	F	26,097	1.40		2A	F
Interstate 80	Roseville, northeast of Route 65	A-1, A-2, O-1, O-2		134,477	1.34	4FA	F	134,477	1.34		4FA	F	134,483	1.34	0.00%	4FA	F	134,503	1.34	0.02%	4FA	F	134,483	1.34	0.00%	4FA	F	134,483	1.34	0.00%	4FA	F
Interstate 80	Rocklin, south of Sierra College Boulevard	A-1, A-2, O-1, O-2		111,292	1.11	4FA	F	111,292	1.11		4FA	F	111,294	1.11	0.00%	4FA	F	111,301	1.11	0.01%	4FA	F	111,292	1.11		4FA	F	111,292	1.11		4FA	F

New Aggregate trips are those trips hauling aggregate materials (fine & coarse filters, road base and asphalt)
New Offsite trips are those trips hauling offsite materials (slope u/s, toe drain, hdpe pipe, pipe filter, u/s filter, seeding, rebar)
New BP trips are those trips hauling aggregate materials (cement, fine & coarse aggregates) directly to the batch plants. This does not include trips from the batch plants to the project features
New Equipment trips are those trips hauling in equipment to each project feature staging area (staging area assumed adjacent to project feature for hauling evaluation).

Table 3.9-89
2010 Daily Project Impacts Alternatives 1 though 5

				2010																												
		ROUTE		No Action/No Project				Alternative 1					Alternative 2					Alternative 3					Alternative 4					Alternative 5				
Roadway	Location	Materials/ Equip. Routes	Worker Routes	ADT	V/C	code	LOS	New ADT	V/C	% increase	code	LOS	New ADT	V/C	% increase	code	LOS	New ADT	V/C	% increase	code	LOS	New ADT	V/C	% increase	code	LOS	New ADT	V/C	% increase	code	LOS
Folsom Boulevard	Natoma Street to Blue Ravine Road		W-3A, W-5A, W-6A, W-3B, W-5B, W-6B, W-3C, W-5C, W-6C, W-3D, W-5D, W-3E, W-	40,906	1.09	4AD	F	41,222	1.10	0.77%	4AD	F	41,242	1.10	0.82%	4AD	F	41,106	1.10	0.49%	4AD	F	41,222	1.10	0.77%	4AD	F	41,162	1.10	0.63%	4AD	F
Folsom Boulevard	Leidesdorff Street to Greenback Lane		W-3A, W-5A, W-6A, W-3B, W-5B, W-6B, W-3C, W-5C, W-	35,278		4AD	D	35,394		0.33%	4AD	D	35,394		0.33%	4AD	D	35,278			4AD	D	35,394		0.33%	4AD	D	35,434		0.44%	4AD	E
Folsom-Auburn Road	Oak Hill Drive to Folsom Dam Road	A-4, O-4, BP-1	W-1C, 2C, 3C, 4C, 5C, 6C, 7C, 1D,2D, 2E, W-3A, 5A, 6A, 3B, 5B, 6B,1E	43,611	2.33	2A	F	43,923	2.35	0.72%	2A	F	43,983	2.35	0.85%	2A	F	43,659	2.33	0.11%	2A	F	43,922	2.35	0.71%	2A	F	43,941	2.35	0.76%	2A	F
Folsom-Auburn Road	Folsom Dam Road to Oak Avenue		W-3A, 5A, 6A, 7A, 3B, 4B, 5B, 6B, 7B, 1E, 2E, 5C	23,159		4AU	D	23,279		0.52%	4AU	D	23,271		0.48%	4AU	D	23,183		0.10%	4AU	D	23,279		0.52%	4AU	D	23,355		0.85%	4AU	D
Auburn-Folsom (A-F) Road	Douglas Boulevard to Eureka Road	A-2,A-3,A-4, O-2, O-3, O-4, BP-1	W-3A, 5A, 6A, 7A, 1B, 2B, 3B, 4B, 5B, 6B, 7B, 1C, 2C, 1D, 2D, 1E, 2E	37,117	1.28	4AU	F	37,209	1.29	0.25%	4AU	F	37,269	1.29	0.41%	4AU	F	37,165	1.29	0.13%	4AU	F	37,208	1.29	0.25%	4AU	F	37,273	1.29	0.42%	4AU	F
Auburn-Folsom (A-F) Road	Eureka Road to Oak Hill Drive	A-2, A-3, O-2, O-3, BP-1	W-3A, 5A, 6A, 7A, 1B, 2B, 3B, 4B, 5B, 6B, 7B, 1C, 2C, 1D, 2D, 1E, 2E	33,006	1.77	2A	F	33,078	1.77	0.22%	2A	F	33,087	1.77	0.25%	2A	F	33,054	1.77	0.15%	2A	F	33,078	1.77	0.22%	2A	F	33,140	1.77	0.41%	2A	F
Sierra College Boulevard	north of Douglas Boulevard	A-1, A-2, O-1, O-2	W-2A, W-2B, W-2C, W-2D, W-2E	27,364		4AD	D	27,400		0.13%	4AD	D	27,404		0.15%	4AD	D	27,388		0.09%	4AD	D	27,400		0.13%	4AD	D	27,394		0.11%	4AD	D
Eureka Road	east of N. Sunrise Avenue	A-3, A-4, O-3, O-4, BP-1		42,105		6AD	D	42,125		0.05%	6AD	D				6AD	D				6AD	D				6AD	D	42,105			6AD	D
Douglas Boulevard	east of A-F Road	A-1,O-1	W-1A, W-2A, W-3A, W-4A, W-5A, W-6A, W-7A	14,268		2A	D	14,268			2A	D	14,268			2A	D	14,268			2A	D	14,268			2A	D	14,268			2A	D
Douglas Boulevard	Barton Road to A-F Road	A-1, A-2, A-3, A-4, O-1, O-2, O-3, O-4, BP-1	W-1A, W-2A, W-4A, W-1B, W-2B, W-4B, W-1C, W-2C, W-1D, W-2D, W-1E, W-2E	43,502	1.16	4AD	F	43,594	1.17	0.21%	4AD	F	43,654	1.17	0.35%	4AD	F	43,550	1.16	0.11%	4AD	F	43,593	1.17	0.21%	4AD	F	43,614	1.17	0.26%	4AD	F
Douglas Boulevard	Barton to Sierra Colleg Blvd.			50,310	1.35	4AD	F	50,310	1.35		4AD	F				4AD	F				4AD	F				4AD	F	50,310	1.35		4AD	F
Blue Ravine Road	Oak Avenue Parkway to Green Valley Road/East Natoma Street	A-5, A-6,O-5, O-6, BP-2, BP3	W-6D, W-6E	21,102		4AD	D	21,280		0.84%	4AD	D	21,279		0.84%	4AD	D	21,243		0.67%	4AD	D	21,248		0.69%	4AD	D	21,183		0.38%	4AD	D
East Natoma St	Cimmaron Circle to Folsom Dam Road		W-1D, 3D, 4D, 5D, 1E, 2E, 3E, 4E, 5E	17,964		4AU	D	18,388		2.36%	4AU	D	18,412		2.49%	4AU	D	18,376		2.29%	4AU	D	18,376		2.29%	4AU	D	18,176		1.18%	4AU	D
East Natoma St	Folsom Dam Road to Green Valley Road	A-5, A-6,O-5, O-6, BP-2, BP3	W-7A, 7B, 7C, 1D,2D,3D,4D,5D,6D,7D, 1E, 2E, 3E, 4E, 5E, 6E	29,327	1.01	4AU	F	29,945	1.04	2.11%	4AU	F	29,992	1.04	2.27%	4AU	F	29,904	1.03	1.97%	4AU	F	29,913	1.04	2.00%	4AU	F	29,632	1.03	1.04%	4AU	F
Green Valley Road	East Natoma Street to Sophia Parkway	A-6, O-6	W-1E, W-2E, W-3E, W-4E, W-5E, W-6E	34,628	1.20	4AU	F	34,919	1.21	0.84%	4AU	F	34,824	1.20	0.57%	4AU	F	34,839	1.21	0.61%	4AU	F	34,887	1.21	0.75%	4AU	F	34,921	1.21	0.85%	4AU	F
Greenback Lane	Hazel Avenue to Madison Avenue		W-4B, W-4C, W-4D, W-4E	26,080		4AMD	C	26,352		1.04%	4AMD	C	26,368		1.10%	4AMD	C	26,256		0.67%	4AMD	C	26,352		1.04%	4AMD	C	26,296		0.83%	4AMD	C
East Bidwell Street	Clarksville Road to Iron Point Road	A-5, A-6, O-5, O-6, BP-2, BP-3	W-6D, W-6E	42,528		4AD	F	42,935		0.96%	4AD	F	42,528			4AD	F	42,902		0.88%	4AD	F	42,867		0.80%	4AD	F	42,678		0.35%	4AD	F
Oak Avenue Parkway	Blue Ravine Road to East Bidwell Street		W-6D, W-6E	24,024		6AD	C	24,040		0.07%	6AD	C	24,040		0.07%	6AD	C	24,040		0.07%	6AD	C	24,040		0.07%	6AD	C	24,032		0.03%	6AD	C
Scott Road (south)	south of White Rock Road	A-5, A-6, BP-2, BP-3		1,790		2C	A/B	1,938		8.27%	2C	A/B				2C	A/B				2C	A/B				2C	A/B	1,790			2C	A/B
White Rock Road	between Scott Road (south) and Scott Road (north)	A-5, A-6, BP-2, BP-3		9,834	1.00	2C	F	9,982	1.02	1.50%	2C	F				2C	F				2C	F				2C	F	9,834	1.00		2C	F
Scott Road (north)	north of White Rock Road	A-5, A-6, BP-2, BP-3		6,845		2C	D	6,859		0.20%	2C	D				2C	D				2C	D				2C	D	6,845			2C	D
US50	Hazel Avenue to Folsom Boulevard	O-5, O-6	W-5A, W-5B, W-5C, W-5D, W-5E	126,393	1.26	4FA	F	126,679	1.26	0.23%	4FA	F	126,764	1.26	0.29%	4FA	F	126,576	1.26	0.14%	4FA	F	126,713	1.26	0.25%	4FA	F	126,613	1.26	0.17%	4FA	F
US50	Folsom Boulevard to Prairie City Road	O-5, O-6	W-6A, W-6B, W-6C	107,131	1.34	4F	F	107,153	1.34	0.02%	4F	F	107,222	1.34	0.08%	4F	F	107,138	1.34	0.01%	4F	F	107,187	1.34	0.05%	4F	F	107,147	1.34	0.01%	4F	F
US50	Prairie City Road to East Bidwell Street	O-5, O-6	W-6A, W-6B, W-6C	77,697		4F	E	77,719		0.03%	4F	E	77,788		0.12%	4F	E	77,704		0.01%	4F	E	77,753		0.07%	4F	E	77,713		0.02%	4F	E
US50	East Bidwell St to County Line		W-6A, W-6B, W-6C, W-6D, W-6E	88,626	1.11	4F	F	88,650	1.11	0.03%	4F	F	88,650	1.11	0.03%	4F	F	88,642	1.11	0.02%	4F	F	88,650	1.11	0.03%	4F	F	88,646	1.11	0.02%	4F	F
Regional Access Routes																																
Hammonton-Smartville (H-S) Road	north of N. Beale Road	A-1, A-2		9,786		2C	E	9,786			2C	E	9,786			2C	E	9,786			2C	E	9,786			2C	E	9,786			2C	E
N Beale Road	south of H-S Road	A-1, A-2		30,088	1.04	4AU	F	30,088	1.04		4AU	F	30,088	1.04		4AU	F	30,088	1.04		4AU	F	30,088	1.04		4AU	F	30,088	1.04		4AU	F
Feather River Blvd. Ramp	south of N. Beale Street	A-1, A-2																														
Highway 70	Yuba County, east of Feather River Boulevard interchange	A-1, A-2		67,383	1.87	4AMD	F	67,383	1.87		4AMD	F	67,383	1.87		4AMD	F	67,383	1.87		4AMD	F	67,383	1.87		4AMD	F	67,383	1.87		4AMD	F
Highway 65	Roseville, northeast of Route 80	A-1, A-2		119,157	1.49	4F	F	119,157	1.49		4F	F	119,157	1.49		4F	F	119,157	1.49		4F	F	119,157	1.49		4F	F	119,157	1.49		4F	F
Highway 65	Lincoln, northeast of 7th Street	A-1, A-2		26,386	1.41	2A	F	26,386	1.41		2A	F	26,386	1.41		2A	F	26,386	1.41		2A	F	26,386	1.41		2A	F	26,386	1.41		2A	F
Highway 65	Wheatland, northeast of Evergreen Drive	A-1, A-2		27,663	1.48	2A	F	27,663	1.48		2A	F	27,663	1.48		2A	F	27,663	1.48		2A	F	27,663	1.48		2A	F	27,663	1.48		2A	F
Interstate 80	Roseville, northeast of Route 65	A-1, A-2, O-1, O-2		138,512	1.38	4FA	F	138,512	1.38		4FA	F	138,512	1.38		4FA	F	138,512	1.38		4FA	F	138,512	1.38		4FA	F	138,518	1.38	0.00%	4FA	F
Interstate 80	Rocklin, south of Sierra College Boulevard	A-1, A-2, O-1, O-2		114,631	1.14	4FA	F	114,631	1.14		4FA	F	114,631	1.14		4FA	F	114,631	1.14		4FA	F	114,631	1.14		4FA	F	114,631	1.14		4FA	F

New Aggregate trips are those trips hauling aggregate materials (fine & coarse filters, road base and asphal
New Offsite trips are those trips hauling offsite materials (slope u/s, toe drain, hdpe pipe, pipe filter, u/s filter, seeding, reba
New BP trips are those trips hauling aggregate materials (cement, fine & coarse aggregates) directly to the batch plants. This does not include trips from the batch plants to the project featu
New Equipment trips are those trips hauling in equipment to each project feature staging area (staging area assumed adjacent to project feature for hauling evaluation

Table 3.9-90
2011 Daily Project Impacts Alternatives 1 though 5

		DESIGNATIONS		2011																												
				No Action/No Project				Alternative 1					Alternative 2					Alternative 3					Alternative 4					Alternative 5				
Roadway	Location	Materials/ Equip. Routes	Worker Routes	ADT	V/C	code	LOS	New ADT	V/C	% increase	code	LOS	New ADT	V/C	% increase	code	LOS	New	V/C	% increase	code	LOS	New	V/C	% increase	code	LOS	New	V/C	% increase	code	LOS
Folsom Boulevard	Natoma Street to Blue Ravine Road		W-3A, W-5A, W-6A, W-3B, W-5B, W-6B, W-3C, W-5C, W-6C, W-3D, W-5D, W-3E, W-5E	41,725	1.12	4AD	F	41,833	1.12	0.26%	4AD	F	42,025	1.12	0.72%	4AD	F	41,913	1.12	0.45%	4AD	F	41,913	1.12	0.45%	4AD	F	42,061	1.12	0.81%	4AD	F
Folsom Boulevard	Leidesdorff Street to Greenback Lane		W-3A, W-5A, W-6A, W-3B, W-5B, W-6B, W-3C, W-5C, W-6C	35,984		4AD	E	35,984			4AD	E	35,984			4AD	E	35,984			4AD	E	35,984			4AD	E	36,140		0.43%	4AD	E
Folsom-Auburn Road	Oak Hill Drive to Folsom Dam Road	A-4, O-4, BP-1	W-1C, 2C, 3C, 4C, 5C, 6C, 7C, 1D,2D, 2E, W-3A, 5A, 6A, 3B, 5B, 6B,1E	44,484	2.38	2A	F	44,508	2.38	0.05%	2A	F	44,556	2.38	0.16%	2A	F	44,524	2.38	0.09%	2A	F	44,524	2.38	0.09%	2A	F	44,830	2.40	0.78%	2A	F
Folsom-Auburn Road	Folsom Dam Road to Oak Avenue		W-3A, 5A, 6A, 7A, 3B, 4B, 5B, 6B, 7B, 1E, 2E, 5C	23,623		4AU	D	23,623			4AU	D	23,639		0.07%	4AU	D	23,623			4AU	D	23,623			4AU	D	23,787		0.69%	4AU	D
Auburn-Folsom (A-F) Road	Douglas Boulevard to Eureka Road	A-2,A-3,A-4, O-2, O-3, O-4, BP-1	W-3A, 5A, 6A, 7A, 1B, 2B, 3B, 4B, 5B, 6B, 7B, 1C, 2C, 1D, 2D, 1E, 2E	37,860	1.31	4AU	F	37,884	1.31	0.06%	4AU	F	37,932	1.31	0.19%	4AU	F	37,900	1.31	0.11%	4AU	F	37,900	1.31	0.11%	4AU	F	38,032	1.32	0.45%	4AU	F
Auburn-Folsom (A-F) Road	Eureka Road to Oak Hill Drive	A-2, A-3, O-2, O-3, BP-1	W-3A, 5A, 6A, 7A, 1B, 2B, 3B, 4B, 5B, 6B, 7B, 1C, 2C, 1D, 2D, 1E, 2E	33,667	1.80	2A	F	33,691	1.80	0.07%	2A	F	33,739	1.80	0.21%	2A	F	33,707	1.80	0.12%	2A	F	33,707	1.80	0.12%	2A	F	33,817	1.81	0.45%	2A	F
Sierra College Boulevard	north of Douglas Boulevard	A-1, A-2, O-1, O-2	W-2A, W-2B, W-2C, W-2D, W-2E	27,912		4AD	D	27,924		0.04%	4AD	D	27,948		0.13%	4AD	D	27,932		0.07%	4AD	D	27,932		0.07%	4AD	D	27,950		0.14%	4AD	D
Eureka Road	east of N. Sunrise Avenue	A-3, A-4, O-3, O-4, BP-1		42,948		6AD	D	42,948			6AD	D				6AD	D				6AD	D				6AD	D	42,948			6AD	D
Douglas Boulevard	east of A-F Road	A-1,O-1	W-1A, W-2A, W-3A, W-4A, W-5A, W-6A, W-7A	14,554		2A	D	14,554			2A	D	14,554			2A	D	14,554			2A	D	14,554			2A	D	14,554			2A	D
Douglas Boulevard	Barton Road to A-F Road	A-1, A-2, A-3, A-4, O-1, O-2, O-3, O-4, BP-1	W-1A, W-2A, W-4A, W-1B, W-2B, W-4B, W-1C, W-2C, W-1D, W-2D, W-1E, W-2E	44,373	1.19	4AD	F	44,397	1.19	0.05%	4AD	F	44,445	1.19	0.16%	4AD	F	44,413	1.19	0.09%	4AD	F	44,413	1.19	0.09%	4AD	F	44,501	1.19	0.29%	4AD	F
Douglas Boulevard	Barton to Sierra Colleg Blvd.			51,317	1.37	4AD	F	51,317	1.37		4AD	F				4AD	F				4AD	F				4AD	F	51,317	1.37		4AD	F
Blue Ravine Road	Oak Avenue Parkway to Green Valley Road/East Natoma Street	A-5, A-6,O-5, O-6, BP-2, BP3	W-6D, W-6E	21,525		4AD	D	21,603		0.36%	4AD	D	21,714		0.88%	4AD	D	21,659		0.62%	4AD	D	21,603		0.36%	4AD	D	21,625		0.46%	4AD	D
East Natoma St	Cimmaron Circle to		W-1D, 3D, 4D, 5D, 1E, 2E,	18,324		4AU	D	18,540		1.18%	4AU	D	18,932		3.32%	4AU	D	18,700		2.05%	4AU	D	18,700		2.05%	4AU	D	18,696		2.03%	4AU	D
East Natoma St	Folsom Dam Road to Green Valley Road	A-5, A-6,O-5, O-6, BP-2, BP3	W-7A, 7B, 7C, 1D,2D,3D,4D,5D,6D,7D, 1E, 2E, 3E, 4E, 5E, 6E	29,914	1.04	4AU	F	30,224	1.05	1.04%	4AU	F	30,755	1.06	2.81%	4AU	F	30,456	1.05	1.81%	4AU	F	30,400	1.05	1.62%	4AU	F	30,410	1.05	1.66%	4AU	F
Green Valley Road	East Natoma Street to Sophia Parkway	A-6, O-6	W-1E, W-2E, W-3E, W-4E, W-5E, W-6E	35,321	1.22	4AU	F	35,321	1.22		4AU	F	35,519	1.23	0.56%	4AU	F	35,321	1.22		4AU	F	35,321	1.22		4AU	F	35,614	1.23	0.83%	4AU	F
Greenback Lane	Hazel Avenue to Madison Avenue		W-4B, W-4C, W-4D, W-4E	26,602		4AMD	C	26,698		0.36%	4AMD	C	26,866		0.99%	4AMD	C	26,770		0.63%	4AMD	C	26,770		0.63%	4AMD	C	26,890		1.08%	4AMD	C
East Bidwell Street	Clarksville Road to Iron Point Road	A-5, A-6, O-5, O-6, BP-2, BP-3	W-6D, W-6E	43,379		4AD	F	43,573		0.45%	4AD	F	43,610		0.53%	4AD	F	43,745		0.84%	4AD	F	43,577		0.46%	4AD	F	43,574		0.45%	4AD	F
Oak Avenue Parkway	Blue Ravine Road to East Bidwell Street		W-6D, W-6E	24,505		6AD	C	24,513		0.03%	6AD	C	24,525		0.08%	6AD	C	24,517		0.05%	6AD	C	24,517		0.05%	6AD	C	24,517		0.05%	6AD	C
Scott Road (south)	south of White Rock Road	A-5, A-6, BP-2, BP-3		1,826		2C	A/B	1,882		3.07%	2C	A/B				2C	A/B				2C	A/B				2C	A/B	1,826			2C	A/B
White Rock Road	between Scott Road (south) and Scott Road (north)	A-5, A-6, BP-2, BP-3		10,031	1.02	2C	F	10,087	1.03	0.56%	2C	F				2C	F				2C	F				2C	F	10,031	1.02		2C	F
Scott Road (north)	north of White Rock Road	A-5, A-6, BP-2, BP-3		6,982		2C	D	6,992		0.14%	2C	D				2C	D				2C	D				2C	D	6,982			2C	D
US50	Hazel Avenue to Folsom Boulevard	O-5, O-6	W-5A, W-5B, W-5C, W-5D, W-5E	128,921	1.28	4FA	F	129,027	1.28	0.08%	4FA	F	129,236	1.28	0.24%	4FA	F	129,095	1.28	0.13%	4FA	F	129,135	1.28	0.17%	4FA	F	129,215	1.28	0.23%	4FA	F
US50	Folsom Boulevard to Prairie City Road	O-5, O-6	W-6A, W-6B, W-6C	109,274	1.36	4F	F	109,284	1.36	0.01%	4F	F	109,325	1.36	0.05%	4F	F	109,280	1.36	0.01%	4F	F	109,320	1.36	0.04%	4F	F	109,292	1.36	0.02%	4F	F
US50	Prairie City Road to East Bidwell Street	O-5, O-6	W-6A, W-6B, W-6C	79,251		4F	E	79,261		0.01%	4F	E	79,302		0.06%	4F	E	79,257		0.01%	4F	E	79,297		0.06%	4F	E	79,269		0.02%	4F	E
US50	East Bidwell St to County Line		W-6A, W-6B, W-6C, W-6D, W-6E	90,399	1.13	4F	F	90,495	1.13	0.11%	4F	F	90,419	1.13	0.02%	4F	F	90,411	1.13	0.01%	4F	F	90,411	1.13	0.01%	4F	F	90,423	1.13	0.03%	4F	F
Regional Access Routes																																
Hammonton-Smartville (H-S) Road	north of N. Beale Road	A-1, A-2		9,982	1.02	2C	F	9,982	1.02		2C	F	9,982	1.02		2C	F	9,982	1.02		2C	F	9,982	1.02		2C	F	9,982	1.02		2C	F
N Beale Road	south of H-S Road	A-1, A-2		30,690	1.06	4AU	F	30,690	1.06		4AU	F	30,690	1.06		4AU	F	30,690	1.06		4AU	F	30,690	1.06		4AU	F	30,690	1.06		4AU	F
Feather River Blvd. Ramp	south of N. Beale Street	A-1, A-2																														
Highway 70	Yuba County, east of Feather River Boulevard interchange	A-1, A-2		71,426	1.98	4AMD	F	71,426	1.98		4AMD	F	71,426	1.98		4AMD	F	71,426	1.98		4AMD	F	71,426	1.98		4AMD	F	71,426	1.98		4AMD	F
Highway 65	Roseville, northeast of Route 80	A-1, A-2		126,307	1.57	4F	F	126,307	1.57		4F	F	126,307	1.57		4F	F	126,307	1.57		4F	F	126,307	1.57		4F	F	126,307	1.57		4F	F
Highway 65	Lincoln, northeast of 7th Street	A-1, A-2		27,970	1.50	2A	F	27,970	1.50		2A	F	27,970	1.50		2A	F	27,970	1.50		2A	F	27,970	1.50		2A	F	27,970	1.50		2A	F
Highway 65	Wheatland, northeast of Evergreen Drive	A-1, A-2		29,323	1.57	2A	F	29,323	1.57		2A	F	29,323	1.57		2A	F	29,323	1.57		2A	F	29,323	1.57		2A	F	29,323	1.57		2A	F
Interstate 80	Roseville, northeast of Route 65	A-1, A-2, O-1, O-2		141,283	1.40	4FA	F	141,283	1.40		4FA	F	141,283	1.40		4FA	F	141,283	1.40		4FA	F	141,283	1.40		4FA	F	141,289	1.40	0.00%	4FA	F
Interstate 80	Rocklin, south of Sierra College Boulevard	A-1, A-2, O-1, O-2		116,924	1.16	4FA	F	116,924	1.16		4FA	F	116,924	1.16		4FA	F	116,924	1.16		4FA	F	116,924	1.16		4FA	F	116,924	1.16		4FA	F

New Aggregate trips are those trips hauling aggregate materials (fine & coarse filters, road base and asphalt)
New Offsite trips are those trips hauling offsite materials (slope u/s, toe drain, hdpe pipe, pipe filter, u/s filter, seeding, rebar)
New BP trips are those trips hauling aggregate materials (cement, fine & coarse aggregates) directly to the batch plants. This does not include trips from the batch plants to the project features
New Equipment trips are those trips hauling in equipment to each project feature staging area (staging area assumed adjacent to project feature for hauling evaluation).

Table 3.9-91
2012 Daily Project Impacts Alternatives 1 though 5

2012

		ROUTE DESIGNATIONS		No Action/No Project				Alternative 1					Alternative 2					Alternative 3					Alternative 4					Alternative 5				
Roadway	Location	Materials/ Equip. Rout	Worker Routes	ADT	V/C	code	LOS	New ADT	V/C	% increase	code	LOS	New ADT	V/C	% increase	code	LOS	New ADT	V/C	% increase	code	LOS	New ADT	V/C	% increase	code	LOS	New ADT	V/C	% increase	code	LOS
Folsom Boulevard	Natoma Street to Blue Ravine Road		W-3A, W-5A, W-6A, W-3B, W-5B, W-6B, W-3C, W-5C, W-6C, W-3D, W-5D, W-3E, W-5E	42,560	1.14	4AD	F	42,668	1.14	0.25%	4AD	F	42,740	1.14	0.42%	4AD	F	42,740	1.14	0.42%	4AD	F	42,740	1.14	0.42%	4AD	F	43,020	1.15	1.08%	4AD	F
Folsom Boulevard	Leidesdorff Street to Greenback Lane		W-3A, W-5A, W-6A, W-3B, W-5B, W-6B, W-3C, W-5C, W-6C	36,704		4AD	E	36,704			4AD	E	36,704			4AD	E	36,704			4AD	E	36,704			4AD	E	36,860		0.43%	4AD	E
Folsom-Auburn Road	Oak Hill Drive to Folsom Dam Road	A-4, O-4, BP-1	W-1C, 2C, 3C, 4C, 5C, 6C, 7C, 1D,2D, 2E, W-3A, 5A, 6A, 3B, 5B, 6B,1E	45,374	2.43	2A	F	45,398	2.43	0.05%	2A	F	45,414	2.43	0.09%	2A	F	45,414	2.43	0.09%	2A	F	45,414	2.43	0.09%	2A	F	45,744	2.45	0.82%	2A	F
Folsom-Auburn Road	Folsom Dam Road to Oak Avenue		W-3A, 5A, 6A, 7A, 3B, 4B, 5B, 6B, 7B, 1E, 2E, 5C	24,096		4AU	D	24,096			4AU	D	24,096			4AU	D	24,096			4AU	D	24,096			4AU	D	24,276		0.75%	4AU	D
Auburn-Folsom (A-F) Road	Douglas Boulevard to Eureka Road	A-2,A-3,A-4, O-2, O-3, O-4, BP-1	W-3A, 5A, 6A, 7A, 1B, 2B, 3B, 4B, 5B, 6B, 7B, 1C, 2C, 1D, 2D, 1E, 2E	38,618	1.34	4AU	F	38,642	1.34	0.06%	4AU	F	38,658	1.34	0.10%	4AU	F	38,658	1.34	0.10%	4AU	F	38,658	1.34	0.10%	4AU	F	38,812	1.34	0.50%	4AU	F
Auburn-Folsom (A-F) Road	Eureka Road to Oak Hill Drive	A-2, A-3, O-2, O-3, BP-1	W-3A, 5A, 6A, 7A, 1B, 2B, 3B, 4B, 5B, 6B, 7B, 1C, 2C, 1D, 2D, 1E, 2E	34,341	1.84	2A	F	34,365	1.84	0.07%	2A	F	34,381	1.84	0.12%	2A	F	34,381	1.84	0.12%	2A	F	34,381	1.84	0.12%	2A	F	34,513	1.85	0.50%	2A	F
Sierra College Boulevard	north of Douglas Boulevard	A-1, A-2, O-1, O-2	W-2A, W-2B, W-2C, W-2D, W-2E	28,471		4AD	D	28,483		0.04%	4AD	D	28,491		0.07%	4AD	D	28,491		0.07%	4AD	D	28,491		0.07%	4AD	D	28,519		0.17%	4AD	D
Eureka Road	east of N. Sunrise Avenue	A-3, A-4, O-3, O-4, BP-1		43,807		6AD	D	43,807			6AD	D				6AD	D				6AD	D				6AD	D	43,807			6AD	D
Douglas Boulevard	east of A-F Road	A-1,O-1	W-1A, W-2A, W-3A, W-4A, W-5A, W-6A,	14,846		2A	D	14,846			2A	D	14,846			2A	D	14,846			2A	D	14,846			2A	D	14,846			2A	D
Douglas Boulevard	Barton Road to A-F Road	A-1, A-2, A-3, A-4, O-1, O-2, O-3, O-4, BP-1	W-1A, W-2A, W-4A, W-1B, W-2B, W-4B, W-1C, W-2C, W-1D, W-2D, W-1E, W-2E	45,261	1.21	4AD	F	45,285	1.21	0.05%	4AD	F	45,301	1.21	0.09%	4AD	F	45,301	1.21	0.09%	4AD	F	45,301	1.21	0.09%	4AD	F	45,411	1.21	0.33%	4AD	F
Douglas Boulevard	Barton to Sierra Colleg Blvd.			52,344	1.40	4AD	F	52,344	1.40		4AD	F				4AD	F				4AD	F				4AD	F	52,344	1.40		4AD	F
Blue Ravine Road	Oak Avenue Parkway to Green Valley Road/East Natoma Street	A-5, A-6,O-5, O-6, BP-2, BP3	W-6D, W-6E	21,956		4AD	D	21,977		0.10%	4AD	D	22,017		0.28%	4AD	D	21,983		0.12%	4AD	D	21,990		0.15%	4AD	D	22,002		0.21%	4AD	D
East Natoma St	Cimmaron Circle to Folsom Dam Road		W-1D, 3D, 4D, 5D, 1E, 2E, 3E, 4E, 5E	18,691		4AU	C	18,907		1.16%	4AU	D	19,051		1.93%	4AU	D	19,051		1.93%	4AU	D	19,051		1.93%	4AU	D	19,303		3.27%	4AU	D
East Natoma St	Folsom Dam Road to Green Valley Road	A-5, A-6,O-5, O-6, BP-2, BP3	W-7A, 7B, 7C, 1D,2D,3D,4D,5D,6D,7D, 1E, 2E, 3E, 4E, 5E, 6E	30,513		4AU	D	30,757		0.80%	4AU	F	30,966		1.48%	4AU	F	30,932		1.37%	4AU	F	30,939		1.40%	4AU	F	31,227		2.34%	4AU	F
Green Valley Road	East Natoma Street to Sophia Parkway	A-6, O-6	W-1E, W-2E, W-3E, W-4E, W-5E, W-6E	36,028	1.25	4AU	F	36,028	1.25		4AU	F	36,028	1.25		4AU	F	36,028	1.25		4AU	F	36,028	1.25		4AU	F	36,124	1.25	0.27%	4AU	F
Greenback Lane	Hazel Avenue to Madison Avenue		W-4B, W-4C, W-4D, W-4E	27,135		4AMD	C	27,231		0.35%	4AMD	C	27,295		0.59%	4AMD	C	27,295		0.59%	4AMD	C	27,295		0.59%	4AMD	C	27,535		1.47%	4AMD	C
East Bidwell Street	Clarksville Road to Iron Point Road	A-5, A-6, O-5, O-6, BP-2, BP-3	W-6D, W-6E	44,247		4AD	F	44,269		0.05%	4AD	F	44,288		0.09%	4AD	F	44,289		0.09%	4AD	F	44,303		0.13%	4AD	F	44,313		0.15%	4AD	F
Oak Avenue Parkway	Blue Ravine Road to East Bidwell Street		W-6D, W-6E	24,996		6AD	C	25,004		0.03%	6AD	C	25,008		0.05%	6AD	C	25,008		0.05%	6AD	C	25,008		0.05%	6AD	C	25,016		0.08%	6AD	C
Scott Road (south)	south of White Rock Road	A-5, A-6, BP-2, BP-3		1,863		2C	A/B	1,868		0.27%	2C	A/B				2C	A/B				2C	A/B				2C	A/B	1,863			2C	A/B
White Rock Road	between Scott Road (south) and Scott Road (north)	A-5, A-6, BP-2, BP-3		10,232	1.04	2C	F	10,237	1.04	0.05%	2C	F				2C	F				2C	F				2C	F	10,232	1.04		2C	F
Scott Road (north)	north of White Rock Road	A-5, A-6, BP-2, BP-3		7,122		2C	D	7,126		0.06%	2C	D				2C	D				2C	D				2C	D	7,122			2C	D
US50	Hazel Avenue to Folsom Boulevard	O-5, O-6	W-5A, W-5B, W-5C, W-5D, W-5E	131,500	1.31	4FA	F	131,600	1.31	0.08%	4FA	F	131,687	1.31	0.14%	4FA	F	131,669	1.31	0.13%	4FA	F	131,672	1.31	0.13%	4FA	F	131,914	1.31	0.31%	4FA	F
US50	Folsom Boulevard to Prairie City Road	O-5, O-6	W-6A, W-6B, W-6C	111,460	1.39	4F	F	111,464	1.39	0.00%	4F	F	111,487	1.39	0.02%	4F	F	111,469	1.39	0.01%	4F	F	111,472	1.39	0.01%	4F	F	111,486	1.39	0.02%	4F	F
US50	Prairie City Road to East Bidwell Street	O-5, O-6	W-6A, W-6B, W-6C	80,837	1.01	4F	F	80,841	1.01	0.00%	4F	F	80,864	1.01	0.03%	4F	F	80,846	1.01	0.01%	4F	F	80,849	1.01	0.01%	4F	F	80,863	1.01	0.03%	4F	F
US50	East Bidwell St to County Line		W-6A, W-6B, W-6C, W-6D, W-6E	92,207	1.15	4F	F	92,303	1.15	0.10%	4F	F	92,219	1.15	0.01%	4F	F	92,219	1.15	0.01%	4F	F	92,219	1.15	0.01%	4F	F	92,239	1.15	0.03%	4F	F
Regional Access Routes																																
Hammonton-Smartville (H-S) Road	north of N. Beale Road	A-1, A-2		10,181	1.04	2C	F	10,181	1.04		2C	F	10,181	1.04		2C	F	10,181	1.04		2C	F	10,181	1.04		2C	F	10,181	1.04		2C	F
N Beale Road	south of H-S Road	A-1, A-2		31,304	1.08	4AU	F	31,304	1.08		4AU	F	31,304	1.08		4AU	F	31,304	1.08		4AU	F	31,304	1.08		4AU	F	31,304	1.08		4AU	F
Feather River Blvd. Ramp	south of N. Beale Street	A-1, A-2																														
Highway 70	Yuba County, east of Feather River Boulevard interchange	A-1, A-2		75,712	2.10	4AMD	F	75,712	2.10		4AMD	F	75,712	2.10		4AMD	F	75,712	2.10		4AMD	F	75,712	2.10		4AMD	F	75,712	2.10		4AMD	F
Highway 65	Roseville, northeast of Route 80	A-1, A-2		133,886	1.67	4F	F	133,886	1.67		4F	F	133,886	1.67		4F	F	133,886	1.67		4F	F	133,886	1.67		4F	F	133,886	1.67		4F	F
Highway 65	Lincoln, northeast of 7th Street	A-1, A-2		29,649	1.59	2A	F	29,649	1.59		2A	F	29,649	1.59		2A	F	29,649	1.59		2A	F	29,649	1.59		2A	F	29,649	1.59		2A	F
Highway 65	Wheatland, northeast of Evergreen Drive	A-1, A-2		31,083	1.66	2A	F	31,083	1.66		2A	F	31,083	1.66		2A	F	31,083	1.66		2A	F	31,083	1.66		2A	F	31,083	1.66		2A	F
Interstate 80	Roseville, northeast of Route 65	A-1, A-2, O-1, O-2		144,109	1.43	4FA	F	144,109	1.43		4FA	F	144,109	1.43		4FA	F	144,109	1.43		4FA	F	144,109	1.43		4FA	F	144,109	1.43		4FA	F
Interstate 80	Rocklin, south of Sierra College Boulevard	A-1, A-2, O-1, O-2		119,263	1.18	4FA	F	119,263	1.18		4FA	F	119,263	1.18		4FA	F	119,263	1.18		4FA	F	119,263	1.18		4FA	F	119,263	1.18		4FA	F

New Aggregate trips are those trips hauling aggregate materials (fine & coarse filters, road base and asphalt)
New Offsite trips are those trips hauling offsite materials (slope u/s, toe drain, hdpe pipe, pipe filter, u/s filter, seeding, rebar)
New BP trips are those trips hauling aggregate materials (cement, fine & coarse aggregates) directly to the batch plants. This does not include trips from the batch plants to the project features
New Equipment trips are those trips hauling in equipment to each project feature staging area (staging area assumed adjacent to project feature for hauling evaluation).

Table 3.9-92
2013 Daily Project Impacts Alternatives 1 though 5

				2013																												
		ROUTE DESIGNATIONS		No Action/No Project				Alternative 1					Alternative 2					Alternative 3					Alternative 4					Alternative 5				
Roadway	Location	Materials/ Equip. Routes	Worker Routes	ADT	V/C	code	LOS	New ADT	V/C	% increase	code	LOS	New ADT	V/C	% increase	code	LOS	New ADT	V/C	% increase	code	LOS	New ADT	V/C	% increase	code	LOS	New ADT	V/C	% increase	code	LOS
Folsom Boulevard	Natoma Street to Blue Ravine Road		W-3A, W-5A, W-6A, W-3B, W-5B, W-6B, W-3C, W-5C, W-6C, W-3D, W-5D, W-3E, W-5E	43,412	1.16	4AD	F	43,484	1.16	0.17%	4AD	F	43,696	1.17	0.65%	4AD	F	43,592	1.17	0.41%	4AD	F	43,756	1.17	0.79%	4AD	F	43,800	1.17	0.89%	4AD	F
Folsom Boulevard	Leidesdorff Street to Greenback Lane		W-3A, W-5A, W-6A, W-3B, W-5B, W-6B, W-3C, W-5C, W-6C	37,439	1.00	4AD	F	37,439	1.00		4AD	F	37,543	1.00	0.28%	4AD	F	37,439	1.00		4AD	F	37,603	1.01	0.44%	4AD	F	37,603	1.01	0.44%	4AD	F
Folsom-Auburn Road	Oak Hill Drive to Folsom Dam Road	A-4, O-4, BP-1	W-1C, 2C, 3C, 4C, 5C, 6C, 7C, 1D,2D, 2E, W-3A, 5A, 6A, 3B, 5B, 6B,1E	46,282	2.47	2A	F	46,298	2.48	0.03%	2A	F	46,426	2.48	0.31%	2A	F	46,322	2.48	0.09%	2A	F	46,486	2.49	0.44%	2A	F	46,494	2.49	0.46%	2A	F
Folsom-Auburn Road	Folsom Dam Road to Oak Avenue		W-3A, 5A, 6A, 7A, 3B, 4B, 5B, 6B, 7B, 1E, 2E, 5C	24,578		4AU	D	24,578			4AU	D	24,738		0.65%	4AU	D	24,578			4AU	D	24,798		0.90%	4AU	D	24,810		0.94%	4AU	D
Auburn-Folsom (A-F) Road	Douglas Boulevard to Eureka Road	A-2,A-3,A-4, O-2, O-3, O-4, BP-1	W-3A, 5A, 6A, 7A, 1B, 2B, 3B, 4B, 5B, 6B, 7B, 1C, 2C, 1D, 2D, 1E, 2E	39,391	1.36	4AU	F	39,407	1.36	0.04%	4AU	F	39,612	1.37	0.56%	4AU	F	39,431	1.36	0.10%	4AU	F	39,673	1.37	0.72%	4AU	F	39,688	1.37	0.75%	4AU	F
Auburn-Folsom (A-F) Road	Eureka Road to Oak Hill Drive	A-2, A-3, O-2, O-3, BP-1	W-3A, 5A, 6A, 7A, 1B, 2B, 3B, 4B, 5B, 6B, 7B, 1C, 2C, 1D, 2D, 1E, 2E	35,028	1.87	2A	F	35,044	1.87	0.05%	2A	F	35,249	1.88	0.63%	2A	F	35,068	1.88	0.11%	2A	F	35,310	1.89	0.81%	2A	F	35,325	1.89	0.85%	2A	F
Sierra College Boulevard	north of Douglas Boulevard	A-1, A-2, O-1, O-2	W-2A, W-2B, W-2C, W-2D, W-2E	29,041		4AD	D	29,049		0.03%	4AD	D	29,095		0.19%	4AD	D	29,061		0.07%	4AD	D	29,097		0.19%	4AD		29,150		0.38%	4AD	D
Eureka Road	east of N. Sunrise Avenue	A-3, A-4, O-3, O-4, BP-1		44,684		6AD	D	44,684			6AD	D				6AD	D				6AD	D				6AD	D	44,684			6AD	D
Douglas Boulevard	east of A-F Road	A-1,O-1	W-1A, W-2A, W-3A, W-4A, W-5A, W-6A, W-7A	15,143		2A	D	15,143			2A	D	15,252		0.72%	2A		15,143			2A	D	15,377		1.55%	2A	D	15,419		1.82%	2A	D
Douglas Boulevard	Barton Road to A-F Road	A-1, A-2, A-3, A-4, O-1, O-2, O-3, O-4, BP-1	W-1A, W-2A, W-4A, W-1B, W-2B, W-4B, W-1C, W-2C, W-1D, W-2D, W-1E, W-2E	46,167	1.23	4AD	F	46,183	1.23	0.03%	4AD	F	46,337	1.24	0.37%	4AD	F	46,207	1.24	0.09%	4AD	F	46,395	1.24	0.49%	4AD	F	46,452	1.24	0.62%	4AD	F
Douglas Boulevard	Barton to Sierra Colleg Blvd.			53,391	1.43	4AD	F	53,391	1.43		4AD	F				4AD	F				4AD	F				4AD	F	53,391	1.43		4AD	F
Blue Ravine Road	Oak Avenue Parkway to Green Valley Road/East Natoma Street	A-5, A-6,O-5, O-6, BP-2, BP3	W-6D, W-6E	22,396		4AD	D	22,413		0.08%	4AD	D	22,457		0.27%	4AD	D	22,415		0.08%	4AD	D	22,427		0.14%	4AD	D	22,432		0.16%	4AD	D
East Natoma St	Cimmaron Circle to Folsom Dam Road		W-1D, 3D, 4D, 5D, 1E, 2E, 3E, 4E, 5E	19,065		4AU	D	19,209		0.76%	4AU	D	19,425		1.89%	4AU	D	19,425		1.89%	4AU	D	19,425		1.89%	4AU	D	19,517		2.37%	4AU	D
East Natoma St	Folsom Dam Road to Green Valley Road	A-5, A-6,O-5, O-6, BP-2, BP3	W-7A, 7B, 7C, 1D,2D,3D,4D,5D,6D,7D, 1E, 2E, 3E, 4E, 5E, 6E	31,124	1.08	4AU	F	31,297	1.08	0.56%	4AU	F	31,585	1.09	1.48%	4AU	F	31,535	1.09	1.32%	4AU	F	31,559	1.09	1.40%	4AU	F	31,656	1.10	1.71%	4AU	F
Green Valley Road	East Natoma Street to Sophia Parkway	A-6, O-6	W-1E, W-2E, W-3E, W-4E, W-5E, W-6E	36,749	1.27	4AU	F	36,749	1.27		4AU	F	36,749	1.27		4AU	F	36,749	1.27		4AU	F	36,749	1.27		4AU	F	36,845	1.27	0.26%	4AU	F
Greenback Lane	Hazel Avenue to Madison Avenue		W-4B, W-4C, W-4D, W-4E	27,678		4AMD	C	27,742		0.23%	4AMD	C	27,886		0.75%	4AMD	C	27,838		0.58%	4AMD	C	27,886		0.75%	4AMD	C	27,926		0.90%	4AMD	C
East Bidwell Street	Clarksville Road to Iron Point Road	A-5, A-6, O-5, O-6, BP-2, BP-3	W-6D, W-6E	45,132		4AD	F	45,171		0.09%	4AD	F	45,192		0.13%	4AD	F	45,152		0.04%	4AD	F	45,184		0.12%	4AD	F	45,186		0.12%	4AD	F
Oak Avenue Parkway	Blue Ravine Road to East Bidwell Street		W-6D, W-6E	25,496		6AD	C	25,500		0.02%	6AD	C	25,508		0.05%	6AD	C	25,508		0.05%	6AD	C	25,508		0.05%	6AD	C	25,512		0.06%	6AD	C
Scott Road (south)	south of White Rock Road	A-5, A-6, BP-2, BP-3		1,901		2C	A/B	1,912		0.58%	2C	A/B				2C	A/B				2C	A/B				2C	A/B	1,901			2C	A/B
White Rock Road	between Scott Road (south) and Scott Road (north)	A-5, A-6, BP-2, BP-3		10,437	1.07	2C	F	10,448	1.07	0.11%	2C	F				2C	F				2C	F				2C	F	10,437	1.07		2C	F
Scott Road (north)	north of White Rock Road	A-5, A-6, BP-2, BP-3		7,265		2C	D	7,267		0.03%	2C	D				2C	D				2C	D				2C	D	7,265			2C	D
US50	Hazel Avenue to Folsom Boulevard	O-5, O-6	W-5A, W-5B, W-5C, W-5D, W-5E	134,130	1.33	4FA	F	134,196	1.33	0.05%	4FA	F	134,401	1.33	0.20%	4FA	F	134,295	1.33	0.12%	4FA	F	134,432	1.33	0.23%	4FA	F	134,472	1.34	0.25%	4FA	F
US50	Folsom Boulevard to Prairie City Road	O-5, O-6	W-6A, W-6B, W-6C	113,690	1.42	4F	F	113,692	1.42	0.00%	4F	F	113,723	1.42	0.03%	4F	F	113,695	1.42	0.00%	4F	F	113,712	1.42	0.02%	4F	F	113,712	1.42	0.02%	4F	F
US50	Prairie City Road to East Bidwell Street	O-5, O-6	W-6A, W-6B, W-6C	82,454	1.03	4F	F	82,456	1.03	0.00%	4F	F	82,487	1.03	0.04%	4F	F	82,459	1.03	0.01%	4F	F	82,476	1.03	0.03%	4F	F	82,476	1.03	0.03%	4F	F
US50	East Bidwell St to County Line		W-6A, W-6B, W-6C, W-6D, W-6E	94,052	1.17	4F	F	94,056	1.17	0.00%	4F	F	94,072	1.17	0.02%	4F	F	94,064	1.17	0.01%	4F	F	94,076	1.17	0.03%	4F	F	94,080	1.17	0.03%	4F	F
Regional Access Routes																																
Hammonton-Smartville (H-S) Road	north of N. Beale Road	A-1, A-2		10,385	1.06	2C	F	10,385	1.06		2C	F	10,393	1.06	0.08%	2C	F	10,385	1.06		2C	F	10,385	1.06		2C	F	10,467	1.07	0.79%	2C	F
N Beale Road	south of H-S Road	A-1, A-2		31,930	1.10	4AU	F	31,930	1.10		4AU	F	31,938	1.11	0.03%	4AU	F	31,930	1.10		4AU	F	31,930	1.10		4AU	F	32,012	1.11	0.26%	4AU	F
Feather River Blvd. Ramp	south of N. Beale Street	A-1, A-2																														
Highway 70	Yuba County, east of Feather River Boulevard interchange	A-1, A-2		80,255	2.23	4AMD	F	80,255	2.23		4AMD	F	80,263	2.23	0.01%	4AMD	F	80,255	2.23		4AMD	F	80,255	2.23		4AMD	F	80,337	2.23	0.10%	4AMD	F
Highway 65	Roseville, northeast of Route 80	A-1, A-2		141,920	1.77	4F	F	141,920	1.77		4F	F	141,928	1.77	0.01%	4F	F	141,920	1.77		4F	F	141,920	1.77		4F	F	142,002	1.77	0.06%	4F	F
Highway 65	Lincoln, northeast of 7th Street	A-1, A-2		31,428	1.68	2A	F	31,428	1.68		2A	F	31,436	1.68	0.03%	2A	F	31,428	1.68		2A	F	31,428	1.68		2A	F	31,510	1.69	0.26%	2A	F
Highway 65	Wheatland, northeast of Evergreen Drive	A-1, A-2		32,948	1.76	2A	F	32,948	1.76		2A	F	32,956	1.76	0.02%	2A	F	32,948	1.76		2A	F	32,948	1.76		2A	F	33,030	1.77	0.25%	2A	F
Interstate 80	Roseville, northeast of Route 65	A-1, A-2, O-1, O-2		146,992	1.46	4FA	F	146,992	1.46		4FA	F	147,054	1.46	0.04%	4FA	F	146,992	1.46		4FA	F	147,040	1.46	0.03%	4FA	F	147,146	1.46	0.10%	4FA	F
Interstate 80	Rocklin, south of Sierra College Boulevard	A-1, A-2, O-1, O-2		121,649	1.21	4FA	F	121,649	1.21		4FA	F	121,667	1.21	0.01%	4FA	F	121,649	1.21		4FA	F	121,655	1.21	0.00%	4FA	F	121,649	1.21		4FA	F

New Aggregate trips are those trips hauling aggregate materials (fine & coarse filters, road base and asphalt)
New Offsite trips are those trips hauling offsite materials (slope u/s, toe drain, hdpe pipe, pipe filter, u/s filter, seeding, rebar)
New BP trips are those trips hauling aggregate materials (cement, fine & coarse aggregates) directly to the batch plants. This does not include trips from the batch plants to the project features
New Equipment trips are those trips hauling in equipment to each project feature staging area (staging area assumed adjacent to project feature for hauling evaluation).

Table 3.9-93
2014 Daily Project Impacts Alternatives 1 though 5

				2014																												
		DESIGNATIONS		***No Action/No Project***				***Alternative 1***					***Alternative 2***					***Alternative 3***					***Alternative 4***					***Alternative 5***				
Roadway	***Location***	***Materials/ Equip. Routes***	***Worker Routes***	***ADT***	***V/C***	***code***	***LOS***	***New ADT***	***V/C***	***% increase***	***code***	***LOS***	***New ADT***	***V/C***	***% increase***	***code***	***LOS***	***New ADT***	***V/C***	***% increase***	***code***	***LOS***	***New ADT***	***V/C***	***% increase***	***code***	***LOS***	***New ADT***	***V/C***	***% increase***	***code***	***LOS***
Folsom Boulevard	Natoma Street to Blue Ravine Road		W-3A, W-5A, W-6A, W-3B, W-5B, W-6B, W-3C, W-5C, W-6C, W-3D, W-5D, W-3E, W-5E	44,715	1.20	4AD	F	44,833	1.20	0.26%	4AD	F	44,715	1.20		4AD	F	44,715	1.20		4AD	F	44,715	1.20		4AD	F	44,951	1.20	0.53%	4AD	F
Folsom Boulevard	Leidesdorff Street to Greenback Lane		W-3A, W-5A, W-6A, W-3B, W-5B, W-6B, W-3C, W-5C, W-6C	38,563	1.03	4AD	F	38,563	1.03		4AD	F	38,563	1.03		4AD	F	38,563	1.03		4AD	F	38,563	1.03		4AD	F	38,727	1.04	0.43%	4AD	F
Folsom-Auburn Road	Oak Hill Drive to Folsom Dam Road	A-4, O-4, BP-1	W-1C, 2C, 3C, 4C, 5C, 6C, 7C, 1D,2D, 2E, W-3A, 5A, 6A, 3B, 5B, 6B,1E	47,671	2.55	2A	F	47,671	2.55		2A	F	47,671	2.55		2A	F	47,671	2.55		2A	F	47,671	2.55		2A	F	47,851	2.56	0.38%	2A	F
Folsom-Auburn Road	Folsom Dam Road to Oak Avenue		W-3A, 5A, 6A, 7A, 3B, 4B, 5B, 6B, 7B, 1E, 2E, 5C	25,316		4AU	D	25,316			4AU	D	25,316			4AU	D	25,316			4AU	D	25,316			4AU	D	25,540		0.88%	4AU	D
Auburn-Folsom (A-F) Road	Douglas Boulevard to Eureka Road	A-2,A-3,A-4, O-2, O-3, O-4, BP-1	W-3A, 5A, 6A, 7A, 1B, 2B, 3B, 4B, 5B, 6B, 7B, 1C, 2C, 1D, 2D, 1E, 2E	40,573	1.40	4AU	F	40,573	1.40		4AU	F	40,573	1.40		4AU	F	40,573	1.40		4AU	F	40,573	1.40		4AU	F	40,894	1.42	0.79%	4AU	F
Auburn-Folsom (A-F) Road		A-2, A-3, O-2, O-3, BP-1	W-3A, 5A, 6A, 7A, 1B, 2B, 3B, 4B, 5B, 6B, 7B, 1C, 2C, 1D, 2D, 1E, 2E	36,079	1.93	2A	F	36,079	1.93		2A	F	36,079	1.93		2A	F	36,079	1.93		2A	F	36,079	1.93		2A	F	36,396	1.95	0.88%	2A	F
Sierra College Boulevard	north of Douglas Boulevard	A-1, A-2, O-1, O-2	W-2A, W-2B, W-2C, W-2D, W-2E	29,913		4AD	D	29,913			4AD	D	29,913			4AD	D	29,913			4AD	D	29,913			4AD	D	30,006		0.31%	4AD	D
Eureka Road	east of N. Sunrise Avenue	A-3, A-4, O-3, O-4, BP-1		46,025		6AD	D	46,025			6AD	D				6AD	D				6AD	D				6AD	D	46,025			6AD	D
Douglas Boulevard	east of A-F Road	A-1,O-1	W-1A, W-2A, W-3A, W-4A, W-5A, W-6A, W-7A	15,598		2A	D	15,598			2A	D	15,598			2A	D	15,598			2A	D	15,598			2A	D	15,874		1.77%	2A	D
Douglas Boulevard	Barton Road to A-F Road	A-1, A-2, A-3, A-4, O-1, O-2, O-3, O-4, BP-1	W-1A, W-2A, W-4A, W-1B, W-2B, W-4B, W-1C, W-2C, W-1D, W-2D, W-1E, W-2E	47,553	1.27	4AD	F	47,553	1.27		4AD	F	47,553	1.27		4AD	F	47,553	1.27		4AD	F	47,553	1.27		4AD	F	47,806	1.28	0.53%	4AD	F
Douglas Boulevard	Barton to Sierra Colleg Blvd.			54,993	1.47	4AD	F	54,993	1.47		4AD	F				4AD	F				4AD	F				4AD	F	54,993	1.47		4AD	F
Blue Ravine Road	Oak Avenue Parkway to Green Valley Road/East Natoma Street	A-5, A-6,O-5, O-6, BP-2, BP3	W-6D, W-6E	23,068		4AD	D	23,068			4AD	D	23,068			4AD	D	23,068			4AD	D	23,068			4AD	D	23,087		0.08%	4AD	D
East Natoma St	Cimmaron Circle to Folsom Dam Road		W-1D, 3D, 4D, 5D, 1E, 2E, 3E, 4E, 5E	19,637		4AU	D	19,637			4AU	D	19,637			4AU	D	19,637			4AU	D	19,637			4AU	D	19,781		0.73%	4AU	D
East Natoma St	Folsom Dam Road to Green Valley Road	A-5, A-6,O-5, O-6, BP-2, BP3	W-7A, 7B, 7C, 1D,2D,3D,4D,5D,6D,7D, 1E, 2E, 3E, 4E, 5E, 6E	32,058	1.11	4AU	F	32,058	1.11		4AU	F	32,058	1.11		4AU	F	32,058	1.11		4AU	F	32,058	1.11		4AU	F	32,245	1.12	0.58%	4AU	F
Green Valley Road	East Natoma Street to Sophia Parkway	A-6, O-6	W-1E, W-2E, W-3E, W-4E, W-5E, W-6E	37,852	1.31	4AU	F	37,852	1.31		4AU	F	37,852	1.31		4AU	F	37,852	1.31		4AU	F	37,852	1.31		4AU	F	37,852	1.31		4AU	F
Greenback Lane	Hazel Avenue to Madison Avenue		W-4B, W-4C, W-4D, W-4E	28,509		4AMD	C	28,509			4AMD	C	28,509			4AMD	C	28,509			4AMD	C	28,509			4AMD	C	28,705		0.69%	4AMD	C
East Bidwell Street	Clarksville Road to Iron Point Road	A-5, A-6, O-5, O-6, BP-2, BP-3	W-6D, W-6E	46,486		4AD	F	46,486			4AD	F	46,486			4AD	F	46,486			4AD	F	46,486			4AD	F	46,531		0.10%	4AD	F
Oak Avenue Parkway	Blue Ravine Road to East Bidwell Street		W-6D, W-6E	26,261		6AD	C	26,261			6AD	C	26,261			6AD	C	26,261			6AD	C	26,261			6AD	C	26,265		0.02%	6AD	C
Scott Road (south)	south of White Rock Road	A-5, A-6, BP-2, BP-3		1,959		2C	A/B	1,959			2C	A/B				2C	A/B				2C	A/B				2C	A/B	1,959			2C	A/B
White Rock Road	between Scott Road (south) and Scott Road (north)	A-5, A-6, BP-2, BP-3		10,751	1.10	2C	F	10,751	1.10		2C	F				2C	F				2C	F				2C	F	10,751	1.10		2C	F
Scott Road (north)	north of White Rock Road	A-5, A-6, BP-2, BP-		7,483		2C	D	7,483			2C	D				2C	D				2C	D				2C	D	7,483			2C	D
US50	Hazel Avenue to Folsom Boulevard	O-5, O-6	W-5A, W-5B, W-5C, W-5D, W-5E	138,154	1.37	4FA	F	138,154	1.37		4FA	F	138,154	1.37		4FA	F	138,154	1.37		4FA	F	138,154	1.37		4FA	F	138,362	1.37	0.15%	4FA	F
US50	Folsom Boulevard to Prairie City Road	O-5, O-6	W-6A, W-6B, W-6C	117,101	1.46	4F	F	117,101	1.46		4F	F	117,101	1.46		4F	F	117,101	1.46		4F	F	117,101	1.46		4F	F	117,125	1.46	0.02%	4F	F
US50	Prairie City Road to East Bidwell Street	O-5, O-6	W-6A, W-6B, W-6C	84,928	1.06	4F	F	84,928	1.06		4F	F	84,928	1.06		4F	F	84,928	1.06		4F	F	84,928	1.06		4F	F	84,952	1.06	0.03%	4F	F
US50	East Bidwell St to County Line		W-6A, W-6B, W-6C, W-6D, W-6E	96,874	1.21	4F	F	96,874	1.21		4F	F	96,874	1.21		4F	F	96,874	1.21		4F	F	96,874	1.21		4F	F	96,890	1.21	0.02%	4F	F
Regional Access Routes																																
Hammonton-Smartville (H-S) Road	north of N. Beale Road	A-1, A-2		10,593	1.08	2C	F	10,593	1.08		2C	F	10,593	1.08		2C	F	10,593	1.08		2C	F	10,593	1.08		2C	F	10,675	1.09	0.77%	2C	F
N Beale Road	south of H-S Road	A-1, A-2		32,569	1.13	4AU	F	32,569	1.13		4AU	F	32,569	1.13		4AU	F	32,569	1.13		4AU	F	32,569	1.13		4AU	F	32,651	1.13	0.25%	4AU	F
Feather River Blvd. Ramp	south of N. Beale Street	A-1, A-2																														
Highway 70	Yuba County, east of Feather River Boulevard interchange	A-1, A-2		85,071	2.36	4AMD	F	85,071	2.36		4AMD	F	85,071	2.36		4AMD	F	85,071	2.36		4AMD	F	85,071	2.36		4AMD	F	85,153	2.37	0.10%	4AMD	F
Highway 65	Roseville, northeast of Route 80	A-1, A-2		150,436	1.88	4F	F	150,436	1.88		4F	F	150,436	1.88		4F	F	150,436	1.88		4F	F	150,436	1.88		4F	F	150,518	1.88	0.05%	4F	F
Highway 65	Lincoln, northeast of 7th Street	A-1, A-2		33,314	1.78	2A	F	33,314	1.78		2A	F	33,314	1.78		2A	F	33,314	1.78		2A	F	33,314	1.78		2A	F	33,396	1.79	0.25%	2A	F
Highway 65	Wheatland, northeast of Evergreen Drive	A-1, A-2		34,925	1.87	2A	F	34,925	1.87		2A	F	34,925	1.87		2A	F	34,925	1.87		2A	F	34,925	1.87		2A	F	35,007	1.87	0.23%	2A	F
Interstate 80	Roseville, northeast of Route 65	A-1, A-2, O-1, O-2		149,932	1.49	4FA	F	149,932	1.49		4FA	F	149,932	1.49		4FA	F	149,932	1.49		4FA	F	149,932	1.49		4FA	F	150,086	1.49	0.10%	4FA	F
Interstate 80	Rocklin, south of Sierra College Boulevard	A-1, A-2, O-1, O-2		124,082	1.23	4FA	F	124,082	1.23		4FA	F	124,082	1.23		4FA	F	124,082	1.23		4FA	F	124,082	1.23		4FA	F	124,236	1.23	0.12%	4FA	F

New Aggregate trips are those trips hauling aggregate materials (fine & coarse filters, road base and asphalt)
New Offsite trips are those trips hauling offsite materials (slope u/s, toe drain, hdpe pipe, pipe filter, u/s filter, seeding, rebar
New BP trips are those trips hauling aggregate materials (cement, fine & coarse aggregates) directly to the batch plants. This does not include trips from the batch plants to the project features
New Equipment trips are those trips hauling in equipment to each project feature staging area (staging area assumed adjacent to project feature for hauling evaluation).

For the purpose of quantitatively determining significant traffic impacts, the analysis conducted for the Folsom DS/FDR applies the significance criteria described earlier in Section 3.9.3.1 to the Folsom DS/FDR related ADT increases occurring on roadways within the Folsom DS/FDR study area. Specifically, a significant impact is considered to occur if the addition of Folsom DS/FDR related traffic causes a roadway to experience an LOS deterioration (i.e., change of LOS grade downward), or experience an increase in the V/C ratio of more the 0.05 if it is currently operating at LOS F, or would experience an increase in daily traffic volumes of 2%. It is important to note that these significance thresholds are considered, for the purposes of this EIS/EIR analysis, to be extremely conservative (i.e., stringent) inasmuch as the standards from which they are derived, presented in Table 3.9-3, are intended to apply primarily to permanent increases in traffic such as from long-term operation of development projects and not necessarily to temporary increases associated with construction activities.

3.9.2.3 Environmental Consequences/Environmental Impacts

Environmental Consequences/Environmental Impacts of the No Action/No Project Alternative

There would be no impacts associated with implementation of the No Action/No Project Alternative. As illustrated in Table 3.9-8, the impact of not implementing the Folsom DS/FDR and not conducting the associated construction activities would have no impact on existing and future 'no build' traffic volumes. The CEQA baseline 2006 and the 2007 through 2014 'no build' conditions would not experience an increase in traffic aside from that of normal background growth due to other unrelated development projects as well as, general population, job and household growth in the area.

The No Action/No Project Alternative would have no effect on transportation resources.

Environmental Consequences/Environmental Impacts of Alternative 1

Project construction under this alternative would result in traffic impacts.

Tables 3.9-86 through 3.9-93 present the traffic impacts associated with each of the alternatives for each construction year from 2007 through 2014. Included therein are the ADT, V/C ratio, and LOS rating for each key roadway in the study area, as estimated for the No Action/No Project Alternative and each action alternative. Inasmuch as the No Action/No Project Alternative would result in no traffic impacts, as described above, it is considered to be, for both NEPA purposes and CEQA purposes, the basis of comparison for determining the impacts of each action alternative. Any deterioration in LOS rating, increase in V/C of 0.05 for roadways with an existing LOS of F, increase in ADT of more than 2% for an action alternative compared against the No Action/No Project Alternative is considered a significant impact.

According to the trip generation, distribution and assignment, each of the routes to be used for hauling routes, worker routes, or both, for Alternative 1, implementation of this alternative would result in significant impacts to traffic in the study area, as described below.

LOS Deterioration
No LOS deteriorations would occur in 2007, 2008, 2010, 2011, or 2013. In 2009, East Natoma Street from Folsom Dam Road to Green Valley Road would be expected to degrade LOS from E to F under Alternative 1. In 2012, traffic on East Natoma Street would decrease from a LOS C to LOS D and LOS D to LOS F.

ADT Increase > 2%
There would be some roadways in certain years that would experience an increase in ADT of greater than 2%, up to a maximum of approximately 8.44%; however the vast majority of roadways would experience ADT increases of far less than 2%, and there are some years (i.e., 2007, 2012, 2013, and 2014) with no roadways experience and ADT increase of 2% or more. The following roadways would be expected to experience an increase of 2% or more in ADT:

- East Natoma Street from Cimmaron Circle to Folsom Dam Road (2009 and 2010).
- East Natoma Street from Folsom Dam Road to Green Valley Road (2009 and 2010).
- Scott Road, south of White Rock Road (2008 through 2011).

LOS F V/C Increase >0.05
There are no instances of this occurring under Alternative 1.

Mitigation Measures T-1 through T-3 would address the potential traffic impacts presented above.

Increased traffic on roadways within the study area, including increased truck travel, could incrementally increase the risk of collisions or affect alternative transportation.

This would include increased traffic on Douglas Boulevard, East Bidwell Street, and Folsom Boulevard, which are identified in Section 3.9.1.3 as posing a possible safety concern. As such, the project-related increased traffic on those and other roadways in the study area is considered to have the potential for resulting in a significant safety impact.

Increased traffic resulting from the project, especially truck traffic, could ostensibly affect alternative transportation, to the extent that bike lanes and routes are temporarily constrained, if at all. Mitigation Measures T-1 to T-3 would address this impact.

Implementation of the proposed project will draw a large construction workforce, which, in turn, will create the need for worker vehicle parking areas.

It is anticipated that much of the needed parking area will be provided within open areas at/near Folsom Facility, in areas not currently used for parking. There may, however, be the need or opportunity for centralized off-site parking, with a shuttle to transport workers to and from the site. The designation and use of areas for parking would be coordinated with other existing demands, if any, for use of the same area. It is possible that existing parking along certain segments of designated truck haul routes may be temporarily restricted from time to time in order to enhance capacity and flow along the route during construction hours. Similar to above, any temporary restrictions on street parking would be designed, timed, and implemented in coordination with the existing needs for that parking, and would include provisions for temporary replacement parking nearby, if appropriate. Mitigation Measures T-1 through T-3 are intended to address such impacts.

Based on the above, implementation of this alternative poses the potential to result in significant traffic impacts.

Mitigation Measures T-1 through T-3 would address those significant impacts and are intended to reduce them to a less-than-significant level; however, the specific design, application, and degree of effectiveness of those measures requires certain detailed project information that is not yet available. In particular, more detailed information regarding the construction approach, phasing, timeframe, and other such considerations is required to confirm the exact nature and extent of impacts on the individual roads and intersections described above, which, in turn, provides the basis for identifying the specific traffic improvement measures tailored to the impacts measures. Such additional project details and traffic mitigation design would occur in conjunction with the further engineering and design that would occur for the selected alternative. Until that more detailed evaluation and traffic mitigation design is completed, and its effectiveness can be more fully assessed, the traffic impacts associated with this alternative are considered, for now, to remain potentially significant.

Construction activities at the Folsom Facility would not affect emergency vehicle access routes.

Some construction activities are within the City of Folsom. Construction vehicles could potentially impede emergency vehicles accessing emergency sites. Section 3.14 addresses potential effects to police and fire services and Section 3.17 addresses potential risks to public safety. All construction activities of the Folsom DS/FDR action would be coordinated with police and fire services to establish emergency routes before construction and avoid effects to emergency vehicle routes. A fire management plan will be developed to address potential public safety effects.

This impact would be less than significant.

Environmental Consequences/Environmental Impacts of Alternative 2
Project construction under this alternative would result in traffic impacts.

According to the trip generation, distribution and assignment, each of the routes to be used for hauling routes, worker routes, or both, for Alternative 2, implementation of this alternative would result in significant impacts to traffic in the study area, as described below.

LOS Deterioration
No LOS deteriorations would occur in 2007, 2008, 2010, 2011, or 2013. In 2009, East Natoma Street from Folsom Dam Road to Green Valley Road is expected to degrade LOS from E to F under Alternative 2 in 2009. In 2012, traffic on East Natoma Street would decrease from a LOS C to LOS D and LOS D to LOS F.

ADT Increase > 2%
According to the trip generation, distribution and assignment, each of the routes to be used for hauling routes, worker routes, or both, for Alternative 2, implementation of this alternative would result in an impact to traffic with an increase in ADT of approximately 5.13%, or less, on a daily basis during each construction year. Roads with an increase of 2% or more include:

- East Natoma Street in 2009, 2010, and 2011.
- Scott Road, south of White Rock Road in 2009.

LOS F V/C Increase >0.05
There are no instances of this occurring under Alternative 2.

Mitigation Measures T-1 through T-3 would address the potential traffic impacts presented above.

Other traffic related impacts under Alternative 2 would be similar to Alternative 1. Based on the above, implementation of this alternative poses the potential to result in significant traffic impacts. Mitigation Measures T-1 through T-3 would address those significant impacts and are intended to reduce them to a less than significant level; however, the specific design, application, and degree of effectiveness of those measures requires certain detailed project information that is not yet available. In particular, more detailed information regarding the construction approach, phasing, timeframe, and other such considerations is required to confirm the exact nature and extent of impacts on the individual roads and intersections described above, which, in turn, provides the basis for identifying the specific traffic improvement measures tailored to the impacts measures. Such additional project details and traffic mitigation design would occur in conjunction with the further engineering and design that would occur for the selected alternative. Until that more detailed evaluation and traffic mitigation design is completed, and its effectiveness can be more fully assessed, the traffic impacts associated with this alternative are considered, for now, to remain potentially significant.

Environmental Consequence/Environmental Impacts of Alternative 3
Alternative 3 would result in traffic impacts.

According to the trip generation, distribution and assignment, each of the routes to be used for hauling routes, worker routes, or both, for Alternative 3, implementation of this alternative would result in significant impacts to traffic in the study area, as described below.

LOS Deterioration
No LOS deteriorations would occur in 2007, 2008, 2010, 2011, or 2013. In 2009, East Natoma Street from Folsom Dam Road to Green Valley Road is expected to degrade LOS from E to F under Alternative 3 in 2009. In 2012, traffic on East Natoma Street would decrease from a LOS C to LOS D and LOS D to LOS F.

ADT Increase > 2%
According to the trip generation, distribution and assignment, each of the routes to be used for hauling routes, worker routes, or both for Alternatives 3, implementation of this alternative would result in an impact to traffic with an increase in ADT of 6.73% or less on a daily basis during each construction year. Roads with an increase of 2% or more include:

- East Natoma Street in 2009, 2010, and 2011. Alternative 3 would not affect the road segment from Folsom Dam Road to Green Valley Road in 2010 or 2011.
- Scott Road, south of White Rock Road in 2009.

LOS F V/C Increase >0.05
There are no instances of this occurring under Alternative 3.

Mitigation Measures T-1 through T-3 would address the potential traffic impacts presented above.

Other traffic related impacts under Alternative 3 would be similar to Alternative 1. Based on the above, implementation of this alternative poses the potential to result in significant traffic impacts. Mitigation Measures T-1 through T-3 would address those significant impacts and are intended to reduce them to a less than significant level; however, the specific design, application, and degree of effectiveness of those measures requires certain detailed project information that is not yet available. In particular, more detailed information regarding the construction approach, phasing, timeframe, and other such considerations is required to confirm the exact nature and extent of impacts on the individual roads and intersections described above, which, in turn, provides the basis for identifying the specific traffic improvement measures tailored to the impacts measures. Such additional project details and traffic mitigation design would occur in conjunction with the further engineering and design that would occur for the selected alternative. Until more detailed evaluation and traffic mitigation design is completed, and its effectiveness can be more fully assessed, the traffic impacts associated with this alternative are considered, for now, to remain potentially significant.

Environmental Consequences/Environmental Impacts of Alternative 4
Project alternative would result in traffic impacts.

According to the trip generation, distribution and assignment, each of the routes to be used for hauling routes, worker routes, or both for Alternative 4, implementation of this alternative would result in significant impacts to traffic in the study area, as described below.

LOS Deterioration
No LOS deteriorations would occur in 2007, 2008, 2010, 2011, or 2013. In 2009, East Natoma Street from Folsom Dam Road to Green Valley Road is expected to degrade LOS from E to F under Alternative 4 in 2009. In 2012, traffic on East Natoma Street would decrease from a LOS C to LOS D and LOS D to LOS F.

ADT Increase > 2%
According to the trip generation, distribution and assignment, each of the routes to be used for hauling routes, worker routes, or both for Alternatives 4, implementation of this alternative would result in an impact to traffic with an increase in ADT of 4.68% or less on a daily basis during each construction year. Roads with an increase of 2% or more include:

- East Natoma Street in 2009, 2010, and 2011. Alternative 4 would not affect the road segment from Folsom Dam Road to Green Valley Road in 2011.
- Scott Road, south of White Rock Road in 2008 and 2009.

LOS F V/C Increase >0.05
There are no instances of this occurring under Alternative 4.

Mitigation Measures T-1 through T-3 would address the potential traffic impacts presented above.

Other traffic related impacts under Alternative 4 would be similar to Alternative 1. Based on the above, implementation of this alternative poses the potential to result in significant traffic impacts. Mitigation Measures T-1 through T-3 would address those significant impacts and are intended to reduce them to a less than significant level; however, the specific design, application, and degree of effectiveness of those measures requires certain detailed project information that is not yet available. In particular, more detailed information regarding the construction approach, phasing, timeframe, and other such considerations is required to confirm the exact nature and extent of impacts on the individual roads and intersections described above, which, in turn, provides the basis for identifying the specific traffic improvement measures tailored to the impacts measures. Such additional project details and traffic mitigation design would occur in conjunction with the further engineering and design that would occur for the selected alternative. Until more detailed evaluation and traffic mitigation design is completed, and its effectiveness can be more fully assessed, the traffic impacts associated with this alternative are considered, for now, to remain potentially significant.

Environmental Consequences/Environmental Impacts of Alternative 5
Project alternative would result in traffic impacts.

According to the trip generation, distribution and assignment, each of the routes to be used for hauling routes, worker routes or both for Alternative 5, would result in significant impacts to traffic in the study area, as described below.

LOS Deterioration
No LOS deteriorations would occur in 2007, 2008, 2011, or 2013. In 2009, East Natoma Street from Folsom Dam Road to Green Valley Road is expected to degrade LOS from E to F under Alternative 2 in 2009. In 2010, Folsom Boulevard from Liedesdorff Street to Greenback Lane would decrease from LOS D to LOS E. In 2012, traffic on East Natoma Street would decrease from a LOS C to LOS D and LOS D to LOS F.

ADT Increase > 2%
According to the trip generation, distribution and assignment, each of the routes to be used for hauling routes, worker routes or both for Alternatives 5.Implementation of this alternative would result in an impact to traffic with an increase in ADT of 3.93% or less on a daily basis during each construction year. Roads with an increase of 2% or more include:

- East Natoma Street in 2011, 2012, and 2013
- Scott Road, south of White Rock Road in 2008 and 2009

LOS F V/C Increase >0.05

There are no instances of this occurring under Alternative 5.

Mitigation Measures T-1 through T-3 would address the potential traffic impacts presented above.

Other traffic related impacts under Alternative 5 would be similar to Alternative 1. Based on the above, implementation of this alternative poses the potential to result in significant traffic impacts. Mitigation Measures T-1 through T-3 would address those significant impacts and are intended to reduce them to a less than significant level; however, the specific design, application, and degree of effectiveness of those measures requires certain detailed project information that is not yet available. In particular, more detailed information regarding the construction approach, phasing, timeframe, and other such considerations is required to confirm the exact nature and extent of impacts on the individual roads and intersections described above, which, in turn, provides the basis for identifying the specific traffic improvement measures tailored to the impacts measures. Such additional project details and traffic mitigation design would occur in conjunction with the further engineering and design that would occur for the selected alternative. Until more detailed evaluation and traffic mitigation design is completed, and its effectiveness can be more fully assessed, the traffic impacts associated with this alternative are considered, for now, to remain potentially significant.

3.9.3 Comparative Analysis of Alternatives

Under all alternatives, Scott Road would be expected to experience the highest increase in traffic volumes, thereby establishing the upper limit of percentage increase impacts as illustrated above. However, Scott Road currently carries a minimal amount of traffic on a daily basis, and the percentage increase is somewhat skewed as compared with the remainder of the roadways analyzed.

During construction years 2007 and 2008, no roadways with the exception of Scott Road would be expected to experience a change in LOS, change in V/C if operating at LOS F, nor an increase in daily traffic volumes of 2% or more under all alternatives.

During 2009, Alternatives 1, 2, 3, and 4 would be expected to result in an increase of 3.02% or less along East Natoma Street. Also during 2009, all alternatives would result in East Natoma Street degrading from LOS E to LOS F.

During 2010 Alternatives 1, 2, 3, and 4 would be expected to result in an increase of 2.27% or less along East Natoma Street. During 2010 Folsom Boulevard between Leidesdorff Street and Greenback Lane would be expected to degrade from LOS D to E under Alternative 5 only.

During 2011, Alternatives 2, 3, 4, and 5 East Natoma Street would be expected to experience an increase in daily traffic of 3.32% or less, yet no change in LOS nor change in V/C if operating at LOS F.

During 2012, only Alternative 5 would be expected to increase traffic by more than 2% on all study roadways, with East Natoma Street experiencing an increase of 3.27%.

During 2013, only Alternative 5 would be expected to increase traffic by more than 2% on all study roadways, with East Natoma Street experiencing an increase of 2.37% or less.

During 2014, all Alternatives would result in less than a 2% increase in daily traffic, no change to LOS, nor a change to V/C if operating at LOS F.

Alternative 1 during construction year 2009 would result in the greatest total increase in use (8.44% increase) of the routes by trucks hauling daily material and equipment, and employees due to the Folsom DS/FDR. However, discounting Scott Road, during 2009, Alternatives 1, 3, and 4 would experience a similar increase of 3.02% in traffic along East Natoma Street between Cimmaron Circle and Folsom Dam Road. Alternative 2 and Alternative 5 experience almost one full percentage point less increase in traffic along East Natoma Street between Cimmaron Circle and Folsom Dam Road as compared with Alternatives 1, 3, and 4.

East Natoma Street between Folsom Dam Road and Green Valley Road during 2009 under Alternative 2 would be expected to experience an increase in daily traffic of 2.85%. Alternatives 1, 3, and 4 would be within one third percentage of Alternative 2 along East Natoma between Folsom Dam Road and Green Valley Road and Alternative 5 would be more than one and one half percentage point less in terms of increase in ADT at 1.07%.

Mitigation for each of the alternatives would the same and will be further refined during the next phase of engineering. Mitigation Measures T-1 through T-3 would reduce impacts to a less than significant level.

3.9.4 Mitigation Measures

Mitigation measures will be required of the Folsom DS/FDR whenever the impacts of the Folsom DS/FDR exceed the thresholds identified in Section 3.9.3.2.

The following mitigation measures will be implemented:

T-1: In conjunction with the development and review of more detailed project design and construction specifications, a peak hour capacity analysis will be performed on specific intersections to evaluate the need for changes to traffic signal timing, phasing modification, provision of additional turn lanes through restriping or physical improvements, as necessary and appropriate to reduce project-related impacts to an acceptable level. In conjunction with that assessment, the potential need for roadway improvements or operation modifications (i.e., temporary restrictions on turning movements, on-street parking, etc.) to enhance roadway capacity in light of additional traffic from the project will be evaluated. The completion of these evaluations and the identification of specific traffic improvement measures, as deemed necessary and appropriate in light of the temporary nature of impacts, will be coordinated with the transportation departments of the affected jurisdictions.

T-2: Construction contractor will prepare a transportation management plan, outlining proposed routes to be approved by the appropriate local entity, and implement it. High collision intersections will be identified and avoided if possible. Drivers will be informed and trained on the various types of haul routes, and areas that are more sensitive (e.g., high level of residential or education centers, or narrow roadways).

T-3: Construction contractor will develop and utilize appropriate signage to inform the general public of the haul routes and route changes, if applicable.

3.9.5 Cumulative Effects

Table 5-1 lists projects considered in the cumulative analysis. Most of the projects include construction within the study region that will require transport of materials to and from the site. In addition, population is increasing in the region, which will further increase traffic congestion in the study area. Under the cumulative condition, all Folsom Facility construction projects will have the potential for significant transportation and circulation effects should construction activities occur concurrently. Cumulative effects of traffic near the Main Concrete Dam will be limited by restricted access, staging, and closed construction areas. Also, cumulative effects of construction projects could be controlled through the scheduling and sequencing of haul truck traffic. Once completed, the new Folsom Bridge will greatly alleviate traffic congestion within the vicinity of the Folsom construction areas.

Alternatives of the Folsom DS/FDR would have significant impacts to transportation and circulation at select roads, including East Natoma Street and Scott Road, from increased trip generation. The Folsom DS/FDR would further increase traffic in a highly congested area along East Natoma Street.

This would be considered a cumulative considerable effect.

3.10 Noise

This section addresses potential noise impacts associated with construction of the Folsom DS/FDR features proposed under each of the six alternatives, including the No Action/No Project Alternative and Alternatives 1 through 5. The discussion herein includes an explanation of noise descriptors, to provide the reader with an understanding of the basic noise concepts and terminology reflected in the analysis, a delineation of the geographic analysis area, and a description the affected environment and existing conditions within the Folsom DS/FDR construction area and along the potential truck hauling routes. This discussion is followed by the noise impacts discussion, which includes the delineation of criteria used to define and determine significant noise impacts, an explanation of the assessment methodology, a discussion of the noise impacts associated with each alternative and comparison of alternatives, recommendations for noise mitigation measures, and an analysis of cumulative effects. The focus of the analysis is on potential noise impacts to local noise receptors resulting from construction activities. Whereas noise analyses for development projects also typically include an evaluation of the potential for noise impacts to the project, such as if a new residential development is proposed adjacent to a freeway, such analysis is not warranted for the Folsom DS/FDR, because the Folsom DS/FDR is not a noise-sensitive use and the focus of this EIS/EIR analysis is on the construction activities associated with the Folsom DS/FDR.

3.10.1 Affected Environment/Existing Conditions

3.10.1.1 Noise Descriptors

Noise is measured in decibels (dB) and is a measurement of sound pressure level. The human ear perceives sound, which is mechanical energy, as pressure on the ear. The sound pressure level is the logarithmic ratio of that sound pressure to a reference pressure, and is expressed in decibels. Environmental sounds are measured with the A-weighted scale of the sound level meter. The A scale simulates the frequency response of the human ear, by giving more weight to the middle frequency sounds, and less to the low and high frequency sounds. A-weighted sound levels are designated as dBA. Figure 3.10-1 shows the range of sound levels for common indoor and outdoor activities, in dBA.

COMMON OUTDOOR NOISES	Sound Pressure (uPa)	Sound Pressure (dB)	COMMON INDOOR NOISES
Jet Fly Over at 300 feet	6,324,555	110	Rock Band at 15 feet
Gas Lawn Mower at 3 feet	2,000,000	100	Inside Subway Train (New York)
Diesel Truck at 50 m	632,456	90	Food Blender at 3 feet
Noisy Urban Daytime	200,000	80	Garbage Disposal at 3 feet Shouting at 3 feet
Gas Lawn Mower at 100 feet Commercial Area	63,246	70	Vacuum Cleaner at 10 feet Normal Speech at 3 feet
	20,000	60	Large Business Office
Quiet Urban Daytime	6,325	50	Dishwasher Next Room
Quiet Urban Nighttime Quiet Suburban Nighttime	2,000	40	Small Theatre, Large Conference Room Library
Quiet Rural Nighttime	632	30	Bedroom at Night Concert Hall (Background)
	200	20	Broadcast and Recording Studio
	63	10	Threshold of Hearing
	20	0	

Source: FHWA, Noise Fundamentals Training Document, "Highway Noise Fundamentals," September 1980.

Figure 3.10-1
Common Indoor and Outdoor Noises

Because sounds in the environment usually vary with time they cannot simply be described with a single number. Two methods are used to describe variable sounds. These are exceedance levels and equivalent levels, both of which are derived from a large number of moment-to-moment A-weighted noise level measurements. Exceedance levels are values from the cumulative amplitude distribution of all the noise levels observed during a measurement period. Exceedance levels are designated L_n, where n represents a value from 0 to 100 percent. For example, L_{50} is the median noise level, or the noise level in dBA exceeded 50 percent of the time during the measurement period. Sacramento, El Dorado, and Placer Counties have established L_{50} noise limits for non-transportation noise sources in residential areas.

The equivalent noise level (L_{eq}) is the constant sound level that in a given period has the same sound energy level as the actual time-varying sound pressure level. L_{eq} provides a methodology for combining noise from individual events and steady state sources into a measure of cumulative noise exposure. It is used by local jurisdictions and the Federal Highway Administration (FHWA) to evaluate noise impacts.

The day-night noise level (L_{dn}) is the energy average sound level for a 24-hour day determined after the addition of a 10-dBA penalty to all noise events occurring at night between 10:00 p.m. and 7:00 a.m. The L_{dn} is a useful metric of community noise impact because people in their homes are much more sensitive to noise at night, when they are relaxing or sleeping, than they are to noise in the daytime. The L_{dn} is used by local jurisdictions to rate community noise impacts from transportation noise sources.

In the State of California, the community noise equivalent level (CNEL) is widely used. It is similar to the L_{dn} noise level, except it weights events occurring between the evening hours of 7:00 p.m. and 10:00 p.m. by increasing noise levels by 5 dBA.

In addition to evaluating noise impacts based on complying with noise standards, project noise impacts can also be assessed by annoyance criteria, or the incremental increases in existing noise levels. The impact of increasing or decreasing noise levels is presented in Table 3.10-1. For example, it shows that a change of 3 dBA is barely perceptible and that a 10-dBA increase or decrease would be perceived by someone to be a doubling or halving of the noise level (loudness).

Table 3.10-1 Decibel Changes, Loudness, and Energy Loss		
Sound Level Change (dBA)	***Relative Loudness***	***Acoustical Energy Loss (%)***
0	Reference	0
-3	Barely Perceptible Change	50
-5	Readily Perceptible Change	67
-10	Half as Loud	90
-20	1/4 as Loud	99
-30	1/8 as Loud	99.9

Source: FHWA, *Highway Traffic Noise Analysis and Abatement Policy and Guidance*, June 1995.

3.10.1.2 Area of Analysis

Potential sources of noise impacts from the Folsom DS/FDR actions include both construction- and transportation-related noise sources. The construction noise impact analysis focuses on the areas adjacent to construction sites and rock crushing areas adjacent to Folsom Reservoir. Proposed rock crushing and screening activities would occur at up to eight locations along the western and southern areas of Folsom Reservoir. In addition, concrete batch plant operations would occur near Beal's Point, Folsom Dam, and Mormon Island Auxiliary Dam (MIAD).

The transportation noise impacts associated with trucks hauling construction materials focuses on sensitive land uses along both local and regional roadways. Regional haul routes refer to potential routes for trucking earthen and construction materials into the Folsom DS/FDR site. From the north, these routes include State Routes 70 and 65 from Marysville to Folsom, using either Sierra College Boulevard or Douglas Boulevard to reach the site. From the south, US Highway 50 may also provide access to the local area for trucks hauling earthen and construction materials (i.e., concrete and steel).

Local haul routes refer to roadways in the vicinity of Folsom Dam that may be used for trucks hauling materials to and from borrow sites, as well as to the various dams and dikes from regional routes. Potential local haul routes include Folsom-Auburn Road, Folsom Boulevard, Douglas Boulevard, Sierra College Boulevard, East Natoma Road, Green Valley Road, Oak Avenue Parkway, Blue Ravine Road, East Bidwell Street and Eureka Road. Section 3.9, Transportation and Circulation, provides a detailed description of the regional and local access routes assumed for construction activities.

3.10.1.3 Regulatory Setting

The area of analysis includes noise-sensitive land uses in the following jurisdictions:

- Counties: Yuba, Sacramento, Placer, and El Dorado.
- Communities: Cities of Folsom, Roseville, Lincoln, Rocklin and Marysville and Communities of Wheatland and Granite Bay.

Most jurisdictions have adopted noise standards for both transportation and non-transportation noise sources in their Noise Element of their General Plan. In addition to the local Noise Elements, because this is a NEPA/CEQA action, it is also appropriate to apply federal and state traffic noise impact assessment criteria to evaluate haul truck noise impacts.

Presented below is a summary of the applicable noise standards for actions under the Folsom DS/FDR.

Local Jurisdictions

A project would have a potentially significant effect on the environment if it conflicts with the adopted noise standards, substantially increases the ambient noise levels for adjacent areas, or causes severe noise impacts for exposed people. All jurisdictions where construction or truck hauling would occur have adopted local ordinances regulating noise levels in order to minimize impacts on sensitive land uses. These local standards have been established for both non-transportation and transportation noise sources. Table 3.10-2 lists the non-transportation noise standards in the relevant jurisdictions, and Table 3.10-3 lists the transportation noise standards in those jurisdictions where actions may involve trucks hauling materials.

Construction noise may potentially impact five jurisdictions (City of Folsom, Granite Bay, and unincorporated areas of Sacramento, El Dorado, and Placer Counties). These jurisdictions either have non-transportation noise standards based on time of day and land use sensitivity or provide exemptions for construction as long as those activities occur during the daytime. Residential areas are considered the most noise-sensitive land use and have the strictest noise standards. However, El Dorado and Placer Counties have also adopted noise standards for other sensitive land uses such as commercial areas and open space. All of the jurisdictions, except for Placer County, have established maximum allowable exterior one-hour noise limits for both daytime and nighttime hours. Placer County is the only jurisdiction that has adopted noise standards specific to non-transportation construction activities. These noise standards are based on maximum allowable L_{dn} noise levels. Furthermore, it is the only jurisdiction with a blasting noise standard, which states that blasting shall not exceed a peak linear overpressure of 122 dB, or a C-weighted Sound Exposure Level (SEL) of 98 dBC. The City of Folsom Noise Element exempts construction activities provided that construction does not take place before 7 a.m. or after 6 p.m. during weekdays and before 8 a.m. or after 5 p.m. on weekends.

Table 3.10-2 *Local Government Non-Transportation Noise Standards (dBA)*						
Noise Element Jurisdiction/Land Use Category	**Maximum Allowable Exterior Noise Levels**					
	Daytime 7a.m. - 7p.m.		**Evening 7 p.m. - 10 p.m.**		**Nighttime 10p.m. - 7 a.m.**	
	Hourly		**Hourly**		**Hourly**	
Sacramento County	L_{50}	L_{max}	L_{50}	L_{max}	L_{50}	L_{max}
Residential Areas	50	70	50	70	45	65
City of Folsom[3,4]	**Hourly** L_{eq}				**Hourly** L_{eq}	
	50				45	
	Hourly		**Hourly**		**Hourly**	
El Dorado County [1]	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
Residential areas (Community Areas)	55	75	50	65	45	60
Residential Areas (Rural Regions)	50	60	45	55	40	50
Commercial areas (Community Areas)	70	90	65	75	65	75
Commercial areas (Rural Regions)	65	75	60	70	60	70
Open Space, Natural Resource (Rural Regions)	65	75	60	70	60	70
Placer County[2] **including Granite Bay Community**			L_{dn}			
Residential			50			
Residential Areas Adjacent to Industrial			60			
General Commerical			70			
Heavy Commercial/Industrial Park			75			
Recreation & Forestry			70			
All land uses interior allowable noise level			45			

Notes:
[1] Non-transportation construction noise standards.
[2] Single event impulsive noise levels produced by blasting shall not exeed a peak linear overpressure of 122 dB, or a C-weighted Sound Exposure Level (SEL) of 98 dBC. The cumulative noise level from blasting shall not exceed 60 dB LC_{dn} or CNELC on any given day.
[3]Construction noise is exempt from the City of Folsom Noise Element provided that construction does not take place before 7 a.m. or after 6 p.m. during weekdays and before 8 a.m. or after 5 p.m on weekends.
[4]Based on cumulative 30 minutes in any one-hour time period.

Sources:
County of Sacramento General Plan Noise Element (December 1993, amended 1998)
City of Folsom Municipal Code, Chapter 8.42 Noise Control
El Dorado County General Plan, Public Health, Safety and Noise Element (July 2004)
Placer County General Plan Update, Section 9 Noise (August 1994)
Granite Bay Community Plan Noise Element (Amended 1996)

Table 3.10-3
Local Government Transportation Noise Standards (dBA)

Noise Element Jurisdiction/Land Use Category	Maximum Allowable Noise Levels Exterior L_{dn}/CNEL[1]	Interior L_{dn}/CNEL
Sacramento County		
Residential areas	60	45
City of Folsom		
Residential areas including single- or multiple-family residence,school, church, hospital or public library)	60	45
El Dorado County, Placer County and Granite Bay Community[5]		
Residential areas	60	45
Commercial areas	--	
Other sensitive areas - Parks	70	
Other sensitive areas: hospitals, nursing homes, churches, transient lodging	60	45
City of Roseville[5]		
Residential areas	60	45
Commercial areas - office buildings	65	--
Other sensitive areas - parks	70	--
Other sensitive areas: hospitals, nursing homes, churches, transient lodging	60	45
City of Rocklin[5]		
Residential areas	60	45
Commercial areas - office buildings	--	--
Other sensitive areas - playground and parks	70	--
Hospitals and nursing homes	60	45
Non-commercial places of public assembly	60	
Yuba County	[2]	
City of Marysville	[3]	
City of Wheatland[5]		
Residential areas	60	45
Commercial areas - office buildings	--	--
Other sensitive areas - playground and parks	70	--
Other sensitive areas: hospitals, nursing homes, churches, transient lodging	60	45
City of Lincoln	[4]	

Notes:

[1] The jurisdictions along the haul routes with standards for transportation noise impacts have adopted a maximum L_{dn}/CNEL noise limit of 60 dBA for residential land uses, with a potential allowable L_{dn}/CNEL exceedance level 65 dBA, if 60 dBA is not practicable in a situation given the application of the best-available noise reduction measures.

[2] Yuba County General Plan Noise Element 1976, and County Ordinance on Noise Chapter 8.20. Maximum daytime ambient noise levels will be used as a guideline for transportation related noise impacts in the absence of transportation-specific guideline. There is no numeric noise standard.

[3] From General Plan 1985 Noise Goals and Policies: "To examine any new source of noise projected at or above 70 dB at 50 feet for compatibility with existing or projected planned neighboring land uses prior to the granting of a rezoning or building permit.

[4] There is no numermic noise standard.

[5] Interior spaces worst-case one hour L_{eq} noise standards of 35-45 dBA have been adopted for theaters, auditoriums, music halls, churches, meeting halls, office buildings, schools, libraries and museums.

Sources:

County of Sacramento General Plan Noise Element (December 1993, amended 1998)
City of Folsom Municipal Code, Chapter 8.42 Noise Control
El Dorado County General Plan, Public Health, Safety and Noise Element (July 2004)
Placer County General Plan Update, Section 9 Noise (August 1994)
Granite Bay Community Plan Noise Element (Amended 1996)
City of Roseville General Plan (1992, updated 2003)
City of Rocklin Draft General Plan, Noise Element (March 2005)
Yuba County General Plan, Noise Element (1976)
Yuba County Ordinance, 8.20 Noise Regulations
Marysville General Plan (August 1985)
City of Wheatland General Plan Update, Chapter 4.11 Noise (December 2005)
City of Lincoln General Plan, Noise Element (1988)

Noise generated by transportation sources is also regulated according to land use. All of the jurisdictions along the haul routes with standards for transportation noise impacts have adopted a maximum L_{dn}/CNEL noise limit of 60 dBA for residential land uses, with a potential allowable L_{dn}/CNEL exceedance level of 65 dBA, if 60 dBA is not practicable in a situation given the application of the best-available noise reduction measures. Many of the jurisdictions have adopted a maximum L_{dn}/CNEL noise limit of 70 dBA for playgrounds and parks.

FHWA and Caltrans Noise Impact Criteria

In addition to local noise standards, there are federal regulations that apply to the Folsom DS/FDR. These include the applicable FHWA noise abatement criteria (NAC) (23 CFR Part 772), which have been interpreted and implemented for projects in California by California Department of Transportation (Caltrans). These criteria are included in the *Caltrans Traffic Noise Analysis Protocol, October 1998* (herein referred to as the Protocol).

The FHWA noise abatement criteria (NAC), presented in Table 3.10-4, are based on specific land use categories. These NAC are based on one-hour average L_{eq} noise levels (FHWA, *Federal-Aid Highway Program Manual*, *Volume 7, Chapter 7, Section 3, August 9, 1980*).

Table 3.10-4
FHWA Noise Abatement Criteria (NAC)

Activity Category	***L_{eq}(1hr) [1] (dBA)***	***Description of Activity Category***
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 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.

(1) No single hourly average L_{eq} in a 24-hour day can exceed this value.

Source: *23 CFR Part 772.*

Land uses along the local and regional haul routes are predominantly Activity Categories B and C, and, to a lesser degree, Activity Category E (i.e., residential). The FHWA noise standards indicate that noise mitigation must be considered when the Horizon Year project levels approach or exceed the stated NAC. In addition, the FHWA noise standards also indicate that noise mitigation must be considered when the Future-Year or Horizon-Year project levels “substantially” exceed existing noise levels. The Protocol defines “approach the noise abatement criteria” (23 CFR

772.5(g)) as 1 dBA below the NAC and defines "substantially" as a predicted incremental impact equal to or greater than 12 dBA over existing noise levels.

3.10.1.4 Existing Conditions

The Folsom DS/FDR study area is a very unique land use and noise setting. The southern portion of the site is more of an urban locale with constant noise generated from the Folsom Prison shooting range and traffic along busy arterial roadways. The area of analysis transitions to a more rural character heading to the north and east of the site where there is less human activity. Therefore, background noise levels are higher at the southern portion of Folsom Reservoir and trend lower as one heads north and east. In addition, there are seasonal variations with the reservoir being an active site for recreational boating and jet and water skis activities during the summer, which tends to increase background noise levels. During the winter months, human and recreational activity is less; therefore, background noise levels tend to be lower.

Noise data for the Folsom DS/FDR area available from recent noise studies in the Folsom Reservoir area were used to help define the existing noise conditions in the Folsom DS/FDR area and along proposed truck hauling routes. These recent noise studies include:

- Reclamation, *Folsom Dam Road Access Restriction, Final Environmental Impact Statement: Section 3.3* (April 2005);
- Wallace, Roberts, and Todd et al., *Folsom Lake State Recreation Area, Draft Resource Inventory, Environmental Conditions: Noise* (April 2003); and
- USACE, *Folsom Dam Bridge SEIR/SEIS* (Draft 2006).

These studies, along with United States Environmental Protection Agency (USEPA) documentation and the results of the roadway existing noise modeling analysis were used to describe ambient noise conditions.

Noise monitoring data presented in the *Draft Resources Inventory Folsom Lake State Recreational Area* (April 2003) were used to provide guidance for defining existing ambient noise conditions in the Folsom DS/FDR area. Noise monitoring data was collected at 10 locations around Folsom Reservoir. The closest locations to the proposed site included four locations on the southern, eastern, and western sides of the reservoir. Ambient noise monitoring conducted between 9:00 a.m. and 6:00 p.m. documented that daytime L_{eq} noise levels in the Folsom DS/FDR area ranged from 37.2 dBA at Granite Beach in Granite Bay to 65.3 dBA in near Lake Hills Drive in El Dorado. The monitoring locations with the highest noise levels were influenced by constant noise sources, such as traffic along local roads or by a single noisy activity, such as lawn mowing, construction activity or cement truck turning around near a monitoring location. At the monitoring locations with the lowest noise levels there was minimal human activity influencing ambient noise conditions. Since these noise level measurements only represented a 20-minute daytime sample at each location, and given the seasonal variability of noise conditions around Folsom Reservoir, background noise levels for this noise analysis were based on USEPA noise descriptors for various land uses.

Data provided in the USEPA Levels Document[1] was used to define average ambient daytime and nighttime L_{eq} and L_{dn} noise conditions around the Folsom Dam site. The L_{dn} noise levels are based on the various land use descriptors. The daytime and nighttime L_{eq} noise levels were estimated based on the L_{dn} noise levels. According to this USEPA document, typically, there is a 10-dBA change in noise levels between the daytime and nighttime. Table 3.10-5 presents summary of the ambient noise levels for various land uses.

Table 3.10-5
Average Ambient Noise Levels for Various Land Uses

Land Use Description	***Average L_{dn}[1] (dBA)***	***Daytime L_{eq} (dBA)***	***Nighttime L_{eq} (dBA)***
Wilderness	35	35	25
Rural Residential	40	40	30
Quiet Suburban Residential	50	50	40
Normal Suburban Residential	55	55	45
Urban Residential	60	60	50
Noisy Urban Residential	65	65	55
Very Noisy Urban Residential	70	70	60

Source: [1]U.S. EPA, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, March 1974.

A review of existing topographic and aerial photographs was used to select six noise-sensitive receptor locations that represent residential areas closest to the proposed construction sites. Furthermore, each noise-sensitive receptor represents the closest point to the proposed construction activities. Figure 3.10-2 shows the six noise-sensitive receptors that could be impacted by construction activities. The most appropriate land use descriptors and noise levels to describe the Folsom Dam area range from "rural residential/quiet suburban residential" to "urban residential." Table 3.10-6 presents the ambient noise levels representative of the Folsom DS/FDR site at each noise-sensitive receptors.

[1] U.S. EPA, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*, March 1974.

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Figure 3.10-2
Construction Noise-Sensitive Receptors

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Table 3.10-6 **Folsom DS/FDR Site** **Estimated Average Ambient Noise Conditions**				
Noise- Sensitive Receptors		***Daytime***	***Nighttime***	
Receptor Id. (See Figure 3.10-2)	***Description***	***L_{eq} (dBA)***	***L_{eq} (dBA)***	***L_{dn} (dBA)***
1	East Natoma St. Residential Area, Folsom	60	50	60
2	Haley Drive Near Granite Beach, Granite Bay	45	35	45
3	Vista Mar Drive, El Dorado Hills	50	40	50
4	400 Lake Ridge Court, El Dorado Hills	50	40	50
5	Oak Leaf and Auburn-Folsom Road	60	50	60
6	Lake Shore Drive, Granite Bay	45	35	45

Noise monitoring and traffic data presented in Reclamation's *Folsom Dam Road Access Restriction, Final Environmental Impact Statement* (April 2005) were used to provide guidance for defining existing ambient conditions along the proposed local truck hauling routes. A traffic noise modeling analysis, based on 2006 traffic data, was conducted to estimate existing peak hour and 24-hour noise levels at nine noise-sensitive receptors adjacent to the proposed local truck hauling routes. These nine locations represent residential areas adjacent to the proposed local truck hauling routes. Figures 3.10-3 and 3.10-4 show the roadway noise-sensitive receptor locations. The noise monitoring and traffic data, provided in the Reclamation document, were used to calibrate the traffic noise model. Section 3.10.2.2 presents the methodologies and assumptions used to estimate existing traffic noise levels. Existing peak hour daytime and nighttime L_{eq} and L_{dn} noise levels were estimated at each noise sensitive receptor. Daytime L_{eq} noise levels ranged from 66.9 to 72.5 dBA and nighttime L_{eq} noise levels ranged from 60.2 to 66.0 dBA. The L_{dn} noise levels ranged from 68.4 to74.2 dBA. The lowest noise levels were estimated along East Natoma Street and the highest noise levels were estimated for Folsom-Auburn Road and East Bidwell Street. These noise levels are typical for noise-sensitive receptors located near busy secondary and arterial roadways. Table 3.10-7 presents a summary of the existing ambient noise levels.

CDM

Source: Google Earth.com, 2006.

Figure 3.10-3
Roadway Noise-Sensitive Receptors in Sacramento and El Dorado Counties

CDM

Source: Google Earth.com, 2006.

Figure 3.10-4
Roadway Noise-Sensitive Receptors in Placer County

Table 3.10-7
Potential Local Hauling Routes
Existing Ambient Noise Conditions

Receptor Id.	***Local Roadway***	***Description***	***Daytime Peak Hour L_{eq} (dBA)***	***Nighttime Peak Hour L_{eq} (dBA)***	***L_{dn} (dBA)***
1 (Figure 3.10-3)	East Bidwell Street	Along Albright Road, adjacent to southbound lanes in Folsom, Sacramento County	72.5	66.0	74.2
2 (Figure 3.10-3)	Oak Avenue Parkway	Along Thorndike Way, residential area adjacent to northbound lanes in Folsom, Sacramento County	68.9	62.4	70.6
3 (Figure 3.10-3)	Green Valley Road	Residential area along Kipps Lane, north of Green Valley Road in El Dorado Hills, El Dorado County	71.6	65.0	73.2
4 (Figure 3.10-3)	East Natoma Street	End of Sanborn Court, residential area along eastbound lanes in Folsom, Sacramento County	66.9	60.2	68.4
5 (Figure 3.10-3)	Folsom-Auburn Road	7013 Folsom-Auburn Road in a residential area along southbound lanes in Folsom, Sacramento County	72.5	66.0	74.2
6 (Figure 3.10-3)	Blue Ravine Road	End of Cobblefields Court, residential area along the southbound lanes in Folsom, Sacramento County	69.3	62.7	70.9
7 (Figure 3.10-4)	Sierra College Boulevard	Tenbury Lane in a residential area adjacent to northbound lanes in Rocklin, Placer County	70.6	64.0	72.2
8 (Figure 3.10-4)	Douglas Boulevard	4600-4699 Rolling Oaks Drive, residential area adjacent to westbound lanes in Granite Bay, Placer County	72.5	65.9	74.1
9 (Figure 3.10-4)	Eureka Road	1445 Eureka Road, multi-family residential development (225 units) adjacent to northbound lanes in Roseville, Placer County	72.4	65.8	74.0

3.10.2 Environmental Consequences/Environmental Impacts

This section describes the methods, significance criteria, and analysis results of the potential noise impacts from construction and transportation activities. The construction noise analysis is presented first, followed by the transportation noise analysis.

3.10.2.1 Construction Noise Analysis

Assessment Methods

Construction activities are expected to begin in 2007 and last approximately eight years. The construction schedule includes 17 construction activities, which would be staggered in the construction timeline. Not all action alternatives would involve all the construction activities. For example, Alternative 1 would not include a raise to the Main Concrete Dam, Granite Bay or Browns Ravine borrow developments, or construction of Dikes 1, 2, and 3. It is anticipated that potential construction noise impacts would be of a longer duration along the southern portion of Folsom Reservoir compared the northwestern portion of the reservoir. Table 3.10-8 presents the proposed construction activities and schedule for the main features of the Folsom DS/FDR action. Each of these construction activities were analyzed for their potential noise impacts on six noise-sensitive receptors, which are shown in Figure 3.10-2. The noise impacts associated with each alternative were then identified in terms of the specific features included in each alternative and the associated construction-related noise impacts were characterized accordingly.

Table 3.10-8
Proposed Construction Activities and Schedule

Construction Activity	***Schedule***
Auxiliary Spillway and Borrow Development	2007 – 2009
Auxiliary Spillway Construction	2009 – 2011
Folsom Point Borrow Development	2007 - 2013
Tunnel Construction (optional under Alternative 2)	2009 – 2011
Right Wing Dam Construction*	2009 – 2010/2012
Left Wing Construction	2012 – 2013
Beal's Point Borrow Development*	2007 – 2009/2012
Dike 5 & 6 Construction	2008
MIAD – Stripping, Excavation & Construction*	2008 – 2010/2011
MIAD Jet Grouting	2009-2010
Dike 7 & 8 Construction	2012
Granite Bay Borrow Development*	2013 – 2014
Dike 1, 2, & 3 Construction*	2013 – 2014
Dike 4 Construction	2008
Main Concrete Dam Raise*	2011-2012
Main Concrete Dam Tendons and Shears*	2013 - 2014

Note: * Alternative 5 would require additional years of construction.

The construction operations, such as concrete and rock crushing, screening operations, and blasting activities, and the types of construction equipment that are expected to be used for all of the alternatives are presented in Table 3.10-9. It is also anticipated that the Corps may dredge the Auxiliary Spillway approach 40 feet deeper than planned by Reclamation under Alternative 3. Because the details of the dredging operation are not known at the time of development of this EIS/EIR, noise impacts associated with dredging operation are generally considered at a programmatic level for now, as reasonable and appropriate at this level of planning and environmental review, and may be further evaluated and described in supplemental documentation should that alternative, or variation thereof, be approved and proceed to more detailed engineering and design. Table 3.10-9 was based on information provided the Reclamation and the Corps, *Folsom Dam Raise and Auxiliary Spillway Alternative PASS II Draft Report* (February 2006). It also presents the L_{max} sound level and percent of time the equipment would be operated at full power (usage factor) for each piece of construction equipment used. The L_{max} sound levels represent typical maximum noise that normally occurs during full power operation of the equipment. These levels typically only occur for a short duration, since the equipment is not operated at full power for an entire workday. A detailed discussion of the construction noise modeling methodology is presented in Appendix G.

Table 3.10-9
Construction Operations, Equipment Types and Their Noise Levels

Equipment Types	***Usage Factor***	***Lmax @ 50'***
Scrapers	40%	81
Dozers	40%	82
Vibratory Compactors	20%	83
Haul Trucks	40%	76
Excavator	40%	81
Small Crane	16%	81
Drill Rigs	20%	84
Loaders	40%	79
Blasting	1%	94
Rock/Screening Crushing Operations	80%	94
Concrete Batch Plant	15%	83

Sources:
U.S. Bureau of Reclamation, September 2006.
U.S. Army Corps, Folsom Dam Raise and Auxiliary Spillway Alternative PASSII Draft Report, February 2006a.
U.S. DOT, FHWA, Roadway Construction Noise Model, January 2006.
P. Yastrow, Laku Landing Sound Level Analysis, April 1990.

The methodology used to compare each action alternative's long-term construction noise impacts was based on the projected L_{dn} noise level at each sensitive receptor and the duration of the construction. For major construction phases that would be adjacent to noise-sensitive receptors, the construction duration, in total number of days, and the projected L_{dn} noise level at each noise-sensitive receptor were used to calculate a construction period average L_{dn} noise level for each action alternative.

For the alternatives that involve the raising of Folsom Dam and dike structures which could result in temporary increases of maximum flood flows in the reservoir, a number of auxiliary mini dikes would be required. Because the details on the number and placement of the mini dikes are not known at the time of development of this EIS/EIR, only a qualitative noise evaluation is presented in this section.

Rock Blasting Noise and Vibration Assessment Methods

Construction and rock blasting activities have the potential to produce noise and vibration levels that may be annoying or disturbing to humans and may cause damage to structures. The rock blasting noise impacts were addressed in the construction noise impact analysis. Vibration from construction projects is caused by general equipment operations, and is usually highest during pile driving, soil compacting, jack hammering and construction related demolition and blasting activities. Measurements of vibration are expressed in terms of the peak particle velocity (PPV) in the unit of inches per second (ips). The PPV, a quantity commonly used for vibration measurements, is the maximum velocity experienced by any point in a structure during a vibration event. It is an indication of the magnitude of energy transmitted through vibration. PPV is an indicator often used in determining potential damage to buildings from stress associated with blasting and other construction activities.

Table 3.10-10 summarizes the levels of vibration and the usual effect on people and buildings based on the U.S. Department of Transportation (USDOT) guidelines for vibration levels from construction-related activities. Blasting procedures would be dictated by site-specific conditions as determined by the construction contractor prior to construction, through monitoring during construction. Therefore, a quantitative assessment of potential vibration impacts from blasting is not provided. Rather, the blasting is discussed in the context of protective measures that would be put in place to minimize or avoid adverse vibration effects in the Mitigation Measures section (see Appendix G). Table 3.10-11 presents the vibration levels for typical construction equipment used to assess potential vibration impacts from the Folsom DS/FDR action.

Table 3.10-10
Summary of Vibration Levels and Effects on Humans and Buildings

Peak Particle Velocity (in/sec)	Effects on Humans	Effects on Buildings
<0.005	Imperceptible	No effect on buildings
0.005 to 0.015	Barely perceptible	No effect on buildings
0.02 to 0.05	Level at which continuous vibrations begin to annoy people in buildings	No effect on buildings
0.1 to 0.5	Vibrations considered unacceptable for people exposed to continuous or long-term vibration	Minimal potential for damage to weak or sensitive structures.
0.5 to 1.0	Vibrations considered bothersome by most people, however tolerable if short-term in length	Threshold at which there is a risk of architectural damage to buildings with plastered ceilings and walls. Some risk to ancient monuments and ruins.
1.0 to 2.0	Vibrations considered unpleasant by most people	U.S. Bureau of Mines data indicates that blasting vibration in this range will not harm most buildings. Most construction vibration limits are in this range.
>3.0	Vibration is unpleasant	Potential for architectural damage and possible minor structural damage.

Source: Michael Minor & Associates, Vibration Primer http://www.drnoise.com/ PDF_files/Vibration%20Primer.pdf, downloaded May 2006.

Table 3.10-11
Vibration Levels for Typical Construction Equipment

Equipment		PPV at 25 (in./sec)
Pile Driver (impact)	upper range	1.518
	typical	0.644
Pile Driver (sonic)	upper range	0.734
	typical	0.170
Clam Shovel Drop (slurry wall)		0.202
Hydromill (slurry wall)	in soil	0.008
	in rock	0.017
Large Bulldozer		0.089
Caisson Drilling		0.089
Loaded Trucks		0.076
Jackhammer		0.035
Small Bulldozer		0.003

Source: FTA, Transit Noise and Vibration Impact Assessment, April 1995.

Construction Noise Control Considerations

As part of the construction noise impact analysis, a Best Available Control Technology (BACT) analysis was prepared to evaluate the extent and likelihood that unmitigated noise levels associated with certain types of construction equipment could be feasibly reduced. In particular, noise associated with quasi-stationary and stationary sources, such as drill rigs, blasting, and rock crushing/screening operations was evaluated in terms whether provision of a portable or stationary barrier as part of the operation of such equipment would be necessary and appropriate to reduce construction-related noise at the nearest noise-sensitive receptor to an acceptable level. The application of BACT for the subject types of equipment was directed at those situations where the overall unmitigated increase in ambient noise level, resulting from construction activities, was estimated to exceed 5 dB (i.e., the threshold of significance for construction-related noise - see paragraph below).

Construction Noise Significance Criteria

There are two principal criteria for evaluating noise impacts of a project:
1) evaluating the increase in noise levels above the existing ambient levels as a result of the project, and 2) compliance with relevant standards and regulations. CEQA requires comparing project-related noise impacts with existing noise levels and NEPA requires comparing project-related noise levels with the noise levels of the No Action/No Project Alternative. For the purposes of complying with CEQA and NEPA requirements, it was conservatively assumed that the existing and the future no-action noise levels would be same, not including future background noise increases associated with potential growth in the area of analysis. The applicable CEQA significance criteria for noise include: a substantial increase in ambient noise levels in the project vicinity above existing levels, or a substantial temporary or periodic increase in ambient noise levels in the project vicinity. Because there are no specific construction noise limits defined under CEQA, the following general guidelines were used to assess short-term (hourly and daily) construction noise impacts, as compared to existing ambient levels:

- A less than 3 dBA increase in sound level is considered no impact;
- A 3 to 5 dBA increase in sound level is considered a slight impact;
- A 6 to 10 dBA increase in sound level is considered a moderate impact; and
- A greater than 10 dBA increase in sound level is considered a severe impact.

This analysis assumes that an increase greater than 5 dBA would be potentially significant and would require evaluating construction noise mitigation measures.

Several county and local jurisdictions have established noise standards that are applicable to construction activities related to the Folsom DS/FDR. Projected construction noise levels were compared with exterior noise standards for the City of Folsom, Sacramento County, El Dorado County, Placer County, and the Granite Bay Community to assess potential noise impacts, and to identify and evaluate noise control measures to reduce potential noise impacts.

Construction Noise Environmental Consequences/Environmental Impacts

Environmental Consequences/Environmental Impacts of the No Action/No Project Alternative

The No Action/No Project Alternative would not generate construction activity noise impacts relative to the existing conditions.

Under the No Action/No Project Alternative, the Folsom DS/FDR action would not be constructed. This analysis assumes that construction noise under the No Action/No Project Alternative would be the same as existing conditions. In some instances, noise levels under the existing conditions exceed existing noise standards. This is not attributable to the Folsom DS/FDR. There would be no impact of the No Action/No Project Alternative.

Environmental Consequences/Environmental Impacts of Alternative 1

Construction activities would generate noise impacts under Alternative 1.

The results of the construction noise impact analysis were compared to the significance criteria and local regulations in the five jurisdictions with non-transportation noise standards. It should be noted that the results of the construction noise impact analysis represent average noise impact conditions. There would be times during construction activities when construction noise levels at each of the noise-sensitive receptors could be higher and lower than those presented below. This would be true when construction activities occur either closer to or further way from noise-sensitive receptors than at the center of the proposed construction activities, as assumed for this noise impact analysis. Furthermore, noise impacts would be higher during the fall and winter months when background noise levels are lower due to less recreational activities at the reservoir. It is also possible during certain atmospheric conditions that construction noise could be heard at locations further away than the six noise-sensitive receptors during the nighttime. This could occur under clear skies and very light winds when there would be a temperature inversion above the ground surface, which acts as a “ceiling.” This causes the sound waves to be redirected back to the ground level and travel further distances.

Table 3.10-12 presents a summary of the projected daytime and nighttime unmitigated noise levels for each alternative at each noise-sensitive receptor and compares them to the significance criteria.

Table 3.10-12
Summary of Construction Noise Impacts Results

COMPARISON OF DAYTIME UNMITIGATED NOISE LEVELS (dBA)

Receptor ID.	Receptor Location	No-Action/ Existing Daytime L_{eq}	Alternative 1 Unmitigated Daytime L_{eq}	Alternative 1 Increase Above Existing	Alternative 2 Unmitigated Daytime L_{eq}	Alternative 2 Increase Above Existing	Alternative 3 Unmitigated Daytime L_{eq}	Alternative 3 Increase Above Existing	Alternative 4 Unmitigated Daytime L_{eq}	Alternative 4 Increase Above Existing	Alternative 5 Unmitigated Daytime L_{eq}	Alternative 5 Increase Above Existing	Noise Impact Descriptor
1	East Natoma St. Residential Area, Folsom	60	61	1	61	1	61	1	61	1	61	1	None
2	Haley Drive Near Granite Beach, Granite Bay	45	45	0	47	2	48	3	48	3	47	2	None to Slight
3	Vista Mar Drive, El Dorado Hills	50	50	0	50	0	50	0	50	0	50	0	None
4	400 Lakeridge Ct, El Dorado Hills	50	50	0	50	0	50	0	50	0	50	0	None
5	Oak Leaf and Auburn-Folsom Road	60	60	0	60	0	60	0	60	0	60	0	None
6	Lake Shore Drive, Granite Bay	45	47	2	47	2	47	2	47	2	47	2	None

COMPARISON OF DAYTIME BACT NOISE LEVELS (dBA)

Receptor ID.	Receptor Location	No-Action/ Existing Daytime L_{eq}	Alternative 1 BACT Daytime L_{eq}	Alternative 1 Increase Above Existing	Alternative 2 BACT Daytime L_{eq}	Alternative 2 Increase Above Existing	Alternative 3 BACT Daytime L_{eq}	Alternative 3 Increase Above Existing	Alternative 4 BACT Daytime L_{eq}	Alternative 4 Increase Above Existing	Alternative 5 BACT Daytime L_{eq}	Alternative 5 Increase Above Existing	Noise Impact Descriptor
1	East Natoma St. Residential Area, Folsom	60	61	1	61	1	61	1	61	1	60	0	None
2	Haley Drive Near Granite Beach, Granite Bay	45	45	0	46	1	46	1	46	1	46	1	None
3	Vista Mar Drive, El Dorado Hills	50	50	0	50	0	50	0	50	0	50	0	None
4	400 Lakeridge Ct, El Dorado Hills	50	50	0	50	0	50	0	50	0	50	0	None
5	Oak Leaf and Auburn-Folsom Road	60	60	0	60	0	60	0	60	0	60	0	None
6	Lake Shore Drive, Granite Bay	45	46	1	46	1	46	1	46	1	46	1	None

COMPARISON OF NIGHTTIME UNMITIGATED NOISE LEVELS (dBA)

Receptor ID.	Receptor Location	No-Action/ Existing Nighttime L_{eq}	Alternative 1 Unmitigated NIghttime L_{eq}	Alternative 1 Increase Above Existing	Alternative 2 Unmitigated NIghttime L_{eq}	Alternative 2 Increase Above Existing	Alternative 3 Unmitigated NIghttime L_{eq}	Alternative 3 Increase Above Existing	Alternative 4 Unmitigated NIghttime L_{eq}	Alternative 4 Increase Above Existing	Alternative 5 Unmitigated NIghttime L_{eq}	Alternative 5 Increase Above Existing	Noise Impact Descriptor
1	East Natoma St. Residential Area, Folsom	50	57	7	56	6	56	6	56	6	55	5	Moderate
2	Haley Drive Near Granite Beach, Granite Bay	35	35	0	44	9	45	10	45	10	44	9	None to Severe
3	Vista Mar Drive, El Dorado Hills	40	40	0	40	0	40	0	40	0	40	0	None
4	400 Lakeridge Ct, El Dorado Hills	40	41	1	41	1	41	1	41	1	41	1	None
5	Oak Leaf and Auburn-Folsom Road	50	50	0	50	0	50	0	50	0	50	0	None
6	Lake Shore Drive, Granite Bay	35	42	7	42	7	42	7	42	7	42	7	Moderate

COMPARISON OF NIGHTTIME BACT NOISE LEVELS (dBA)

Receptor ID.	Receptor Location	No-Action/ Existing Nighttime L_{eq}	Alternative 1 BACT NIghttime L_{eq}	Alternative 1 Increase Above Existing	Alternative 2 BACT NIghttime L_{eq}	Alternative 2 Increase Above Existing	Alternative 3 BACT NIghttime L_{eq}	Alternative 3 Increase Above Existing	Alternative 4 BACT NIghttime L_{eq}	Alternative 4 Increase Above Existing	Alternative 5 BACT NIghttime L_{eq}	Alternative 5 Increase Above Existing	Noise Impact Descriptor
1	East Natoma St. Residential Area, Folsom	50	54	4	53	3	53	3	53	3	52	2	None to Slight
2	Haley Drive Near Granite Beach, Granite Bay	35	35	0	39	4	40	5	40	5	39	4	None to Slight
3	Vista Mar Drive, El Dorado Hills	40	40	0	40	0	40	0	40	0	40	0	None
4	400 Lakeridge Ct, El Dorado Hills	40	40	0	40	0	40	0	40	0	40	0	None
5	Oak Leaf and Auburn-Folsom Road	50	50	0	50	0	50	0	50	0	50	0	None
6	Lake Shore Drive, Granite Bay	35	39	4	39	4	39	4	39	4	39	4	Slight

The unmitigated daytime L_{eq} noise levels ranged from 45 dBA to 61 dBA under Alternative 1. These noise levels would represent no change compared to the No Action/No Project Alternative (i.e., existing noise level) at Noise-Sensitive Receptors 2, 3, 4 and 5 and a 1- to 2-dBA increase at Noise-Sensitive Receptors 1 and 6.

These impacts to daytime noise levels would be less than significant.

Under Alternative 1, the unmitigated nighttime L_{eq} noise levels ranged from 35 dBA at Noise-Sensitive Receptor 2 up to 57 dBA at Noise-Sensitive Receptor 1. At Noise-Sensitive Receptor 1, noise levels under Alternative 1 would increase by 7 dBA relative to the No Action/No Project Alternative.

This impact at Noise-Sensitive Receptor 1 would be significant. The inclusion of a noise barrier with the operation of stationary/quasi-stationary equipment and activities (i.e., BACT for drill rigs, blasting, rock crushing/screening) would reduce the unmitigated increase of 7 dBA to 4 dBA. This measure or other types of noise control measures, as reflected in Mitigation Measures N-1 to N-10, would reduce the construction noise associated with Alternative 1 to a less than significant level.

In addition to evaluating the potential incremental increase in noise levels over existing/No Action/No Project Alternative noise levels, the projected construction noise levels for each noise-sensitive receptor were compared to their respective non-transportation noise standards. These noise standards include daytime and nighttime L_{max}, L_{eq} and L_{50} noise limits and 24-hour L_{dn} noise limits. For the purposes of this analysis, it was conservatively assumed that L_{50} noise levels would be the same as the L_{eq} noise levels. Table 3.10-13 presents the maximum noise levels for all five alternatives and compares them with the respective noise standards to identify any exceedances of the noise standards.[2] The projected daytime construction L_{max}, L_{50} and L_{eq} noise levels at each noise-sensitive receptor were below the community noise standards, except for Natoma Street residences (Noise-Sensitive Receptor 1) where the daytime L_{50} noise level exceeds the Sacramento County L_{50} noise standard. However, this exceedance is not due to the noise impacts related action under the Folsom DS/FDR, but that the existing L_{50} daytime noise level at Natoma Street already exceeds the noise standard. Similarly, the projected nighttime construction L_{max}, L_{50} and L_{eq} noise levels at each noise-sensitive receptor were below the community noise standards, except for Natoma Street residences where the nighttime L_{50} noise level exceeds the Sacramento County L_{50} noise standard of 45 dBA. However, this exceedance is also because the existing nighttime L_{50} noise level at Natoma Street already exceeds the noise standard of 45 dBA.

[2] The differences in noise levels between the individual alternatives are relatively small and do not alter the basic conclusions of Table 3.10-13 relative to whether or not the applicable standard is exceeded.

Table 3.10-13
Comparison of Construction Noise Levels to Community Noise Standards

Receptor Locations		**L_{max} Level (dBA)**		**Exceedance**	**L_{50}/L_{eq} Level (dBA)**		**Exceedance**
Station Id.	**Description**	**Daytime**	**Standard**	**Yes/No**	**Daytime**	**Standard**	**Yes/No**
1	Natoma St. Residential Area, Folsom	62	**70**	**No**	61*	**50**	**Yes**
2	Haley Drive Near Granite Beach, Granite Bay	46	**--**	**--**	46	--	**--**
3	Vista Mar Drive, El Dorado Hills	50	**75**	**No**	50	**55**	**No**
4	400 Lakeridge Ct, El Dorado Hills	50	**75**	**No**	50	**55**	**No**
5	Oak Leaf and Auburn-Folsom Road	60	**--**	**No**	60	--	**No**
6	Lake Shore Drive, Granite Bay	47	**--**	**--**	46	**--**	**--**

Receptor Locations		**L_{max} Level (dBA)**		**Exceedance**	**L_{50}/L_{eq} Level (dBA)**		**Exceedance**
Station Id.	**Description**	**Nighttime**	**Standard**	**Yes/No**	**Nighttime**	**Standard**	**Yes/No**
1	Natoma St. Residential Area, Folsom	58	**65**	**No**	54*	**45**	**Yes**
2	Haley Drive Near Granite Beach, Granite Bay	42	**--**	**--**	40	--	**--**
3	Vista Mar Drive, El Dorado Hills	40	**60**	**No**	40	**45**	**No**
4	400 Lakeridge Ct, El Dorado Hills	40	**60**	**No**	40	**45**	**No**
5	Oak Leaf and Auburn-Folsom Road	50	**--**	**No**	50	--	**No**
6	Lake Shore Drive, Granite Bay	42	**--**	**--**	39	**--**	**--**

Receptor Locations		**L_{dn} Level (dBA)**		**Exceedance**
Station Id.	**Description**	**Projected**	**Standard**	**Yes/No**
1	Natoma St. Residential Area, Folsom	--	--	--
2	Haley Drive Near Granite Beach, Granite Bay	46	**50**	**No**
3	Vista Mar Drive, El Dorado Hills	--	--	--
4	400 Lakeridge Ct, El Dorado Hills	--	--	--
5	Oak Leaf and Auburn-Folsom Road	60*	**50**	**Yes**
6	Lake Shore Drive, Granite Bay	46	**50**	**No**

Notes: Exceedances are due to existing background noise levels at or above the standards before adding in project noise levels.
Conservatively assumed that L50 noise level is equivalent to Leq noise level.
Noise levels represent maximum BACT noise level for all five action alternatives.
The differences in noise levels between the individual alternatives do not alter the conclusions of the table relative to whether or not the standard is exceeded.
* = BACT applied to stationary/quasi-stationary equipment

For Noise-Sensitive Receptors 2, 5 and 6, located in Placer County and the Granite Bay community, the applicable noise standard is based on an L_{dn} noise limit. The projected BACT noise L_{dn} noise levels ranged from 46 dBA at Noise-Sensitive Receptor 2 and 6 and 60 dBA at Noise-Sensitive Receptor 5. The projected L_{dn} noise level at Noise-Sensitive Receptors 2 and 6 were below the L_{dn} standard, but Noise-Sensitive Receptor 5 exceeded the L_{dn} noise standard of 50 dBA by 10 dBA. However, this exceedance is not due to noise impacts related to action under the Folsom DS/FDR, but that the existing L_{dn} noise levels of 50 to 60 dBA meet or exceed the noise standard of 50 dBA. Although noise impacts at residential areas would be below the Placer County applicable noise standard, construction and borrow activities conducted at Beal's Point would generate noise levels that could periodically exceed the Placer County Ldn noise limit of 70 dBA established for recreational areas at the Beal's Point campground area due to its close proximity to construction activities. However, all reasonable mitigation measures would be used to reduce to noise impacts, which would include, but would not be limited to using portable noise barriers, limiting construction work to daytime (7:00 a.m. to 7:00 p.m.) and off-season periods (October through April), and erecting staging areas as far from the campground as possible. A detailed list mitigation measures is presented in Section 3.10.4.

This impact at Noise-Sensitive Receptors 1 and 5 would be potentially significant, even with the application of BACT to stationary/quasi-stationary construction equipment. Mitigation Measures N-1 to N-10 would reduce the impact to less than significant.

Blasting and vibration activities would generate construction noise impacts.

The peak rock blasting noise level would be 94 dBA at 50 feet away. Placer County is the only county or community with blasting noise limits. It limits impulse noise levels from blasting to a peak linear noise level of 122 dB at the property line of a receiving land use, which is equivalent to 113 dBA. This noise standard was used to assess potential noise blasting impacts at both noise-sensitive receptors within and outside of Placer County. Blasting activities would occur in the proposed borrow sites located at the Folsom Reservoir shoreline. The distance between the center of the construction activities and the noise-sensitive receptors was used to conservatively represent the distance from potential blasting activities. Those distances range from 935 feet to 4,100 feet from the noise-sensitive receivers. Based on those distances the noise impacts from blasting operations could range from 46 to 63 dBA. These noise levels are well below the Placer County blasting noise limit and are considered to be less than significant.

Vibration impacts associated with construction equipment were calculated for four types of construction equipment that would be similar to the equipment anticipated to be used during construction. This equipment includes small and large bulldozers, loaded trucks, and jackhammers. Vibration levels from each piece of equipment measured at a reference distance of 25 feet away were obtained from Table 3.10-11. The only noise-sensitive receptor that could be impacted by construction equipment vibration would be at the Natoma Street residences during excavation activities occurring adjacent to Natoma Street. The nearest point to the residences is approximately 150 feet away. Vibration levels calculated at the 150-foot distance for each piece of equipment ranged from 0.0002 to 0.06 in/sec. These vibration levels are considered imperceptible to barely perceptible by humans and are, therefore, considered to be less than significant. Table 3.10-14 presents the calculated vibration levels at 25 feet away and 150 feet away for the four types of construction equipment.

Impacts from vibration would be less than significant.

Table 3.10-14
Construction Equipment Vibration Impacts

Equipment	***PPV at 25 ft (in./sec)***	***PPV at 150 ft (in./sec)***	***Effects on Humans***
Large Bulldozer	0.089	0.006	Barely Perceptible
Loaded Trucks	0.076	0.005	Barely Perceptible
Jackhammer	0.035	0.002	Imperceptible
Small Bulldozer	0.003	0.0002	Imperceptible

Environmental Consequences/Environmental Impacts of Alternative 2
<u>*Construction activities would generate noise impacts under Alternative 2.*</u>

Table 3.10-12 presents a summary of the projected daytime and nighttime unmitigated noise levels for each alternative at each noise-sensitive receptor and compares them to the significance criteria.

The unmitigated daytime L_{eq} noise levels ranged from 47 dBA to 61 dBA under Alternative 2. These noise levels would represent no change compared to the No Action/No Project Alternative (i.e., existing noise level) at Noise-Sensitive Receptors 3, 4 and 5 and a 1- to 2-dBA increase at Noise-Sensitive Receptors 1, 2, and 6.

These impacts to daytime noise levels would be less than significant.

Under Alternative 2, the unmitigated nighttime L_{eq} noise levels ranged from 40 dBA at Noise-Sensitive Receptor 3 up to 56 dBA at Noise-Sensitive Receptor 1. At Noise-Sensitive Receptor 1, noise levels under Alternative 2 would increase by 6 dBA relative to the No Action/No Project Alternative. At Noise-Sensitive Receptor 2, noise levels under Alternative 2 would increase by 9 dBA relative to the No Action/No Project Alternative. At Noise-Sensitive Receptor 6, noise levels under Alternative 2 would increase by 7 dBA relative to the No Action/No Project Alternative.

These impacts at Noise-Sensitive Receptors 1, 2 and 6 would be significant. The inclusion of a noise barrier with the operation of stationary/quasi-stationary equipment and activities (i.e., BACT for drill rigs, blasting, rock crushing/screening) would reduce the unmitigated increases of 6 dB to 3 dB, 9 dBA to 4 dBA, and 7 dBA to 4 dBA. This measure or other types of noise control measures, as reflected in Mitigation Measures N-1 to N-10, would reduce the construction noise associated with Alternative 2 to a less than significant level.

As described above in the discussion of Alternative 1, construction activity associated with any of the alternatives would result in noise levels that exceed local noise standards at Noise-Sensitive Receptors 1 and 5.

This impact at Noise-Sensitive Receptors 1 and 5 would be potentially significant, even with the application of BACT to stationary/quasi-stationary construction equipment. Mitigation Measures N-1 to N-10 would reduce the impact to less than significant.

Blasting and vibration activities would generate construction noise impacts.

Impacts under this alternative would be similar to those described under Alternative 1.

Impacts from vibration and blasting would be less than significant.

Construction of new embankments would generate construction noise.

Alternative 2 would require the raising of Folsom Facility structures, which could result in the temporary increase of maximum flood flows in the reservoir. A number of new embankments would need to be constructed at various locations around Folsom Reservoir to control these flood flows. The construction of the embankments would require using standard earthmoving and construction equipment, such as backhoes, dump trucks, cranes and loaders. The construction of embankments would occur during the daytime and would take 1 to 2 weeks to construct. The noise associated with construction of new embankments is included within the overall construction noise levels estimated for Alternative 2, as presented above.

Environmental Consequences/Environmental Impacts of Alternative 3

Construction activities would generate noise impacts under Alternative 3.

Table 3.10-12 presents a summary of the projected daytime and nighttime unmitigated noise levels for each alternative at each noise-sensitive receptor and compares them to the significance criteria.

The unmitigated daytime L_{eq} noise levels ranged from 47 dBA to 61 dBA under Alternative 3. These noise levels would represent no change compared to the No Action/No Project Alternative (i.e., existing noise levels) at Noise-Sensitive Receptors 3, 4, and 5 and a 1 to 3 dBA increase at Noise-Sensitive Receptors 1, 2, and 6.

These impacts to daytime noise levels would be less than significant.

Under Alternative 3, the unmitigated nighttime L_{eq} noise levels ranged from 40 dBA at Noise-Sensitive Receptor 3 up to 56 dBA at Noise-Sensitive Receptor 1. At Noise-Sensitive Receptor 1, noise levels under Alternative 3 would increase by 6 dBA relative to the No Action/No Project Alternative. At Noise-Sensitive Receptor 2, noise levels under Alternative 3 would increase by 10 dBA relative to the No Action/No Project Alternative. At Noise-Sensitive Receptor 6, noise levels under Alternative 3 would increase by 7 dBA relative to the No Action/No Project Alternative.

These impacts at Noise-Sensitive Receptors 1, 2 and 6 would be potentially significant. The inclusion of a noise barrier with the operation of stationary/quasi-stationary equipment and activities (i.e., BACT for drill rigs, blasting, rock crushing/screening) would reduce the unmitigated increases of 6 dB to 3 dB, 10 dBA to 5 dBA, and 7 dBA to 4 dBA. This measure or other types of noise control measures, as reflected in Mitigation Measures N-1 to N-10, would reduce the construction noise associated with Alternative 3 to a less than significant level.

As described above in the discussion of Alternative 1, construction activity associated with any of the alternatives would result in noise levels that exceed local noise standards at Noise-Sensitive Receptors 1 and 5.

This impact at Noise-Sensitive Receptors 1 and 5 would be potentially significant, even with the application of BACT to stationary/quasi-stationary construction equipment. Mitigation Measures N-1 to N-10 would reduce the impact to less than significant.

Blasting and vibration activities would generate construction noise impacts.

Impacts under this alternative would be similar to those described under Alternative 1.

Impacts from vibration and blasting would be less than significant.

Construction of new embankments would generate construction noise.

Construction noise impacts under Alternative 3 would be similar to those described for Alternative 2.

Environmental Consequences/Environmental Impacts of Alternative 4
Construction activities would generate noise impacts under Alternative 4.

Table 3.10-12 presents a summary of the projected daytime and nighttime unmitigated noise levels for each alternative at each noise-sensitive receptor and compares them to the significance criteria.

The unmitigated daytime L_{eq} noise levels ranged from 47 dBA to 61 dBA under Alternative 4. These noise levels would represent no change compared to the No Action/No Project Alternative (i.e., existing noise levels) at Noise-Sensitive Receptors 3, 4 and 5 and a 1 to 3 dBA increase at Noise-Sensitive Receptors 1, 2, and 6.

These impacts to daytime noise levels would be less than significant.

Under Alternative 4, the unmitigated nighttime L_{eq} noise levels ranged from 40 dBA at Noise-Sensitive Receptor 3 up to 56 dBA at Noise-Sensitive Receptor 1. At Noise-Sensitive Receptor 1, noise levels under Alternative 4 would increase by 6 dBA relative to the No Action/No Project Alternative. At Noise-Sensitive Receptor 2, noise levels under Alternative 4 would increase by 10 dBA relative to the No Action/No Project Alternative. At Noise-Sensitive Receptor 6, noise levels under Alternative 4 would increase by 7 dBA relative to the No Action/No Project Alternative.

These impacts at Noise-Sensitive Receptors 1, 2 and 6 would be significant. The inclusion of a noise barrier with the operation of stationary/quasi-stationary equipment and activities (i.e., BACT for drill rigs, blasting, rock crushing/screening) would reduce the unmitigated increases of 6 dB to 3 dB, 10 dBA to 5 dBA, and 7 dBA to 4 dBA. This measure or other types of noise control measures, as reflected in Mitigation Measures N-1 to N-10, would reduce the construction noise associated with Alternative 4 to a less than significant level.

As described above in the discussion of Alternative 1, construction activity associated with any of the alternatives would result in noise levels that exceed local noise standards at Noise-Sensitive Receptors 1 and 5.

This impact at Noise-Sensitive Receptors 1 and 5 would be potentially significant, even with the application of BACT to stationary/quasi-stationary construction equipment. Mitigation Measures N-1 to N-10 would reduce the impact to less than significant.

Blasting and vibration activities would generate construction noise impacts.

Impacts under this alternative would be similar to those described under Alternative 1.

Impacts from vibration and blasting would be less than significant. Nonetheless, Mitigation Measures N-1 through N-10 are recommended to minimize and avoid any potential impacts.

Construction of new embankments would generate construction noise.

Construction noise impacts under Alternative 4 would be similar to those described for Alternative 2. Alternative 4 would include require higher embankments because the alternative proposes a 7-foot raise to Folsom Facility structures.

Environmental Consequences/Environmental Impacts of Alternative 5
Construction activities would generate slight noise impacts under Alternative 5.

Table 3.10-12 presents a summary of the projected daytime and nighttime unmitigated noise levels for each alternative at each noise-sensitive receptor and compares them to the significance criteria.

The unmitigated daytime L_{eq} noise levels ranged from 47 dBA to 61 dBA under Alternative 5. These noise levels would represent no change compared to the No Action/No Project Alternative (i.e., existing noise levels) at Noise-Sensitive Receptors 3, 4 and 5 and a 1 to 2 dBA increase at Noise-Sensitive Receptors 1, 2, and 6.

These impacts to daytime noise levels would be less than significant.

Under Alternative 5, the unmitigated nighttime L_{eq} noise levels ranged from 40 dBA at Noise-Sensitive Receptor 3 up to 55 dBA at Noise-Sensitive Receptor 1. At Noise-Sensitive Receptor 2, noise levels under Alternative 5 would increase by 9 dBA relative to the No Action/No Project Alternative. At Noise-Sensitive Receptor 6, noise levels under Alternative 4 would increase by 7 dBA relative to the No Action/No Project Alternative.

These impacts at Noise-Sensitive Receptors 2 and 6 would be significant. The inclusion of a noise barrier with the operation of stationary/quasi-stationary equipment and activities (i.e., BACT for drill rigs, blasting, rock crushing/screening) would reduce the unmitigated increases of 9 dB to 4 dB, and 7 dBA to 4 dBA. This *measure or other types of noise control measures, as reflected in Mitigation Measures N-1 to N-10, would reduce the construction noise associated with Alternative 5 to a less than significant level.*

As described above in the discussion of Alternative 1, construction activity associated with any of the alternatives would result in noise levels that exceed local noise standards at Noise-Sensitive Receptors 1 and 5.

This impact at Noise-Sensitive Receptors 1 and 5 would be potentially significant, even with the application of BACT to stationary/quasi-stationary construction equipment. Mitigation Measures N-1 to N-10 would reduce the impact to less than significant.

Blasting and vibration activities would generate construction noise impacts.

Impacts under this alternative would be similar to those described under Alternative 1.

Impacts from vibration and blasting would be less than significant. Nonetheless, Mitigation Measures N-1 through N-11 are recommended to minimize and avoid any potential impacts.

Construction of new embankments would generate construction noise.

Construction noise impacts under Alternative 5 would be similar to those described for Alternative 2. Alternative 5 would include require higher embankments because the alternative proposes a 17-foot raise to Folsom Facility structures.

Comparison of Alternatives Construction Noise Impacts

The results of the construction noise impact analysis presented in Table 3.10-12 showed that there would be no daytime impact at any of the noise-sensitive receptors, but potentially significant nighttime noise impacts (6 to 10 dBA noise level increases over existing/No Action/No Project Alternative conditions) at Noise-Sensitive Receptors 1, 2 and 6. The highest nighttime noise impacts for all alternatives would occur at Noise-Sensitive Receptor 2 (in the Granite Bay area) where existing/No Action/No Project Alternative noise levels are the lowest. Overall, Alternatives 3 and 4 would produce slightly higher noise impacts and Alternative 1 would produce slightly lower nighttime noise impacts compared to the other alternatives. Alternatives 2, 3, 4 and 5, in addition to generating moderate noise impacts at Noise-Sensitive Receptors 1 and 6, would generate a severe noise impact at Noise-Sensitive Receptor 2. Alternative 1 would not generate a noise impact at Noise-Sensitive Receptor 2 because there would be no construction activity at Granite Bay. However, the differences in nighttime noise levels between Alternatives 2, 3, 4 and 5 at each noise-sensitive receptor are 1 dBA or less, which would be imperceptible by most people. Therefore, there would be no perceptible difference in noise impacts between action alternatives, except for Alternative 1 at Noise-Sensitive Receptor 2.

Since there is no notable difference in daily construction noise impacts between action alternatives, except at Noise-Sensitive Receptor 2 for Alternative 1, the other approach to distinguish noise impacts between the alternatives would be to factor in the duration of construction schedule (total number of days) for each alternative. Table 3.10-15 presents a comparison of action alternative construction noise impacts at each noise sensitive receptor. The L_{dn} noise levels represent average noise levels over the duration of closest major construction phase to each noise-sensitive receptor. The table also presents which action alternatives would produce lower or higher noise impacts at each noise-sensitive receptor. Overall, it shows that there is no substantial difference in L_{dn} noise levels between the alternatives. In addition, when comparing the noise impacts of the action alternatives to the No Action/No Project Alternative the difference in noise levels at each noise-sensitive receptor would range from 2 to 6 dBA. These incremental differences would be considered imperceptible to readily perceptible by most people. The readily perceptible unmitigated noise impacts (increase of more than 5 dBA) would occur at Noise-Sensitive Receptor 2 (Alternative 5), and Noise-Sensitive Receptor 6 (Alternative 5).

3.10.2.2 Transportation Noise Analysis

The following sections describe assessment methods, significance criteria, and potential impacts to transportation noise of the Folsom DS/FDR alternatives.

Assessment Methods

Traffic noise levels generated from construction worker vehicles and trucks hauling materials on local roads were evaluated for nine noise-sensitive receptors and compared with existing ambient and No Action/No Project Alternative noise levels to determine the need to evaluate noise mitigation measures. An initial screening analysis was also conducted to evaluate any impacts on regional access routes for trucks hauling materials, such as interstates and state highway roads. Section 3.9 provides traffic data used to estimate traffic noise levels for each model scenario. Presented below is the methodology used to evaluate transportation noise impacts.

Traffic Noise on Local Roads

Traffic noise levels were estimated for construction workers' commuting vehicles, delivery trucks and trucks hauling aggregate materials using the FHWA Traffic Noise Model, Version 2.5 (TNM2.5). As of January 15, 2005, Caltrans requires all new projects to use TNM2.5 to model potential noise impacts for highway projects. TNM2.5 was used to estimate noise levels for the existing, No Action/No Project

Table 3.10-15 ***Comparison of Alternatives Construction Noise Impacts***									
Receptor Locations		**Construction Period Average L_{dn} Noise Level**						**Impact Evaluation***	
Station Id.	**Description**	**No-Action**	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**	**Lower**	**Higher**
1	Natoma St. Residential Area, Folsom	60	65	64	64	65	63	Alt. 5	Alt. 1 & 4
2	Haley Drive Near Granite Beach, Granite Bay	45	47	49	50	50	51	Alt. 1	Alt. 5
3	Vista Mar Drive, El Dorado Hills	50	53	52	53	52	52	Alt. 2, 4 & 5	Alt. 1 & 3
4	400 Lakeridge Ct, El Dorado Hills	50	53	52	53	52	52	Alt. 2, 4 & 5	Alt. 1 & 3
5	Oak Leaf and Auburn-Folsom Road	60	62	62	62	63	63	Alt. 1, 2 & 3	Alt. 4 & 5
6	Lake Shore Drive, Granite Bay	45	50	50	50	50	51	Alt. 1, 2, 3 & 4	Alt. 5

Note: * Impact evaluation compares Alternatives 1 through 5 amongst each other.

Alternative and Alternatives 1 through 5 along the proposed truck haul routes. TNM2.5 is capable of modeling noise impacts from automobiles, medium trucks (2 axles), heavy trucks (3 or more axles), buses, and motorcycles factoring in vehicle volume, vehicle speed, roadway configuration, distance to the noise-sensitive receptors, atmospheric absorption, and ground attenuation characteristics. When predicting noise levels, TNM2.5 accounts for the effects of different pavement types, changes in roadway grades and attenuation due to rows of buildings and dense vegetation. TNM2.5 is used to predict hourly L_{eq} and L_{dn} noise levels for both free-flowing and interrupted-flow conditions (i.e., intersections, and traffic control devices). The model is generally considered to be accurate within +/- 3 dB.

As part of the traffic noise modeling analysis, TNM2.5 was calibrated based on the noise level and traffic data collected in the field in order to make any necessary adjustments to the Existing Year (2006) and peak construction year modeling results based on the results of the calibration modeling analysis. The analysis used traffic and noise data for two Folsom-Auburn Road receptors presented in Reclamation's *Folsom Dam Road Access Restriction, Final Environmental Impact Statement* (April 2005). Appendix G presents the traffic data and results of the calibration modeling analysis. It shows that TNM2.5 reasonably predicted traffic noise levels at both receptor locations. Therefore, no adjustments were made to the other TNM2.5 model results.

Existing, No Action/No Project Alternative, and Alternatives 1 through ADT volumes were obtained from Section 3.9. Vehicle classification data by vehicle type was based on actual traffic data for Folsom-Auburn Road provided by the City of Folsom. These vehicle distributions were applied to all local roadway ADT volumes. Additional assumptions used in the traffic noise modeling analysis are presented in Appendix G. Traffic noise modeling for the action alternatives was conducted only for those construction years with the highest projected number of construction worker vehicles and truck trips, since these would be the years that would generate the highest traffic noise impacts. Based on the projected ADT volumes for each action alternative, it is projected that 2009 would have the highest combined construction workers and truck ADT volumes for all alternatives, except for Alternative 5. For Alternative 5, the highest number of combined ADT volumes would occur in 2013. The No Action/No Project Alternative was modeled for both years. Table 3.10-16 presents a summary of the combined worker and truck ADT volumes by year for each alternative.

Table 3.10-16
Projected Construction Employee and Truck ADT Volumes

Year	***Action Alternatives***				
	Alt 1	***Alt 2***	***Alt 3***	***Alt 4***	***Alt 5***
2007	1,004	960	496	976	1,064
2008	3,805	3,270	3,252	3,615	3,451
2009	**5,393**	**5,592**	**4,275**	**5,049**	3,377
2010	4,411	4,238	2,913	3,834	3,315
2011	1,284	2,736	1,952	1,056	1,438
2012	1,051	1,816	1,594	1,636	4,206
2013	716	3,248	1,534	3,558	**4,860**
2014	0	0	0	0	3,822

Highest ADT volume for each Alternative indicated in bold.

For this traffic noise analysis, a single reference point based on a 50-foot distance from the roadway centerline to each noise-sensitive receptor was used. This distance was selected because the distances from the roadway centerlines to the noise-sensitive receptors ranged from 40 to 70 feet, and the incremental difference in predicted noise levels at this range of distance is less than 3 dBA. This difference in noise levels is considered to be barely perceptible by humans. Therefore, the 50-foot distance was selected as a median distance and will represent a uniform evaluation of noise impacts for all nine noise-sensitive receptor locations. In addition, since this analysis primarily compares traffic noise levels with and without action, those differences between receptors would remain constant. The most notable variable between alternatives is the projected traffic volume.

Regional Haul Routes Noise

The proposed regional haul routes in the Cities of Marysville, Wheatland, Lincoln, Rocklin and Roseville include Highways 70 and 65, Interstate 80 and US Highway 50. The existing and future No Action/No Project Alternative ADT volumes along these highways would not be substantially affected by any vehicle additions as a result of the Folsom DS/FDR action. The combined construction workers and haul truck ADT volumes represent less than one percent of the total ADT volume along these proposed regional haul routes. In order to project an appreciable noise level increase of 3 dBA or greater would require the traffic volumes to double the existing or No Action/No Project Alternative traffic volumes. The projected increase in ADT volumes due to the actions would generate less than 0.3 dBA increase in existing noise levels. Therefore, a detailed traffic noise modeling analysis was not conducted for the regional haul routes.

Transportation Noise Impacts Significance Criteria

The existing peak hour noise levels (daytime L_{eq}) exceed FHWA NAC of 66 dBA at all nine noise-sensitive receptors. In addition, existing L_{dn} noise levels also exceed the each of the county and community exterior L_{dn}/CNEL maximum allowable noise levels of 60 dBA at all nine noise-sensitive receptors. Therefore, noise effects on noise-sensitive receptors were considered significant and would require evaluating noise mitigation measures if either of the following were predicted by the noise modeling results:

- The increase in existing (2006) noise levels, as a result of construction-related traffic associated with any of the action alternatives, would be 12 dBA or more per Caltrans noise policy; or

- The incremental change in traffic noise levels due to construction-related traffic from actions related to the Folsom DS/FDR would, at any noise-sensitive receptor, increase the peak hour L_{eq} and L_{dn} noise levels by 5 dBA or more above those of the No-Action/No Project Alternative. A 5-dBA threshold was selected since this change in noise levels is considered readily perceptible by humans.

Transportation Noise Environmental Impacts/Environmental Consequences

Environmental Consequences/Environmental Impacts of the No Action/No Project Alternative

The No Action/No Project Alternative would not generate construction traffic noise impacts relative to the existing conditions.

Under the No Action/No Project Alternative, the Folsom DS/FDR action would not be constructed. This analysis assumes that construction traffic under the No Action/No Project Alternative would be the same as under existing conditions (i.e., there would be none). There would be no impact of the No Action/No Project Alternative.

Environmental Consequences/Environmental Impacts of Alternative 1

Truck and construction worker traffic would generate transportation noise impacts.

Tables 3.10-17 through 3.10-25 present a summary of the projected daytime and nighttime peak hour L_{eq} and L_{dn} noise levels for each noise-sensitive receptor and each action alternative, and compare them to the existing and No Action/No Project Alternative noise levels. The details behind results of the traffic noise modeling analysis are presented in Appendix G.

The transport of construction workers, materials, and equipment to the construction and borrow sites under Alternative 1 would generate daytime and nighttime peak hour L_{eq} and L_{dn} noise levels increases of less than 4 dBA when compared to existing noise levels at each Noise-Sensitive Receptor. These noise level increases would be well below the Caltrans noise policy of a 12-dBA allowable noise level increase over existing conditions. Similarly, Alternative 1 would generate less than a 2 dBA increase in peak hour L_{eq} and L_{dn} noise levels when compared to the No Action/No Project Alternative noise levels for 2009. These small incremental changes are well below the 5-dBA significance criterion threshold. The highest noise impact under Alternative 1 would occur at Noise-Sensitive Receptor 4 on East Natoma Street, which would be a 3.1 dBA increase over existing conditions.

This impact would be less than significant and would not require mitigation.

Environmental Consequences/Environmental Impacts of Alternative 2
Truck and construction worker traffic would generate transportation noise impacts.

Tables 3.10-17 through 3.10-25 present a summary of the projected daytime and nighttime peak hour L_{eq} and L_{dn} noise levels for each noise-sensitive receptor and each action alternative, and compare them to the existing and No Action/No Project Alternative noise levels.

The transport of construction workers, materials, and equipment to the construction and borrow sites under Alternative 2 would generate daytime and nighttime peak hour L_{eq} and L_{dn} noise levels increases of less than 4 dBA when compared to existing noise levels at each Noise-Sensitive Receptor. These noise level increases would be well below the Caltrans noise policy of a 12-dBA allowable noise level increase over existing conditions. Similarly, Alternative 2 would generate less than a 2 dBA increase in peak hour L_{eq} and L_{dn} noise levels when compared to the No Action/No Project Alternative noise levels for 2009. These small incremental changes are well below the 5-dBA significance criterion threshold. The highest noise impact under Alternative 1 would occur at Noise-Sensitive Receptor 4 on East Natoma Street, which would be a 3.1 dBA increase over existing conditions.

This impact would be less than significant and would not require mitigation.

Table 3.10-17
Summary of Daytime Peak Hour Results
Daytime Peak Hour L_{eq} Noise Levels at 50 Feet from Local Roadways

Sensitive Noise Receiver Number	**Local Roadway**	**Description**	**EXISTING: 2006**	**NO ACTION: 2009**	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**NO ACTION: 2013**	**Alternative 5**
			L_{eq} (dBA)	**L_{eq} (dBA)**	**L_{eq} (dBA)**	**L_{eq} (dBA)**	**L_{eq} (dBA)**	**L_{eq} (dBA)**	**L_{eq} (dBA)**	**L_{eq} (dBA)**
1	East Bidwell Street	Along Albrighton Drive, residential area adjacent to south bound lanes in Folsom	72.5	73.1	74.0	74.0	73.9	73.9	73.4	73.6
2	Oak Avenue Parkway	Along Thorndike Way, residential area adjacent to north bound lanes in Folsom	68.9	70.0	70.3	70.3	70.3	70.3	70.3	70.6
3	Green Valley Road	Parking lot adjacent to residential area along Kipps Lane, north of Green Valley Road in El Dorado Hills, El Dorado County	71.6	72.7	73.8	72.9	72.8	73.0	73.0	73.1
4	East Natoma Road	End of Pomine Court, residential area along east bound lanes in Folsom	66.8	68.9	69.9	69.9	69.7	69.7	69.2	69.6
5	Folsom-Auburn Road	7550 Folsom-Auburn Road is in a residential area along the south bound lanes in Folsom	72.5	73.8	73.9	73.9	73.8	73.9	74.1	74.2
6	Blue Ravine Road	Blackberry Circle, residential area along north bound lanes in Folsom	69.3	69.7	70.5	70.5	70.3	70.3	70.0	70.2
7	Sierra College Boulevard	End of Kilmartin Court, residential street adjacent to south bound lanes in Rocklin, Placer County	70.6	71.0	71.5	71.5	71.6	71.5	71.3	72.1
8	Douglas Boulevard	4600-4699 Rolling Oaks Drive, residential area adjacent to west bound lanes in Granite Bay, Placer County	72.5	73.0	73.1	73.3	73.1	73.1	73.3	73.6
9	Eureka Road	1445 Eureka Road, multi-family residential development (225 units) on north bound lanes in Roseville, Placer County	72.4	72.7	72.8	72.9	72.8	72.8	73.1	73.1

Table 3.10-18
Comparison of Alternatives to Existing Noise Levels in 2006
Change in Daytime L_{eq} Noise Levels at 50 Feet from Local Roadways

Sensitive Noise Receiver Number	Local Roadway	Description	EXISTING: 2006	NO ACTION: 2009	Alternative 1	Alternative 2	Alternative 3	Alternative 4	NO ACTION: 2013	Alternative 5
			L_{eq} (dBA)	L_{eq} (dBA)	L_{eq} (dBA)	L_{eq} (dBA)	L_{eq} (dBA)	L_{eq} (dBA)	L_{eq} (dBA)	L_{eq} (dBA)
1	East Bidwell Street	Along Albrighton Drive, residential area adjacent to south bound lanes in Folsom	--	0.6	1.5	1.5	1.4	1.4	0.9	1.1
2	Oak Avenue Parkway	Along Thorndike Way, residential area adjacent to north bound lanes in Folsom	--	1.1	1.4	1.4	1.4	1.4	1.4	1.7
3	Green Valley Road	Parking lot adjacent to residential area along Kipps Lane, north of Green Valley Road in El Dorado Hills, El Dorado County	--	1.1	2.2	1.3	1.2	1.4	1.4	1.5
4	East Natoma Road	End of Pomine Court, residential area along east bound lanes in Folsom	--	2.1	3.1	3.1	2.9	2.9	2.4	2.8
5	Folsom-Auburn Road	7550 Folsom-Auburn Road is in a residential area along the south bound lanes in Folsom	--	1.3	1.4	1.4	1.3	1.4	1.6	1.7
6	Blue Ravine Road	Blackberry Circle, residential area along north bound lanes in Folsom	--	0.4	1.2	1.2	1.0	1.0	0.7	0.9
7	Sierra College Boulevard	End of Kilmartin Court, residential street adjacent to south bound lanes in Rocklin, Placer County	--	0.4	0.9	0.9	1.0	0.9	0.7	1.5
8	Douglas Boulevard	4600-4699 Rolling Oaks Drive, residential area adjacent to west bound lanes in Granite Bay, Placer County	--	0.5	0.6	0.8	0.6	0.6	0.8	1.1
9	Eureka Road	1445 Eureka Road, multi-family residential development (225 units) on north bound lanes in Roseville, Placer County	--	0.3	0.4	0.5	0.4	0.4	0.7	0.7

Table 3.10-19
Comparison of Alternatives to Projected No Action Noise Levels in 2009 and 2013
Daytime L_{eq} Noise Levels at 50 Feet from Local Roadways

Sensitive Noise Receiver Number	**Local Roadway**	**Description**	**EXISTING: 2006**	**NO ACTION: 2009**	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**NO ACTION: 2013**	**Alternative 5**
			L_{eq} (dBA)	**L_{eq} (dBA)**	**L_{eq} (dBA)**	**L_{eq} (dBA)**	**L_{eq} (dBA)**	**L_{eq} (dBA)**	**L_{eq} (dBA)**	**L_{eq} (dBA)**
1	East Bidwell Street	Along Albrighton Drive, residential area adjacent to south bound lanes in Folsom	--	--	0.9	0.9	0.8	0.8	--	0.2
2	Oak Avenue Parkway	Along Thorndike Way, residential area adjacent to north bound lanes in Folsom	--	--	0.3	0.3	0.3	0.3	--	0.3
3	Green Valley Road	Parking lot adjacent to residential area along Kipps Lane, north of Green Valley Road in El Dorado Hills, El Dorado County	--	--	1.1	0.2	0.1	0.3	--	0.1
4	East Natoma Road	End of Pomine Court, residential area along east bound lanes in Folsom	--	--	1.0	1.0	0.8	0.8	--	0.4
5	Folsom-Auburn Road	7550 Folsom-Auburn Road is in a residential area along the south bound lanes in Folsom	--	--	0.1	0.1	0.0	0.1	--	0.1
6	Blue Ravine Road	Blackberry Circle, residential area along north bound lanes in Folsom	--	--	0.8	0.8	0.6	0.6	--	0.2
7	Sierra College Boulevard	End of Kilmartin Court, residential street adjacent to south bound lanes in Rocklin, Placer County	--	--	0.5	0.5	0.6	0.5	--	0.8
8	Douglas Boulevard	4600-4699 Rolling Oaks Drive, residential area adjacent to west bound lanes in Granite Bay, Placer County	--	--	0.1	0.3	0.1	0.1	--	0.3
9	Eureka Road	1445 Eureka Road, multi-family residential development (225 units) on north bound lanes in Roseville, Placer County	--	--	0.1	0.2	0.1	0.1	--	0.0

Table 3.10-20
Summary of Nighttime Peak Hour Results
Nighttime Peak Hour L_{eq} Noise Levels at 50 Feet from Local Roadways

Sensitive Noise Receiver Number	Local Roadway	Description	EXISTING: 2006	NO ACTION: 2009	Alternative 1	Alternative 2	Alternative 3	Alternative 4	NO ACTION: 2013	Alternative 5
			L_{eq} (dBA)	L_{eq} (dBA)	L_{eq} (dBA)	L_{eq} (dBA)	L_{eq} (dBA)	L_{eq} (dBA)	L_{eq} (dBA)	L_{eq} (dBA)
1	East Bidwell Street	Along Albrighton Drive, residential area adjacent to south bound lanes in Folsom	66.0	66.5	66.5	66.5	66.5	66.5	66.8	66.8
2	Oak Avenue Parkway	Along Thorndike Way, residential area adjacent to north bound lanes in Folsom	62.4	63.3	63.7	63.7	63.7	63.7	63.7	64.1
3	Green Valley Road	Parking lot adjacent to residential area along Kipps Lane, north of Green Valley Road in El Dorado Hills, El Dorado County	65.0	66.1	66.2	66.5	66.7	66.7	66.4	66.7
4	East Natoma Road	End of Pomine Court, residential area along east bound lanes in Folsom	60.2	62.3	63.9	64.1	63.9	63.9	62.6	63.9
5	Folsom-Auburn Road	7550 Folsom-Auburn Road is in a residential area along the south bound lanes in Folsom	66.0	67.3	67.7	67.7	67.4	67.7	67.6	68.1
6	Blue Ravine Road	Blackberry Circle, residential area along north bound lanes in Folsom	62.7	63.0	63.2	63.2	63.2	63.2	63.4	63.4
7	Sierra College Boulevard	End of Kilmartin Court, residential street adjacent to south bound lanes in Rocklin, Placer County	64.0	64.3	65.0	65.1	65.0	65.0	64.6	65.3
8	Douglas Boulevard	4600-4699 Rolling Oaks Drive, residential area adjacent to west bound lanes in Granite Bay, Placer County	65.9	66.4	66.7	66.7	66.7	66.7	66.8	67.3
9	Eureka Road	1445 Eureka Road, multi-family residential development (225 units) on north bound lanes in Roseville, Placer County	65.8	66.2	66.2	66.2	66.2	66.2	66.5	66.5

Table 3.10-21 *Comparison of Alternatives to Existing Noise Levels in 2006* *Change in Nighttime L_{eq} Noise Levels at 50 Feet from Local Roadways*										
Sensitive Noise Receiver Number	**Local Roadway**	**Description**	**EXISTING: 2006**	**NO ACTION: 2009**	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**NO ACTION: 2013**	**Alternative 5**
			L_{eq} (dBA)	**L_{eq} (dBA)**	**L_{eq} (dBA)**	**L_{eq} (dBA)**	**L_{eq} (dBA)**	**L_{eq} (dBA)**	**L_{eq} (dBA)**	**L_{eq} (dBA)**
1	East Bidwell Street	Along Albrighton Drive, residential area adjacent to south bound lanes in Folsom	--	0.5	0.5	0.5	0.5	0.5	0.8	0.8
2	Oak Avenue Parkway	Along Thorndike Way, residential area adjacent to north bound lanes in Folsom	--	0.9	1.3	1.3	1.3	1.3	1.3	1.7
3	Green Valley Road	Parking lot adjacent to residential area along Kipps Lane, north of Green Valley Road in El Dorado Hills, El Dorado County	--	1.1	1.2	1.5	1.7	1.7	1.4	1.7
4	East Natoma Road	End of Pomine Court, residential area along east bound lanes in Folsom	--	2.1	3.7	3.9	3.7	3.7	2.4	3.7
5	Folsom-Auburn Road	7550 Folsom-Auburn Road is in a residential area along the south bound lanes in Folsom	--	1.3	1.7	1.7	1.4	1.7	1.6	2.1
6	Blue Ravine Road	Blackberry Circle, residential area along north bound lanes in Folsom	--	0.3	0.5	0.5	0.5	0.5	0.7	0.7
7	Sierra College Boulevard	End of Kilmartin Court, residential street adjacent to south bound lanes in Rocklin, Placer County	--	0.3	1.0	1.1	1.0	1.0	0.6	1.3
8	Douglas Boulevard	4600-4699 Rolling Oaks Drive, residential area adjacent to west bound lanes in Granite Bay, Placer County	--	0.5	0.8	0.8	0.8	0.8	0.9	1.4
9	Eureka Road	1445 Eureka Road, multi-family residential development (225 units) on north bound lanes in Roseville, Placer County	--	0.4	0.4	0.4	0.4	0.4	0.7	0.7

Table 3.10-22
Comparison of Alternatives to Projected No Action Noise Levels in 2009 and 2013
Nighttime L_{eq} Noise Levels at 50 Feet from Local Roadways

Sensitive Noise Receiver Number	Local Roadway	Description	EXISTING: 2006	NO ACTION: 2009	Alternative 1	Alternative 2	Alternative 3	Alternative 4	NO ACTION: 2013	Alternative 5
			L_{eq} (dBA)	L_{eq} (dBA)	L_{eq} (dBA)	L_{eq} (dBA)	L_{eq} (dBA)	L_{eq} (dBA)	L_{eq} (dBA)	L_{eq} (dBA)
1	East Bidwell Street	Along Albrighton Drive, residential area adjacent to south bound lanes in Folsom	--	--	0.0	0.0	0.0	0.0	--	0.0
2	Oak Avenue Parkway	Along Thorndike Way, residential area adjacent to north bound lanes in Folsom	--	--	0.4	0.4	0.4	0.4	--	0.4
3	Green Valley Road	Parking lot adjacent to residential area along Kipps Lane, north of Green Valley Road in El Dorado Hills, El Dorado County	--	--	0.1	0.4	0.6	0.6	--	0.3
4	East Natoma Road	End of Pomine Court, residential area along east bound lanes in Folsom	--	--	1.6	1.8	1.6	1.6	--	1.3
5	Folsom-Auburn Road	7550 Folsom-Auburn Road is in a residential area along the south bound lanes in Folsom	--	--	0.4	0.4	0.1	0.4	--	0.5
6	Blue Ravine Road	Blackberry Circle, residential area along north bound lanes in Folsom	--	--	0.2	0.2	0.2	0.2	--	0.0
7	Sierra College Boulevard	End of Kilmartin Court, residential street adjacent to south bound lanes in Rocklin, Placer County	--	--	0.7	0.8	0.7	0.7	--	0.7
8	Douglas Boulevard	4600-4699 Rolling Oaks Drive, residential area adjacent to west bound lanes in Granite Bay, Placer County	--	--	0.3	0.3	0.3	0.3	--	0.5
9	Eureka Road	1445 Eureka Road, multi-family residential development (225 units) on north bound lanes in Roseville, Placer County	--	--	0.0	0.0	0.0	0.0	--	0.0

Table 3.10-23
Summary of 24 Hour Ldn Results
L_{dn} Noise Levels at 50 Feet from Local Roadways

Sensitive Noise Receiver Number	Local Roadway	Description	EXISTING: 2006	NO ACTION: 2009	Alternative 1	Alternative 2	Alternative 3	Alternative 4	NO ACTION: 2013	Alternative 5
			L_{dn} (dBA)	L_{dn} (dBA)	L_{dn} (dBA)	L_{dn} (dBA)	L_{dn} (dBA)	L_{dn} (dBA)	L_{dn} (dBA)	L_{dn} (dBA)
1	East Bidwell Street	Along Albrighton Drive, residential area adjacent to south bound lanes in Folsom	74.2	74.7	75.1	75.1	75.1	75.1	75.0	75.1
2	Oak Avenue Parkway	Along Thorndike Way, residential area adjacent to north bound lanes in Folsom	70.6	71.5	71.9	71.9	71.9	71.9	71.9	72.3
3	Green Valley Road	Parking lot adjacent to residential area along Kipps Lane, north of Green Valley Road in El Dorado Hills, El Dorado County	73.2	74.3	74.9	74.6	74.7	74.8	74.6	74.8
4	East Natoma Road	End of Pomine Court, residential area along east bound lanes in Folsom	68.4	70.5	71.9	72.0	71.8	71.8	70.8	71.7
5	Folsom-Auburn Road	7550 Folsom-Auburn Road is in a residential area along the south bound lanes in Folsom	74.2	75.5	75.7	75.7	75.5	75.7	75.8	76.1
6	Blue Ravine Road	Blackberry Circle, residential area along north bound lanes in Folsom	70.9	71.2	71.7	71.7	71.6	71.6	71.6	71.7
7	Sierra College Boulevard	End of Kilmartin Court, residential street adjacent to south bound lanes in Rocklin, Placer County	72.2	72.5	73.2	73.2	73.2	73.2	72.8	73.6
8	Douglas Boulevard	4600-4699 Rolling Oaks Drive, residential area adjacent to west bound lanes in Granite Bay, Placer County	74.1	74.6	74.8	74.9	74.8	74.8	75.0	75.4
9	Eureka Road	1445 Eureka Road, multi-family residential development (225 units) on north bound lanes in Roseville, Placer County	74.0	74.4	74.4	74.4	74.4	74.4	74.7	74.7

Table 3.10-24
Comparison of Alternatives to Existing Noise Levels in 2006
Change in L_{dn} Noise Levels at 50 Feet from Local Roadways

Sensitive Noise Receiver Number	Local Roadway	Description	EXISTING: 2006	NO ACTION: 2009	Alternative 1	Alternative 2	Alternative 3	Alternative 4	NO ACTION: 2013	Alternative 5
			L_{dn} (dBA)	L_{dn} (dBA)	L_{dn} (dBA)	L_{dn} (dBA)	L_{dn} (dBA)	L_{dn} (dBA)	L_{dn} (dBA)	L_{dn} (dBA)
1	East Bidwell Street	Along Albrighton Drive, residential area adjacent to south bound lanes in Folsom	--	0.5	1.0	1.0	0.9	0.9	0.8	0.9
2	Oak Avenue Parkway	Along Thorndike Way, residential area adjacent to north bound lanes in Folsom	--	1.0	1.3	1.3	1.3	1.3	1.3	1.7
3	Green Valley Road	Parking lot adjacent to residential area along Kipps Lane, north of Green Valley Road in El Dorado Hills, El Dorado County	--	1.1	1.7	1.4	1.5	1.6	1.4	1.6
4	East Natoma Road	End of Pomine Court, residential area along east bound lanes in Folsom	--	2.1	3.5	3.6	3.4	3.4	2.4	3.3
5	Folsom-Auburn Road	7550 Folsom-Auburn Road is in a residential area along the south bound lanes in Folsom	--	1.3	1.6	1.6	1.4	1.6	1.6	1.9
6	Blue Ravine Road	Blackberry Circle, residential area along north bound lanes in Folsom	--	0.3	0.8	0.8	0.7	0.7	0.7	0.8
7	Sierra College Boulevard	End of Kilmartin Court, residential street adjacent to south bound lanes in Rocklin, Placer County	--	0.3	1.0	1.0	1.0	1.0	0.6	1.4
8	Douglas Boulevard	4600-4699 Rolling Oaks Drive, residential area adjacent to west bound lanes in Granite Bay, Placer County	--	0.5	0.7	0.8	0.7	0.7	0.9	1.3
9	Eureka Road	1445 Eureka Road, multi-family residential development (225 units) on north bound lanes in Roseville, Placer County	--	0.4	0.4	0.4	0.4	0.4	0.7	0.7

Table 3.10-25
Comparison of Alternatives to Projected No Action Noise Levels in 2009 and 2013
L_{dn} Noise Levels at 50 Feet from Local Roadways

Sensitive Noise Receiver Number	Local Roadway	Description	EXISTING: 2006	NO ACTION: 2009	Alternative 1	Alternative 2	Alternative 3	Alternative 4	NO ACTION: 2013	Alternative 5
			L_{dn} (dBA)	L_{dn} (dBA)	L_{dn} (dBA)	L_{dn} (dBA)	L_{dn} (dBA)	L_{dn} (dBA)	L_{dn} (dBA)	L_{dn} (dBA)
1	East Bidwell Street	Along Albrighton Drive, residential area adjacent to south bound lanes in Folsom	--	--	0.4	0.4	0.4	0.4	--	0.1
2	Oak Avenue Parkway	Along Thorndike Way, residential area adjacent to north bound lanes in Folsom	--	--	0.4	0.4	0.4	0.4	--	0.4
3	Green Valley Road	Parking lot adjacent to residential area along Kipps Lane, north of Green Valley Road in El Dorado Hills, El Dorado County	--	--	0.6	0.3	0.4	0.5	--	0.2
4	East Natoma Road	End of Pomine Court, residential area along east bound lanes in Folsom	--	--	1.4	1.5	1.3	1.3	--	0.9
5	Folsom-Auburn Road	7550 Folsom-Auburn Road is in a residential area along the south bound lanes in Folsom	--	--	0.3	0.3	0.1	0.3	--	0.3
6	Blue Ravine Road	Blackberry Circle, residential area along north bound lanes in Folsom	--	--	0.5	0.5	0.4	0.4	--	0.1
7	Sierra College Boulevard	End of Kilmartin Court, residential street adjacent to south bound lanes in Rocklin, Placer County	--	--	0.6	0.7	0.7	0.6	--	0.7
8	Douglas Boulevard	4600-4699 Rolling Oaks Drive, residential area adjacent to west bound lanes in Granite Bay, Placer County	--	--	0.2	0.3	0.2	0.2	--	0.4
9	Eureka Road	1445 Eureka Road, multi-family residential development (225 units) on north bound lanes in Roseville, Placer County	--	--	0.0	0.1	0.0	0.0	--	0.0

Environmental Consequences/Environmental Impacts of Alternative 3
Truck and construction worker traffic would generate transportation noise impacts.

Tables 3.10-17 through 3.10-25 present a summary of the projected daytime and nighttime peak hour L_{eq} and L_{dn} noise levels for each noise-sensitive receptor and each action alternative, and compare them to the existing and No Action/No Project Alternative noise levels.

The transport of construction workers, materials, and equipment to the construction and borrow sites under Alternative 3 would generate daytime and nighttime peak hour L_{eq} and L_{dn} noise levels increases of less than 3 dBA when compared to existing noise levels at each Noise-Sensitive Receptor. These noise level increases would be well below the Caltrans noise policy of a 12-dBA allowable noise level increase over existing conditions. Similarly, Alternative 3 would generate less than a 2 dBA increase in peak hour L_{eq} and L_{dn} noise levels when compared to the No Action/No Project Alternative noise levels for 2009. These small incremental changes are well below the 5-dBA significance criterion threshold. The highest noise impact under Alternative 1 would occur at Noise-Sensitive Receptor 4 on East Natoma Street, which would be a 2.9 dBA increase over existing conditions.

This impact would be less than significant and would not require mitigation.

Environmental Consequences/Environmental Impacts of Alternative 4
Truck and construction worker traffic would generate transportation noise impacts.

Tables 3.10-17 through 3.10-25 present a summary of the projected daytime and nighttime peak hour L_{eq} and L_{dn} noise levels for each noise-sensitive receptor and each action alternative, and compare them to the existing and No Action/No Project Alternative noise levels.

The transport of construction workers, materials, and equipment to the construction and borrow sites under Alternative 4 would generate daytime and nighttime peak hour L_{eq} and L_{dn} noise levels increases of less than 3 dBA when compared to existing noise levels at each Noise-Sensitive Receptor. These noise level increases would be well below the Caltrans noise policy of a 12-dBA allowable noise level increase over existing conditions. Similarly, Alternative 4 would generate less than a 2 dBA increase in peak hour L_{eq} and L_{dn} noise levels when compared to the No Action/No Project Alternative noise levels for 2009. These small incremental changes are well below the 5-dBA significance criterion threshold. The highest noise impact under Alternative 1 would occur at Noise-Sensitive Receptor 4 on East Natoma Street, which would be a 2.9 dBA increase over existing conditions.

This impact would be less than significant and would not require mitigation.

Environmental Consequences/Environmental Impacts of Alternative 5
Truck and construction worker traffic would generate transportation noise impacts.

Tables 3.10-17 through 3.10-25 present a summary of the projected daytime and nighttime peak hour L_{eq} and L_{dn} noise levels for each noise-sensitive receptor and each action alternative, and compare them to the existing and No Action/No Project Alternative noise levels.

The transport of construction workers, materials, and equipment to the construction and borrow sites under Alternative 4 would generate daytime and nighttime peak hour L_{eq} and L_{dn} noise levels increases of less than 3 dBA when compared to existing noise levels at each Noise-Sensitive Receptor. These noise level increases would be well below the Caltrans noise policy of a 12-dBA allowable noise level increase over existing conditions. Similarly, Alternative 5 would generate less than a 2 dBA increase in peak hour L_{eq} and L_{dn} noise levels when compared to the No Action/No Project Alternative noise levels for 2013. These small incremental changes are well below the 5-dBA significance criterion threshold. The highest noise impact under Alternative 1 would occur at Noise-Sensitive Receptor 4 on East Natoma Street, which would be a 2.8 dBA increase over existing conditions.

This impact would be less than significant and would not require mitigation.

Comparison of Alternatives Transportation Noise

Projected daytime and nighttime peak hour L_{eq} and L_{dn} noise level increases for each alternative would be well below the Caltrans noise policy of a 12-dBA allowable noise level increase over existing conditions. Similarly, all five action alternatives would generate less than a 2-dBA increase in peak hour L_{eq} and L_{dn} noise levels when compared to the noise levels of the No Action/No Project Alternative. These small incremental changes are well below the 5 dBA significance criterion threshold.

3.10.2.3 Combined Construction and Traffic Noise Impacts

The potential for combined construction and traffic noise impacts would only occur at those noise-sensitive receptors located on the southern portion of Folsom Reservoir and in particular noise-sensitive receptors along Folsom-Auburn Road, East Natoma Street and adjacent to Green Valley Road. The background noise levels at these noise-sensitive receptors are dominated by traffic along adjacent roadways. On average, the construction employee vehicles and haul trucks would contribute less than a 4-dBA increase over existing and No Action/No Project Alternative daytime noise levels. Similarly, construction activities would generate less than 1 dBA increase over existing and No Action/No Project Alternative conditions during the daytime, and therefore, would not significantly increase noise impacts (i.e., less than a 5 dBA increase). During peak construction activities when construction would be occurring at its closest point to the noise-sensitive receptors would be when combined noise impact of both construction activities and traffic could elevate noise levels, but this would occur for only a short period of time during peak-hour traffic conditions.

During the nighttime, it is expected that construction activities would be the dominant noise source at East Natoma Street residential area because there would be less background and Folsom DS/FDR action related traffic and because the construction activities are closer to the noise-sensitive receptor then the other two locations. The projected L_{eq} noise level increase from construction activities would be approximately 2 to 4 dBA. At the Folsom-Auburn and Green Valley Road noise-sensitive receptors the existing and future No Action/No Project Alternative local traffic conditions would be the dominant noise source. Therefore, the increase in noise levels at these two locations associated with construction activities should be minor.

3.10.3 Mitigation Measures

The following measures will be implemented to reduce noise impacts. These measures will be incorporated into a Noise Control Plan (NCP) to address increased night time noise levels as a result of the Folsom DS/FDR action. The NCP will identify the procedures for predicting construction noise levels at the six noise-sensitive receptors prior to performing construction activities and describe the noise reduction measures required to meet the noise level limitations. The NCP will be based on construction activities planned and will be prepared by and bear the signature of the Acoustical Engineer. The noise mitigation measures will be implemented prior to any construction activity.

N-1: Appropriate level of sound attenuation will be utilized or constructed to meet local ordinances. Potential sound attenuation measures that could be considered include, but are not limited to, temporary sound barriers near the noise source, such as those considered in the impacts analysis relative to BACT for stationary/quasi-stationary equipment, or otherwise placed between the source(s) of construction noise and noise-sensitive receptors, as appropriate.

N-2: Contractor will be responsible for maintaining equipment to comply with noise standards (e.g., exhaust mufflers, acoustically attenuating shields, shrouds, or enclosures)

N-3: If necessary to meet local noise ordinances, enclosing above-ground conveyor systems in acoustically-treated enclosures

N-4: If necessary to meet local noise ordinances, lining or covering hoppers, conveyor transfer points, storage bins and chutes with sound-deadening material

N-5: Scheduling truck loading, unloading, and hauling operations so as to reduce nighttime noise impacts to less than noticeable levels

N-6: For nighttime or after-hour construction, the Contractor will obtain a permit from the City and County

N-7: Schedule restrictions on blasting will be implemented per City and County ordinances. Permits will be obtained if necessary or appropriate

N-8: Monitoring blasting vibration will be implemented as per Reclamation and Corps safety guidelines

N-9: Using blasting mats to cover blasts in order to minimize the possibility of fly rock

N-10: Examining of any properties, structures and conditions where complaints of damages have been filed will be performed within three weeks of rock excavation and blasting work

3.10.4 Cumulative Effects

The potential for cumulative noise impacts from other nearby projects occurring concurrently with the Folsom DS/FDR include the New Folsom Bridge project. Construction activities associated with Folsom DS/FDR would be similar to those anticipated for the New Folsom Bridge project. Similar construction activities include: earthwork, concrete work, blasting operations and truck hauling operations. Cumulative noise impacts would occur for residential areas along Folsom-Auburn Road south of Folsom Reservoir and along East Natoma Street in particular when the Auxiliary Spillway work and the New Folsom Bridge project would be under construction during the same period beginning 2008. Both projects include mitigation measures to minimize noise impacts and are anticipated to reduce the impacts to a less than significant level.

3.11 Cultural Resources

This section presents potential impacts to cultural resources from construction of the Folsom DS/FDR alternatives.

3.11.1 Affected Environment/Existing Conditions

3.11.1.1 Area of Analysis

This section is based on the results of a record search of documents at the North Central Information Center (California State University, Sacramento), documents supplied by Reclamation, and archaeological surveys conducted by Pacific Legacy (2006) and URS (2006). The results of the records review and archaeological surveys document the numbers and types of archaeological and historical resources recorded within the Folsom DS/FDR area of analysis.

The features in the area of analysis are listed beginning in the vicinity of Granite Bay and moving counter clockwise around Folsom Reservoir (see Figure 2-1). Following this order, the features include: Dike 1 Contractor Staging Area; Dikes 1, 2, and 3; Beal's / Granite Bay Borrow Site; Dike 4 Contractor Staging Area; Dike 4; Dike 5; Dike 5 Contractor Staging Area 1; Dike 5 Contractor Staging Area 2; Beal's / Dam Borrow Site and Right Wing Dam Haul Area; Dike 6; Dike 6 Contractor Staging Area; Right Wing Dam; Right Wing Dam Contractor Staging Area; Below Left Wing Dam; Dike 7; Dike 7 Contractor Staging Area; Dike 8; Dike 8 / MIAD Borrow Site and Left Wing Dam Haul Area; MIAD Borrow Site 2 (D2); MIAD Borrow Site 1 (D1); MIAD; and, Brown's Ravine Borrow Site. Additionally, the Main Concrete Dam, raised retention area, and new embankments/flood easements were included within the area of analysis.

3.11.1.2 Regulatory Setting

The National Historic Preservation Act (NHPA) of 1966, as amended through 1992, establishes a program for the preservation of historic properties throughout the nation. The State Historic Preservation Officer (SHPO) administers the national historic preservation program at the state level, reviews National Register of Historic Places (NRHP) nominations, maintains data on historic properties that have been identified but not yet nominated, and provides consultation for federal agencies during NHPA Section 106 review.

Reclamation, as lead Federal agency, and the Corps, as a cooperating agency, are responsible for compliance with Section 106 of the NRHP and its implementing regulations found at 36 CFR Part 800. Reclamation and the Corps have to take in account the effects of its undertaking on historic properties as defined in 36 CFR Part 800.16 (l). The criteria of determining historic properties are found at 36 CFR Part 800.4. When the effects of an undertaking are not fully known or the project extends over a period of years, Reclamation and the Corps may elect to follow an alternative process following procedures found in 36 CFR Part 800.14 which allows for the development of a programmatic agreement between consulting parties.

Under the National Environmental Policy Act (NEPA) (42 USC) Sections 4321-4327, Reclamation and the Corps are required to consider potential environmental impacts and appropriate mitigation measures for projects with Federal involvement.

A complete list of pertinent Federal laws, regulations and guidance that direct Reclamation cultural resources policies and responsibilities is found in Reclamation's Directives and Standards Manual LND 02-01 for Cultural Resource Management.

Project undertakings by Reclamation must follow directives and guidelines found in Reclamation Manuals LND P01, LND 02-01 and LND 07-01. LND P01 establishes policy and authority for cultural resource identification, evaluation and management of cultural resources. LND 02-01 provides directives and standards and clarifies the role of Reclamation regarding implementation of its cultural resources management responsibilities. LND 10-01 provides procedures for inadvertent discoveries for cultural items which are under the authority of the Native American Graves Protection and Repatriation Act (NAGPRA).

Project undertakings by the Corps must follow guidelines found in the Planning Guidance Notebook. ER 1105-2-100 provides guidance for consideration of cultural resources in Civil Works planning studies, along with compliance requirements relevant to the identification, evaluation, and treatment of these cultural resources.

Assessment of effects focuses on properties listed or eligible for listing on the NRHP, properties known as historic properties, or sites designated as either historical resources or "unique archeological resources" as per the California Environmental Quality Act (CEQA) Guidelines. [1] Under CEQA, the evaluation of impacts on historical resources parallels federal law. Properties protected under CEQA include those eligible for listing or listed on the California Register of Historical Resources (CRHR) or those properties determined "unique archaeological resources." It should be noted that a property found not eligible for listing on the NRHP may be found to have historical significance for listing on the CRHR.

The CEQA Guidelines state that if a project follows the Secretary of Interior's Standards for the Treatment of Historic Properties, the impacts are considered "mitigated to a level of less than a significant impact" (CEQA Guidelines 15064.5[b][3]). Section 106 of the NHPA and its implementing regulations (36 CFR Part 800) require that the Advisory Council on Historic Preservation (ACHP),

[1] As defined either in 36 Code of Federal Regulations (CFR) 800.16(l) for federal actions or in the State CEQA Public Resources Code (PRC) (21084.1 and 21083.2) and the CEQA Guidelines (15064.5[a])

SHPO, and the interested public, including Native Americans, be provided an opportunity to comment on the effects that the proposed action may have on historic properties.

3.11.1.3 Environmental Setting

Ethnographic Overview

The area of analysis is located within the territorial boundaries of the ethnographic Nisenan. The Nisenan, often referred to as the Southern Maidu in anthropological literature, are classified as the southern linguistic group of the Maidu tribe, and together with Maidu and Konkow form a subgroup of the California Penutian linguistic family (Wilson and Towne 1978). The Nisenan linguistic group is further subdivided based on dialect into Northern Hill Nisenan, inhabiting the Yuba River drainage; Southern Hill Nisenan, living along the American River; and Valley Nisenan, occupying a portion of the Sacramento River Valley between the American and Feather Rivers (Beals 1933; Kroeber 1925, 1929).

Prior to Euroamerican contact, Nisenan territory extended west into the Sacramento Valley to encompass the lower Feather River drainage, north to include the Yuba River watershed, south comprising the whole of the Bear and American River drainages and the upper reaches of the Cosumnes River, and east to the crest of the Sierra Nevada (Wilson and Towne 1978).

The information in this section is derived from a variety of sources, including: Bennyhoff (1977); Beals (1933); Gifford (1927); Kroeber (1925, 1929); Littlejohn (1928); and, Wilson and Towne (1978). Additional resources on Nisenan and Miwok ethnography include: Faye (1923); Levy (1978); Powers (1976); and, Schulz and Ritter (1972). The following discussion is a brief synthesis focusing on selected traits of Valley Nisenan ethnography that may manifest archaeologically.

Habitation Patterns

The Nisenan were organized by tribelet, each tribelet being composed of several large, semi-autonomous villages that accepted the leadership of the headman of a specific village. Headmen acted as advisors for major decision making, communal hunts, and ceremonies. Wilson and Towne (1978) identify three Valley Nisenan tribelet centers in the Sacramento Valley: at the mouth of the American River (present-day Sacramento); at the mouth of the Bear River; and, at the confluence of the Yuba and Feather rivers near present-day Marysville.

Nisenan villages varied greatly in size, ranging from three to seven houses up to 40 to 50 houses, with the largest valley villages inhabited by more than 500 people (Littlejohn 1928). Villages in the lower valleys tended to be located along low rises and mounds adjacent to streams and rivers.

Nisenan built structures, including semi-permanent houses, which were generally conical, measuring 10 to 15 feet in diameter and covered with tule mats, grasses, or earth. Smaller, temporary wikiup-like shelters, made of upright poles and cloaked in brush, were used in the warm seasons while hunting and gathering (Curtis 1924; Kroeber 1925). Other structures commonly associated with village sites include semi-subterranean dance houses, acorn granaries, and sweathouses (Wilson and Towne 1978). Each Nisenan tribelet controlled the natural resources within a bounded tract of land (Littlejohn 1928). These boundaries were often indicated by piles of stones (Littlejohn 1928). Beals (1933) estimated that Nisenan tribelet territory averaged approximately 100 square miles.

Subsistence

The basic subsistence strategy of the Nisenan was seasonally mobile hunting and gathering. Acorns from the California Black Oak, the primary staple, were gathered in the fall and stored in granaries for use during the rest of the year. Other plant resources included seeds, buckeye, wild onion, wild sweet potato, Indian potato, wild garlic, wild carrot, many varieties of berries and fruit, grasses, herbs, and rushes. During the warmer months, people moved to mountainous areas to hunt and collect food resources particular to higher elevations.

Communal hunting drives were undertaken to obtain deer, quail, rabbits, and grasshoppers. Game was prepared by roasting, baking, or drying. Mountain lions and bobcats were hunted for their skins, as well as their meat, and bears were hunted ceremonially in the winter when their hides were at their best condition (Wilson and Towne 1978). Runs of salmon in the spring and fall provided a regular supply of fish, while other fish, such as suckers, pike, whitefish, and trout, were caught with hooks, harpoons, nets, weirs, snares, fish traps, or by using fish poisons, such as soaproot. Birds were trapped with nooses or large nets, and shot with bow and arrow (Wilson and Towne 1978).

Many wild plants may also have been “managed” by prescribed burning that removed underbrush and encouraged growth of edible grasses, seed producing plants, and other useful plant resources, such as basketry materials (Blackburn and Anderson 1993). The use of fire for environmental modification and as an aid in hunting is frequently mentioned in ethnographic literature relating to the Nisenan. Littlejohn (1928) noted that the lower foothills in the valley oak zone were thickly covered with vegetation that was annually burned by the Nisenan to remove and limit its growth while encouraging the growth of oaks and the harvest of acorns. The annual fires destroyed seedlings, but did not harm established oak trees. Beals (1933) also noted that the Nisenan regularly burned the land, primarily for the purpose of driving game.

Technology and Trade

Stone technology included flaked stone knives, projectile points, and other tools made from obsidian, basalt, and silicates. Ground stone tools included club heads, pipes, charms, and mortars and pestles made from local coarser-grained rocks (Beals 1933; Wilson and Towne 1978). Shells and beads manufactured from bone, shell, and minerals, such as magnesite, were used for ornamentation. Wood and bone were used for a variety of tools and weapons, including bows, arrow shafts and points, fishhooks, looped stirring sticks, flat-bladed mush paddles, pipes, and hide preparation tools. Cordage was made from plant material and was used to construct fishing nets as well as braided and twined tumplines.

Baskets were used for a variety of tasks, including storing, cooking, serving, and processing foods. Basketry items consisted of burden baskets, traps, cradles, hats, cages, seed beaters, and winnowing trays. Basket manufacturing techniques included both twining and coiling, and baskets were decorated with a variety of designs and materials. Other woven artifacts included tule matting and netting made of milkweed, sage fibers, or wild hemp (Hill 1972). In the Sacramento Valley, the Nisenan used tule balsa rafts and log canoes (Kroeber 1929) for fishing and used the boats extensively for travel among the major river villages.

Trade and exchange networks were established with neighboring groups for food and other items, both practical and ornamental, which were not available within Nisenan territory. Clamshell disk beads, used as a mode of currency, were acquired from Patwin and other outside sources. Obsidian was highly valued and imported. Nisenan informants stated that obsidian only came from a place to the north, outside of Nisenan territory (Littlejohn 1928). Abundant archaeological evidence suggests that the vast majority of obsidian in southern Nisenan territory is derived from either Bodie Hills to the east, or Napa Valley to the west. Nisenan commodities traded to neighboring groups included salmon, deer, and acorns (Davis 1961).

Intergroup Relations

Nisenan and Miwok peoples frequently interacted as trading partners, at ceremonial gatherings, and in armed conflict primarily due to perceived territorial encroachment. In fact, the ethnographic literature, particularly in reference to the Nisenan, reports rather regular hostilities between Hill and Valley Nisenan, and Nisenan and Sierra Miwok (cf., Littlejohn 1928; Beals 1933). Most interactions between the two ethnographic groups, however, appear to have been civil, friendly in nature, and characterized by considerable intermarriage.

Ethnohistory

Initial contact with Euroamericans in the eighteenth century had little effect on the Nisenan. The earliest contacts were Spanish exploratory expeditions in the Central Valley led by José Canizares and Gabriel Moraga, followed in the 1820s by American and Hudson’s Bay Company trappers. Introduced diseases, against which they had no natural immunities, were the single greatest cause of death among California Indians after Euroamerican contact. The great epidemic of 1833 (probably malaria) devastated the Valley Nisenan population by as much as 75 percent, in some instances, wiping out entire villages.

Captain John Sutter settled in Nisenan territory in 1839. Word of James Marshall's 1848 discovery of gold near the Nisenan settlement of Culloma (Coloma) soon triggered an influx of thousands of fortune seekers in Hill Nisenan territory (Wilson and Towne 1978). From the 1870s until the 1890s, Nisenan culture experienced a resurgence with the Ghost Dance revival. Indian "rancherias" were established by the federal government in the Maidu area between 1906 and 1937. Today, the majority of the estimated 2,500 Maiduan peoples (including persons descended from Nisenan, Konkow, and Maidu groups) live within the traditional territory inhabited at historic contact by their ancestors.

Historical Overview

Exploration into the interior of present-day California began in 1808 with an expedition led by the Spanish explorer Gabriel Moraga, who sought potential sites for new missions (Thompson and West 1880). The British, working for the Hudson's Bay Company based out of Fort Vancouver on the Columbia River, entered the region from the north via the Siskiyou Trail in the late 1800s (Dillon 1975). The Americans, led by Jedidiah Strong Smith in 1826, followed an overland route (Hurtado 1988). Smith led a small band of men across the Sacramento Valley in 1827, searching for a pass across the Sierra Nevada, and camping at a site that is now part of the City of Folsom.

In the 1840s, fur trappers were followed by military expeditions, which were charged with exploring the region in advance of American westward expansion. A detachment of the Wilkes expedition, led by Lieutenant George Foster Emmons, traveled from the Columbia River to Sacramento in 1841. John Charles Frémont led the Army Corps of Topographical Engineers into present-day California twice in the 1840s on two separate expeditions.

The area surrounding the Folsom Reservoir was first settled by Euroamericans following the discovery of gold at Coloma in 1848. This discovery led to an influx of miners, who sought rich placer deposits along the American River and its tributaries. As new deposits were discovered, towns and camps were established near the discoveries and quickly developed into communities to provide for the needs of the expanding population. These communities included Mormon Island, Goose Flat, Alabama Bar, Sailor's Bar, Negro Hill, Salmon Falls, McDowell Hill, Beal's Bar, Condemned Bar, Doton's Bar, Long Bar, Horseshoe Bar, and Rattlesnake Bar (Hoover et al. 1990; Peak and Associates 1990; Waechter and Mikesell 1994).

Mormon Island, site of California's second important gold discovery, was one of the most prominent of these early communities. The camp was originally established on a gravel bar at the confluence of the North and South Forks of the American River. The settlement was located on a branch of the Coloma Road, the first route into the region that connected Sutter's Fort in Sacramento to his sawmill in Coloma. "By 1853, the camp had some 2,500 inhabitants and had three dry good stores, five general merchandise stores, two blacksmith's shops, a bakery, saloons, hotels, schools, a post office, and express offices for both Wells Fargo & Company and Adams & Company" (Waechter and Mikesell 1994). As with the majority of the communities formed by miners, Mormon Island went into decline as nearby gold deposits were exhausted. By the 1880s, the population had dwindled to 20 and no residents were present when the town site was inundated by the Folsom Reservoir.

As hard rock and hydraulic mining replaced placer mining in the 1850s, the need for large amounts of water led to the construction of numerous dams, ditches, and flumes throughout the region. The largest and most prominent of these endeavors were undertaken by two joint stock companies: the Natoma Water and Mining Company; and, the American River Ditch Company. Although several smaller companies, such as the Salmon Falls Water and Mining Company who constructed the Clark-Eastman Ditch and the Negro Hill Ditch Company who constructed the Negro Hill Ditch, were involved in the creation of water conveyance systems in the region, these operations were overshadowed by the large scale projects of the Natoma Water and Mining Company and the later American River Ditch Company.

First founded by A.P. Catlin in 1851 and later acquired by H.G. Livermore in 1862, the Natoma Water and Mining Company completed its first water conveyance from near Salmon Falls on the South Fork of the American River to Granite City (Folsom) in 1854. That same year, several shareholders organized the American River Ditch Company to complete a similar project along the North Fork of the American River. Following the company's acquisition by Livermore in 1862, the company became increasingly interested in water development for industry as well as for logging. The Natoma Water and Mining Company spawned two additional entities under Livermore, the Folsom Water and Power Company, which promoted water-powered industry, and the American River Land and Lumber Company, which controlled the timber-related activities (Waechter and Mikesell 1994). As part of this move to waterpower and logging, the original Folsom Dam was completed in 1893.

Although mining continued in importance through the second half of the nineteenth century, the depletion of gold deposits led to an increased investment in other activities, most significantly, agriculture. Initially developed for mining, the series of ditches and flumes throughout the Folsom DS/FDR area provided the necessary water to provide for the agricultural productivity of the region. In response to the switch from mining to agriculture, the Natoma Water and Mining Company as well as the American River Ditch Company organized several new companies, including the Natoma Vineyards Company and the North Fork Ditch Company. In the twentieth century, through a series of reorganizations and sales, the Natoma Water and Mining Company became simply the Natoma Company while the American River Ditch Company became the San Juan Suburban Water District (Waechter and Mikesell 1994).

As the twentieth century progressed, agriculture replaced mining as the dominant industry in the region. The ample supply of water and the rich soils in the area provided for the cultivation of grain, hay, wine grapes, oranges, and other fruits (Peak and Associates 1990). Although a small community existed at Salmon Falls, none of the numerous mining communities that existed in the area in the nineteenth century remained. By the early 1950s, when the federal government acquired the land for the construction of Folsom Dam, few people inhabited the Folsom DS/FDR area.

The Folsom Dam was constructed in 1955 and consists of a concrete dam flanked by earth wing dams and dikes with a total length of approximately nine miles. The reservoir created by the dam has approximately 10,000 surface acres of water when full and approximately 75 miles of shoreline. The reservoir extends approximately 15 miles up the north fork and 11 miles up the south fork of the American River. The Folsom Dam is part of the Central Valley Project, which includes a vast network of dams, reservoirs, canals, power plants, and pumping plants throughout California’s Central Valley.

Archaeological Overview

The Folsom DS/FDR area of analysis lies within the eastern Sacramento Valley and western Sierra Nevada slope regions. Archaeologists have developed distinct cultural histories for each of these regions.

Sacramento Valley

Archaeological evidence suggests that the Sacramento Valley was initially settled in the terminal Pleistocene or early Holocene. Isolated finds of fluted projectile points are perhaps the best evidence for occupation of northern California between 12,000 and 10,000 Before Present (BP), although firm evidence has been elusive. Archaeological sites dated to the latter half of the Holocene have been documented in much greater numbers and detail in the Sacramento / San Joaquin Delta region than the preceding periods.

The first documented archaeological excavations were those of amateur archaeologists J.A. Barr, H.C. Meredith, and E.J. Dawson, who conducted archaeological investigations in the Central Valley of California between 1893 and 1901. Barr’s excavations, which focused on mounds near Stockton, were later synthesized and published by H.C. Meredith (Meredith 1900). The first diachronic overview of the Northern San Joaquin Valley was published by E.J. Dawson and

W.E. Schenck, who presented the findings of investigations of more than 90 archaeological sites in the region (Schenck and Dawson 1929).

Numerous investigations of the Central Valley were undertaken in the 1930s by Sacramento Junior College. Initial research focused on the mounds above the floodplain of the Cosumnes River (Lillard et al. 1939; Lillard and Purves 1936). Investigations of the Augustine (CA-SAC-127), Booth (CA-SAC-126), and Windmiller (CA-SAC-107) Mounds yielded a variety of features and artifacts including burials, shell beads, charmstones, and ornaments. Artifact typologies, burial patterns, and the “condition of human bones” (Moratto 1984) were used to distinguish cultural strata. Based on their findings, Lillard and Purves (1936) developed a three-stage cultural sequence comprised of “cultural levels:” *Early, Intermediate, and Late*.

This sequence was later elaborated by Lillard, Heizer, and Fenenga (1939). A *Delta Sequence*, composed of periods, was proposed by Lillard et al. (1939). The three periods, *Early, Transitional,* and *Late,* were distinguished based on mortuary patterns and ornamental artifacts. Beardsley (1948, 1954), Heizer (1949), and Ragir (1972) elaborated the *Delta Sequence*, which eventually evolved into the Central California Taxonomic System (CCTS). The CCTS proposed three cultural horizons: *Early, Middle,* and *Late*.

- The Early Horizon is characterized by ventrally extended, westward-oriented burials; highly mineralized skeletal material; perforated charmstones; quartz crystals in burials; *Olivella* and abalone beads and ornaments; large and heavy stemmed and leaf-shaped, flaked-stone projectile points commonly made of non-obsidian materials; and, rare milling equipment. Sites tended to be very compact and away from present water resources.

- The Middle Horizon is characterized by tightly flexed burials in varying orientation, some with powdered red ocher; imbedded projectile points in many of the burials (Beardsley 1948); diagnostic *Olivella* and *Haliotis* beads and ornaments; perforated canid teeth and bear claws; distinctively shaped charmstones lacking perforation; cobble mortars and chisel-ended pestles, seen by some as evidence of wooden mortars; an elaborate bone industry; large foliate and lanceolate concave base projectile points made of obsidian and other lithic materials; and, baked clay objects.

- The Late Horizon is characterized by various types of primary burial and cremations as well as pre-interment burning of funerary articles; light and friable skeletal material; animals skeletons with burials; an abundance of baked clay artifacts; distinctive shell and stone beads and ornaments; flanged tubular smoking pipes; small side-notched arrow points commonly made of obsidian;

shaped flat-bottom mortars and cylindrical pestles; and, incised bird bone tubes. Sites are located near present water sources.

The CCTS has largely fallen out of favor with researchers because it does not reflect the great diversity in the archaeological record of central California. Smaller spheres of culture were largely ignored by the CCTS due to its bias towards material remains (Waechter and Mikesell 1994).

Fredrickson (1972, 1973) addressed many of the shortcomings of the CCTS when he proposed the use of *patterns,* modified by distinctive *aspects* and *phases,* which are not confined by temporal positions and serve to outline a general way of life. Such patterns are characterized by particular technological skills, economic forms, exchange networks, and ceremonial practices. Fredrickson identifies six such patterns in central California, and places them in a chronological framework. Three of these patterns are relevant to the prehistory of the Central Valley.

- The Windmiller Pattern (4,500-3,000 BP) encompasses components ascribed to the Early Horizon of the CCTS, and is characterized by a mixed economy that includes both game and plant exploitation. The Windmiller Pattern suggests a seasonal adaptation of winter habitation sites in the valley and summer camps in the foothills (Fredrickson 1973).

- The Berkeley Pattern (3,500-1,500 BP) corresponds with the Middle Horizon, and suggests a shift in milling equipment to a mortar and pestle technology and increased dependence on acorns. Projectile points and atlatls suggest that hunting game remained an important part of subsistence (Fredrickson 1973).

- The Augustine Pattern (1,500 BP - Contact) is widespread in central California, and represents a mixture of traits retained from the from the Berkeley Pattern as well as a number of introduced traits, including bow and arrow technology as reflected in Gunther Barbed and other small projectile points.

Sierra Nevada

Sierra Nevada prehistoric archaeological deposits were first found during the Gold Rush era. Deposits consisting of mortars, charmstones, pestles, and human remains were among the cultural resources discovered in the 1850s and 1860s (Moratto 1984). In the mid nineteenth century, mining led to the discovery of prehistoric sites. In the later nineteenth and twentieth centuries, dam construction within the Sierra also caused the discovery of numerous archaeological sites.

In 1952, a total of 26 northern Sierra sites were recorded by University of California Berkeley archaeologists, T. Bolt, A.B. Elsasser, and R.F. Heizer. Two archaeological cultures were identified from this survey, the Martis Complex (centered in the Martis Valley) and the Kings Beach Complex (Lake Tahoe area). The Martis Complex was unusual for its use of basalt rather than obsidian for tool making. Dates from the tools suggest the complex is dated from 4000-2000 years BC to AD 500 (Moratto 1984).

The Kings Beach Complex (AD 500-1800) was distinguished by flaked obsidian and silicate implements, small projectiles points, the bow and arrow, and occasional scrapers and bedrock mortars (Moratto 1984). Two archaeologists, W.A. Davis and R. Elston, continued to piece together the connection between these two complexes and expanded testing. Jacks Lake and Spooner Lake Summit were two of the primary sites they used to develop a chronology that spanned about 7000 years (Moratto 1984).

In 1970, Ritter compared various Lake Oroville area sites to the Martis Valley and Kings Beach sites to help develop a chronology for the Lake Oroville area. The Lake Oroville chronology consists of the Mesilla, Bidwell, Sweetwater, and Oroville Complexes, as well as the ethnographic Maidu era, and spans a period of about 3000 years (Moratto 1984).

The Mesilla Complex was identified as a sporadic occupation of the foothills. People who created this complex hunted with atlatls and processed their food in mortar bowls and on millingstones. Shell beads, charmstones, and bone pins show a close relationship between the Mesilla Complex and the Sacramento Valley cultures between 1000 BC and AD 1 (Moratto 1984).

After the Mesilla Complex occupation, the cultural sequence continued with the Bidwell Complex from AD 1 to AD 800. The Bidwell Complex people lived in permanent villages, hunted deer and smaller game with slate and basalt projectile points, fished, ground acorns on millingstones, and collected fresh water mussels. A new cultural element for this complex was the manufacture of steatite cooking vessels (Moratto 1984).

The Sweetwater Complex (AD 800-1500) is defined by new cultural items and forms, which include: particular shell ornament types; wider use of steatite for cups, bowls and smoking pipes; and, small, lighter projectile points that indicate the use of bows and arrows for hunting (Moratto 1984).

The Oroville Complex is significant because it represents the protohistoric Nisenan (AD 1500 to 1833) (Moratto 1984). The Nisenan culture was characterized by bedrock mortars for acorn processing, dance halls, and burials placed in tightly flexed positions on their sides marked with stone cairns. The Lake Oroville Chronology sequence ended with the historic era and abandonment of traditional settlements in the nineteenth century (Moratto 1984).

Previous Research and Identified Cultural Resources
Folsom DS/FDR features were listed beginning in the vicinity of Granite Bay and moving counter clockwise around Folsom Reservoir (see Figure 2-1). Additionally, the Main Concrete Dam, raised retention area, and new embankments/flood easements were included within the area of analysis.

Dike 1 Contractor Staging Area
This area was surveyed by Pacific Legacy (2006). The entire area was walked in transects of no greater than ten meters. The entire surface was inspected. No cultural resources were located in this area.

Dikes 1, 2, and 3
This area was surveyed by Pacific Legacy (2006). The entire area was walked in transects of no greater than ten meters. The entire surface was inspected. No cultural resources were located in this area.

Reclamation is in the process of completing a National Register nomination for the Central Valley Project (CVP). This nomination concludes that the dikes are non-contributing elements to the CVP Multiple Property Nomination (MPN). This determination will be reviewed by the Keeper of the National Register.

Beal's / Granite Bay Borrow Site
The portion of this area located to the north of Mooney Ridge was surveyed by Far Western Anthropological Research Group (1992). The portion of this area located along and to the south of Mooney Ridge was surveyed by URS (2006).

The Far Western survey resulted in the discovery of 24 cultural resources. These cultural resources are listed in Table 3.11-1. The URS survey resulted in the discovery of four new sites, two new isolates, and the re-recording or re-visiting of four previously known sites. These cultural resources are listed in Table 3.11-2. An additional four sites were identified in the records search provided to Pacific Legacy by Reclamation. These cultural resources are listed in Table 3.11-3 and are located in the area south of Mooney Ridge.

Dike 4 Contractor Staging Area
This area was surveyed by Pacific Legacy (2006). The entire area was walked in transects of no greater than ten meters. Accessible/visible portions of the surface area were inspected. No cultural resources were located in this area.

Dike 4
This area was surveyed by Pacific Legacy (2006). The entire area was walked in transects of no greater than ten meters. The entire surface was inspected. No cultural resources were located in this area.

Table 3.11-1 ***Cultural Resources within Beal's /Granite Bay Borrow Site (Far Western 1992)***				
Trinomial / Temporary No.	***Description***	***Date Recorded***	***Elevation (ft)***	***Management Recommendation (Far Western 1992)***
CA-PLA-158/ 255	PREHISTORIC: Groundstone and Lithics (Potential Subsurface)	1975	435-460	Auger and test excavations
CA-PLA-248	PREHISTORIC: Groundstone and Lithics (Potential Subsurface)	1977	420	Surface collect, record, analyze, and auger to test midden potential
CA-PLA-254	PREHISTORIC: Groundstone and Lithics (Potential Subsurface)	1977	380	Auger and test excavations
CA-PLA-746	PREHISTORIC: Lithics	1992	410	Apply Sparse Lithic Scatter Data Acquisition Program (Jackson et al. 1988)
CA-PLA-747	PREHISTORIC: Groundstone and Lithics	1992	410	Surface collect, record, analyze, and auger to test midden potential
CA-PLA-748	PREHISTORIC: Lithics	1992	400	Apply Sparse Lithic Scatter Data Acquisition Program (Jackson et al. 1988)
CA-PLA-749/H	PREHISTORIC AND HISTORIC: Lithics and Historic Debris	1992	420	Surface collect, record, analyze, and auger to test midden potential
CA-PLA-750H	HISTORIC: Historic Debris	1992	410	Data potential exhausted by recordation
CA-PLA-751	PREHISTORIC: Lithics	1992	425	Surface collect, record, analyze, and auger to test midden potential
CA-PLA-752	PREHISTORIC: Lithics	1992	420	Apply Sparse Lithic Scatter Data Acquisition Program (Jackson et al. 1988)
CA-PLA-753	PREHISTORIC: Lithics	1992	415	Apply Sparse Lithic Scatter Data Acquisition Program (Jackson et al. 1988)
CA-PLA-754	PREHISTORIC: Groundstone and Lithics	1992	405	Surface collect, record, analyze, and auger to test midden potential
CA-PLA-755	PREHISTORIC: Lithics	1992	418	Apply Sparse Lithic Scatter Data Acquisition Program (Jackson et al. 1988)
CA-PLA-756	PREHISTORIC: Lithics	1992	420	Apply Sparse Lithic Scatter Data Acquisition Program (Jackson et al. 1988)
CA-PLA-759	PREHISTORIC: Groundstone and Lithics (Potential Subsurface)	1992	440	Surface collect, record, analyze, and auger to test midden potential
CA-PLA-760	PREHISTORIC: Lithics (Potential Subsurface)	1992	405	Apply Sparse Lithic Scatter Data Acquisition Program (Jackson et al. 1988)
CA-PLA-761	PREHISTORIC: Groundstone and Lithics	1992	395	Surface collect, record, analyze, and auger to test midden potential
CA-PLA-762	PREHISTORIC: Groundstone and Lithics	1992	425	Surface collect, record, analyze, and auger to test midden potential
CA-PLA-763	PREHISTORIC: Groundstone and Lithics	1992	440	Apply Sparse Lithic Scatter Data Acquisition Program (Jackson et al. 1988)
CA-PLA-764	PREHISTORIC: Groundstone and Lithics	1992	430	Surface collect, record, analyze, and auger to test midden potential
CA-PLA-765	PREHISTORIC: Groundstone and Lithics	1992	425	Surface collect, record, analyze, and auger to test midden potential
CA-PLA-768	PREHISTORIC: Groundstone and Lithics	1992	405	Surface collect, record, analyze, and auger to test midden potential
CA-PLA-769/H	HISTORIC: Historic Debris	1992	480	Auger and test excavations
FD-23/90-1	PREHISTORIC: Groundstone and Lithics	1991	440	Surface collect, record, analyze, and auger to test midden potential

Table 3.11-2 Cultural Resources Within Beal's /Granite Bay Borrow Site (URS 2006)				
Trinomial / Temporary No.	***Description***	***Date Recorded***	***Elevation (ft)***	***Management Recommendation***
CA-PLA-243	PREHISTORIC: Groundstone and Lithics (Potential Subsurface)	1977	424	Not relocated during survey
CA-PLA-244	PREHISTORIC: Groundstone and Lithics	1977	426	None provided
CA-PLA-247H	HISTORIC: Historic Structure and Historic Debris	Unknown	390	Not relocated during survey
CA-PLA-520H	HISTORIC: Large Earthen Ditch	1992	460	Not relocated during survey
Site M-1	PREHISTORIC: Bedrock Mortars and Lithics	2005	420	None provided
Site M-2	PREHISTORIC: Groundstone and Lithics	2005	420	None provided
Site M-3	PREHISTORIC: Groundstone and Lithics	2005	420	None provided
Site M-4	PREHISTORIC: Groundstone and Lithics	2005	420	None provided
Isolate I-18	PREHISTORIC: Groundstone Fragment	2005	435	None provided
Isolate I-19	PREHISTORIC: Portable Anvil Stone	2005	460	None provided

Table 3.11-3 Cultural Resources Within Beal's /Granite Bay Borrow Site (North Central Information Center (NCIC) 2005)				
Trinomial / Temporary No.	***Description***	***Date Recorded***	***Elevation (ft)***	***Management Recommendation***
CA-PLA-246	PREHISTORIC: Groundstone and Lithics (Potential Subsurface)	1977	390	None provided
CA-PLA-249	PREHISTORIC: Groundstone and Lithics (Potential Subsurface)	1977	415	None provided
CA-PLA-250H	HISTORIC: Concrete Structure near Flume	Unknown	400	None provided
CA-PLA-251H	HISTORIC: Historic Dump	Unknown	400	None provided

Reclamation is in the process of completing a National Register nomination for the CVP. This nomination concludes that the dikes are non-contributing elements to the

CVP MPN. This determination will be reviewed by the Keeper of the National Register.

Dike 5 Contractor Staging Area 1

Portions of this area were surveyed by Welch (2005). The entire area was surveyed by Pacific Legacy (2006). The entire area was walked in transects of no greater than ten meters. The entire surface was inspected. Two cultural resources were recorded by Welch (2005) and re-recorded by Pacific Legacy (2006). These cultural resources are listed in Table 3.11-4.

Table 3.11-4

Cultural Resources Within Dike 5 Contractor Staging Area 1 (Pacific Legacy 2006)

Trinomial / Temporary No.	Description	Date Recorded	Elevation (ft)	Management Recommendation
Dike 5-1	HISTORIC: Concrete-lined rectangular pit with no associated artifacts or features	2005	400	Flag and avoid. Document and evaluate through historical research and test excavation.
Dike 5-2	HISTORIC: Water conveyance system consisting of earthen ditch, concrete intake, and six concrete supports for an approximately 24-inch pipe, which no longer is extant	2005	400	Flag and avoid. Document and evaluate through historical research.

Dike 5

This area was surveyed by Pacific Legacy (2006). The entire area was walked in transects of no greater than ten meters. The entire surface was inspected. No cultural resources were located in this area.

Reclamation is in the process of completing a National Register nomination for the CVP. This nomination concludes that the dikes are non-contributing elements to the CVP MPN. This determination will be reviewed by the Keeper of the National Register.

Dike 5 Contractor Staging Area 2

This area was surveyed by Pacific Legacy (2006). The entire area was walked in transects of no greater than ten meters. The entire surface was inspected. No cultural resources were located in this area.

Beal's / Dam Borrow Site and Right Wing Dam Haul Area

The portion of this area located to the south and east of Beal's Point was surveyed by Far Western Anthropological Research Group (1993). The portion of this area located along Beal's Point and to the north and west was surveyed by URS (2006).

The Far Western survey resulted in the discovery of ten cultural resources within the current Folsom DS/FDR area and the re-recording of two previously known cultural resources. These cultural resources are listed in Table 3.11-5. The URS survey resulted in the discovery of two new isolates. These cultural resources are listed in Table 3.11-6. An additional seven previously recorded sites were also noted on the records search provided to Pacific Legacy by Reclamation. The documents provided to Pacific Legacy by Reclamation did not include site records for six of these cultural resources. These cultural resources are listed in Table 3.11-7.

Dike 6
This area was surveyed by Pacific Legacy (2006). The entire area was walked in transects of no greater than ten meters. The entire surface was inspected. No cultural resources were located in this area.

Reclamation is in the process of completing a National Register nomination for the CVP. This nomination concludes that the dikes are non-contributing elements to the CVP MPN. This determination will be reviewed by the Keeper of the National Register.

Dike 6 Contractor Staging Area
This area was surveyed by Pacific Legacy (2006). The entire area was walked in transects of no greater than ten meters. The entire surface was inspected. No cultural resources were located in this area.

Right Wing Dam
This area was surveyed by Pacific Legacy (2006). The entire area was walked in transects of no greater than ten meters. The entire surface was inspected. Two previously recorded cultural resources were noted in the records search, but were not relocated during Pacific Legacy's survey. CA-SAC-412 is close to, but does not extend into, the present Folsom DS/FDR area. P-31-60 is an isolated find that was not relocated during Pacific Legacy's survey. The cultural resources are listed in Table 3.11-8.

Folsom Dam, including the Right Wing Dam, was found eligible for listing on the NRHP by the Corps in the report titled Cultural Resources Archaeological Survey and National Register Evaluation of Folsom Dam and Properties for the Folsom Bridge Project and, on June 26, 2006, SHPO concurred with the finding that the dam is eligible under Criterion A.

Reclamation is in the process of completing a National Register nomination for the CVP. This nomination concludes that Folsom Dam, including the central concrete structure and both adjacent wing dams, is considered a contributing element to the CVP MPN. This determination will be reviewed by the Keeper of the National Register.

Table 3.11-5
Cultural Resources within Beal's / Dam Borrow Site and Right Wing Dam Haul Area (Far Western 1993)

Trinomial / Temporary No.	***Description***	***Date Recorded***	***Elevation (ft)***	***Management Recommendation (Far Western 1992)***
CA-PLA-253H	HISTORIC: Historic Structure	1993	380	Historical research, surface collection, and subsurface testing
CA-PLA-520H	HISTORIC: Large Earthen Ditch	1992	460	None provided
FD-3(I)	PREHISTORIC: Shale Stemmed Projectile Point Basal Fragment	1993	410	None provided
FD-47	PREHISTORIC: Groundstone and Lithics (Potential Subsurface)	1993	422	Auger and test excavations
FD-48	PREHISTORIC: Groundstone and Lithics (Potential Subsurface)	1993	429	Auger and test excavations
FD-50/H	PREHISTORIC AND HISTORIC: Groundstone and Lithics (Potential Subsurface) and Historic Debris	1993	405	Auger and test excavations
FD-52	PREHISTORIC: Lithics (Potential Subsurface)	1993	410	Auger to test for subsurface deposit and, if none, apply Sparse Lithic Scatter Data Acquisition Program (Jackson et al. 1988)
FD-55	PREHISTORIC: Groundstone and Lithics (Potential Subsurface)	1993	370	Auger and test excavations
FD-56/H	PREHISTORIC AND HISTORIC: Lithics (Potential Subsurface) and Historic Debris	1993	390	Auger to test for subsurface deposit and, if none, apply Sparse Lithic Scatter Data Acquisition Program (Jackson et al. 1988)
FD-57	PREHISTORIC: Groundstone and Lithics (Potential Subsurface)	1993	410	Auger and test excavations
FD-58	PREHISTORIC: Lithics (Potential Subsurface)	1993	412	Apply Sparse Lithic Scatter Data Acquisition Program (Jackson et al. 1988)
FD-59	PREHISTORIC: Groundstone and Lithics (Potential Subsurface)	1993	410	Auger and test excavations

Table 3.11-6
Additional Cultural Resources within Beal's / Dam Borrow Site and Right Wing Dam Haul Area (URS 2006)

Trinomial / Temporary No.	Description	Date Recorded	Elevation (ft)	Management Recommendation
Isolate I-17	HISTORIC: Fourteen-inch-diameter Ferrous Pipe	2005	425	None provided
Isolate I-20	PREHISTORIC: Basalt Biface	1977	425	None provided

Table 3.11-7
Additional Cultural Resources within Beal's / Dam Borrow Site and Right Wing Dam Haul Area (NCIC 2005)

Trinomial / Temporary No.	Description	Date Recorded	Elevation (ft)	Management Recommendation
CA-PLA-435	PREHISTORIC: Groundstone and Lithics (Potential Subsurface)	1987	400-410	None provided
CA-PLA-947	Unknown	Unknown	400	None provided
CA-PLA-948	Unknown	Unknown	420	None provided
CA-PLA-949	Unknown	Unknown	420	None provided
CA-PLA-950	Unknown	Unknown	400	None provided
CA-PLA-955	Unknown	Unknown	400	None provided
CA-PLA-959	Unknown	Unknown	420	None provided

Table 3.11-8
Cultural Resources within Right Wing Dam

Trinomial / Temporary No.	Description	Date Recorded	Elevation (ft)	Management Recommendation
CA-SAC-412	HISTORIC: Right-of-way of the Sacramento, Placer, and Nevada Railroad	1986	330	Resource recorded approximately one mile to southwest of Folsom DS/FDR area and does not exist in projected location within Folsom DS/FDR area
P-31-60	HISTORIC: One dressed stone noted in fill of American River Bike Path	1987	430	Data potential exhausted by recordation

Right Wing Dam Contractor Staging Area

This area was surveyed by Pacific Legacy (2006). The entire area was walked in transects of no greater than ten meters. The entire surface was inspected. No cultural resources were located in this area.

Below Left Wing Dam
This area was surveyed by Bell (2004). No cultural resources were located during the survey. The area was greatly disturbed from dam construction. No cultural resources were located in this area.

Folsom Dam, including the Left Wing Dam, was found eligible for listing on the NRHP by the Corps in the report titled Cultural Resources Archaeological Survey and National Register Evaluation of Folsom Dam and Properties for the Folsom Bridge Project and, on June 26, 2006, SHPO concurred with the finding that the dam is eligible under Criterion A.

Reclamation is in the process of completing a National Register nomination for the CVP. This nomination concludes that Folsom Dam, including the central concrete structure and both adjacent wing dams, is considered a contributing element to the CVP MPN. This determination will be reviewed by the Keeper of the National Register.

Dike 7
This area was surveyed by Pacific Legacy (2006). The entire area was walked in transects of no greater than ten meters. The entire surface was inspected. No cultural resources were located in this area.

Reclamation is in the process of completing a National Register nomination for the CVP. This nomination concludes that the dikes are non-contributing elements to the CVP MPN. This determination will be reviewed by the Keeper of the National Register.

Dike 7 Contractor Staging Area
This area was surveyed by Pacific Legacy (2006). The entire area was walked in transects of no greater than ten meters. The entire surface was inspected. No cultural resources were located in this area.

Dike 8
This area was surveyed by Pacific Legacy (2006). The entire area was walked in transects of no greater than ten meters. The entire surface was inspected. No cultural resources were located in this area.

Reclamation is in the process of completing a National Register nomination for the CVP. This nomination concludes that the dikes are non-contributing elements to the CVP MPN. This determination will be reviewed by the Keeper of the National Register.

Dike 8 / MIAD Borrow Site and Left Wing Dam Haul Area
This area was surveyed by URS (2006). The URS survey resulted in the discovery of seven new isolates. These cultural resources are listed in Table 3.11-9.

Table 3.11-9 ***Cultural Resources within Dike 8/MIAD Borrow Site and Left Wing Dam Haul Area (URS 2006)***				
Trinomial / Temporary No.	***Description***	***Date Recorded***	***Elevation (ft)***	***Management Recommendation***
Isolate I-6	HISTORIC: Concrete Barrier Post	2005	450	None provided
Isolate I-7	HISTORIC: Iron Ferry Platform at end of Dike 8	2005	470	None provided
Isolate I-8	HISTORIC: Concrete Blocks at north end of Dike 8	2005	470	None provided
Isolate I-9	PREHISTORIC: Basalt Core	2005	450	None provided
Isolate I-21	PREHISTORIC: Basalt Flake and Quartzite Hammerstone	2005	450	None provided
Isolate I-22	PREHISTORIC: Obsidian Biface	2005	440	None provided
Isolate I-23	PREHISTORIC: Quartzite Flake	2005	440	None provided

MIAD Borrow Site 2 (AKA D2)
This area was surveyed by Pacific Legacy (2006). The entire area was walked in transects of no greater than ten meters. The entire surface was inspected. One cultural resource was located during survey of area by Pacific Legacy. This resource is listed in Table 3.11-10.

Table 3.11-10 ***Cultural Resource within MIAD Borrow Site 2 (D2) (Pacific Legacy 2006)***				
Trinomial / Temporary No.	***Description***	***Date Recorded***	***Elevation (ft)***	***Management Recommendation***
PL-FDEIS-1	HISTORIC: Small Prospect Pit (3 m by 3 m) with no associated artifacts or features	2006	500	Flag and avoid. Document and evaluate through historical research and test excavation.

MIAD Borrow Site 1 (AKA D1)
This area was surveyed by Pacific Legacy (2006). The entire area was walked in transects of no greater than ten meters. The entire surface was inspected. No cultural resources were located in this area.

MIAD
This area was surveyed by Pacific Legacy (2006). The entire area was walked in transects of no greater than ten meters. The entire surface was inspected. No cultural resources were located in this area.

Reclamation is in the process of completing a National Register nomination for the CVP. This nomination concludes that the dikes, including MIAD, are non-contributing elements to the CVP MPN. This determination will be reviewed by the Keeper of the National Register.

Brown's Ravine Borrow Site

This area was surveyed by URS (2006), Welch et al. (2004), and West (1990). The URS survey resulted in the discovery of ten new isolates and the re-recording of one previously known site. These cultural resources are listed in Table 3.11-11. An additional six previously recorded sites were also noted on the records search provided to Pacific Legacy by Reclamation. The documents provided to Pacific Legacy by Reclamation did not include site records for these cultural resources. These cultural resources are listed in Table 3.11-12.

Table 3.11-11
Cultural Resources within Brown's Ravine Borrow Site (URS 2006)

Trinomial / Temporary No.	***Description***	***Date Recorded***	***Elevation (ft)***	***Management Recommendation***
Site FDSOD-3	PREHISTORIC: Bedrock Mortars, Groundstone, and Lithic Scatter	2004	443	None provided
Isolate I-1	HISTORIC: Red Brick Fragment	2005	400	None provided
Isolate I-2	HISTORIC: Two-inch-diameter Iron Pipe Fragment and White Ceramic	2005	400	None provided
Isolate I-3	HISTORIC: Wooden Platform, Iron Braces, and Willows	2005	400	None provided
Isolate I-4	HISTORIC: Two-inch-diameter Iron Pipe	2005	430	None provided
Isolate I-11	HISTORIC: Beer Can	2005	450	None provided
Isolate I-12	HISTORIC: Ovate Schist Rock Pile and Red Brick Fragments	2005	450	None provided
Isolate I-13	HISTORIC: Red Brick Fragment	2005	450	None provided
Isolate I-14	HISTORIC: Corrugated Metal Pipe	2005	430	None provided
Isolate I-16	HISTORIC: One-half-inch-diameter Iron Pipe	2005	450	None provided
Isolate I-17	HISTORIC: Fourteen-inch-diameter Ferrous Pipe	2005	450	None provided

Table 3.11-12
Previously Recorded Cultural Resources within Brown's Ravine Borrow Site (NCIC 2005)

Trinomial / Temporary No.	Description	Date Recorded	Elevation (ft)	Management Recommendation
CA-ELD-261	PREHISTORIC: Groundstone and Lithics (Potential Subsurface)	1977	430-435	None provided
CA-ELD-1238/H	HISTORIC: Natoma Ditch	1996	Unknown	None Provided
Site FDSOD-1	HISTORIC: Historic Foundation, Trash Pit, and Historic Debris	2004	405	None provided
Site FDSOD-2	HISTORIC: Historic Foundation, Footings, Orchard, and Historic Debris	2004	410	None provided
Site FDSOD-4	PREHISTORIC: Groundstone and Lithics	2004	422	None provided
Site FDSOD-5	PREHISTORIC: Groundstone and Lithics	2004	422	None provided

Main Concrete Dam

As part of Alternatives 1 through 5, as outlined in Section 2.2, modifications would be made to the Main Concrete Dam structure. The dam was found eligible for listing on the NRHP by the Corps in the report titled Cultural Resources Archaeological Survey and National Register Evaluation of Folsom Dam and Properties for the Folsom Bridge Project and, on June 26, 2006, SHPO concurred with the finding that the dam is eligible under Criterion A. If one and/or portions of Alternatives 1 through 5 are chosen, Reclamation will follow the requirements of Section 106 of the NHPA as implemented in 36 CFR Part 800 and Reclamation's Policies and Directives found at LND P01, LND 02-01 and LND 10-01.

Raised Impoundment Area

As part of Alternatives 2 through 5 as outlined in Section 2.2, there exists a potential for an increased retention area for the reservoir. This increased retention area has not been subject to inventory for cultural resources. If one and/or portions of Alternatives 2 through 5 are chosen, Reclamation will follow the requirements of Section 106 of the NHPA as implemented in 36 CFR Part 800 and Reclamation's Policies and Directives found at LND P01, LND 02-01 and LND 10-01.

New Embankments/Flood Easements

As part of Alternatives 2 through 5 as outlined in Section 2.2, new embankments/flood easements may need to be constructed at low points surrounding the reservoir due to the raised retention area. The locations of the new embankments/flood easements have not been subject to inventory for cultural resources. If one and/or portions of Alternatives 2 through 5 are chosen, Reclamation will follow the requirements of Section 106 of the NHPA as implemented in 36 CFR Part 800 and Reclamation's Policies and Directives found at LND P01, LND 02-01 and LND 10-01.

3.11.2 Environmental Consequences/Environmental Impacts

A historic property and/or a historical resource, a cultural resource must possess at least one of the criterion of eligibility and retain the quality of integrity. The concept of integrity is usually interpreted to mean “intactness” of physical characteristics, but in terms of the NRHP and the CRHR, integrity is a measure of the degree to which a property retains or is able to convey the essential characteristics defined under one of the four eligibility criteria. These characteristics may be expressed through integrity of location, design, setting, materials, workmanship, feeling, and association of a property. An archaeological property may retain sufficient integrity to qualify it for the NRHP or CRHR if the property retains the ability to yield information important to an understanding of history or prehistory. It must be demonstrated to have the potential, or to have previously yielded, data that can be used to address important research questions.

The standard for integrity for NRHP eligible properties is more stringent than that for CRHR eligible cultural resources. It should be noted that a property found to not retain sufficient integrity to be NRHP eligible may be found to possess sufficient integrity to be CRHR eligible. One identified cultural resource within the Folsom DS/FDR area, the Folsom Dam, has been found eligible for listing on the NRHP and is considered a historic property and historical resource. None of the other identified cultural resources within the Folsom DS/FDR area have been formally evaluated as to their eligibility for listing on either the NRHP or the CRHR.

Federal significance criteria apply because the proposed action constitutes a federal undertaking that requires compliance with Section 106 of the NHPA. Cultural resource significance is evaluated in terms of eligibility for listing on the NRHP. NRHP criteria for eligibility are defined as follows:

> The quality of significance in American history, architecture, archeology, 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 and association, and that:
>
> a) are associated with events that have made a contribution to the broad pattern of our history;
>
> b) are associated with the lives of people significant in our past;
>
> c) embody the distinct 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) have yielded, or are likely to yield, information important in prehistory or history (36 CFR Part 60.4).

Section 106 of the NHPA and its implementing regulations (36 CFR Part 800) require that the ACHP, SHPO, and the interested public, including Native Americans, be provided an opportunity to comment on the effects that the proposed action may have on historic properties.

CEQA defines a significant historical resource as “a resource listed or eligible for listing on the California Register of Historical Resources” (Pub. Res. Code Section 5024.1). For a historical resource to be eligible for listing on the CRHR, it must be significant at the local, state, or national level under one or more of the following four criteria:

1) it is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;

2) it is associated with the lives of persons important to local, California, or national history;

3) it embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or,

4) it has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

Historical resources automatically listed on the CRHR include those historic properties listed on, or formally determined eligible for listing on the NRHP.

3.11.2.1 Assessment Methods

The criteria for determining the historical significance of cultural resources are the NRHP eligibility criteria as defined at 36 CFR Part 60.4, and the CRHR eligibility criteria as defined at Section 5024.1 of the California Public Resources Code. One identified cultural resource within the Folsom DS/FDR area, the Folsom Dam, has been found eligible for listing on the NRHP and is considered a historic property and historical resource. None of the other identified cultural resources within the Folsom DS/FDR area have been evaluated as to their eligibility for listing on either the NRHP or the CRHR. Federal agencies are responsible to make determinations of NRHP eligibility for cultural resources that will be affected by an undertaking. SHPO concurrence with the agencies’ NRHP determinations is necessary for a formal determination. Alternatively, an evaluation of a historic property may be submitted to the Keeper of the NRHP for a formal determination of NRHP eligibility.

The analysis of potential impacts to historic properties employs the Criteria of Adverse Effect as developed by the ACHP in its regulations for the "Protection of Historic Properties" (36 CFR Part 800.5). Adverse effects and/or significant impacts can occur when NRHP eligible or listed sites, structures, buildings, objects, or districts are subjected to one or more of the following effects:

- physical destruction or alteration of all or part of the property;
- isolation of the property from or alteration of the property's setting when that character contributes to the property's qualification for the NRHP;
- introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting;
- neglect of a property resulting in its deterioration or destruction; and,
- transfer, lease, or sale of the property (36 CFR Part 800.6).

Because the proposed action must also comply with CEQA, an impact is considered potentially significant if an action would have an effect that may change the historical significance of the resource (Pub. Res. Code Section 21084.1). Demolition, replacement, substantial alteration, and relocation of historic properties are actions that would change the historical significance of a property eligible for listing or listed on the CRHR.

3.11.2.2 Environmental Consequences/Environmental Impacts

Environmental Consequence/Environmental Impacts of the No Action/No Project Alternative

Under the No Action/No Project Alternative as outlined in Section 2.2, no construction-related activities or changes in current operation would take place. Therefore, no construction-related effects would occur. No new operation-related effects would result from this alternative. Current existing conditions, such as disturbance to cultural resources by looters, vehicles, wave action erosion, sedimentation, changing water levels, and redistribution of cultural materials would continue.

The No Action/No Project Alternative would have no effect on cultural resources.

Environmental Consequences/Environmental Impacts of Alternative 1

<u>*Construction would lead to adverse effects to historic properties and/or historical resources.*</u>

All of the Folsom DS/FDR areas associated with Alternative 1, as outlined in Section 2.2, have been subject to cultural resources survey and inventory. Under this alternative, a number of the cultural resources listed in Tables 3.11-1 through 3.11-12 would be impacted. The exact number of cultural resources that would be impacted is dependent upon the water elevation at the time of implementation of the alternatives and also the area subject to ground disturbance during construction. One identified cultural resource within the Folsom DS/FDR area, the Folsom Dam (including the Left Wing Dam and Right Wing Dam), has been found eligible for listing on the NRHP and is considered a historic property and historical resource. However, none of the other identified cultural resources have been evaluated as to NRHP and CRHR eligibility. Thus, the total number of historic properties (NRHP) or historical resources (CRHR) that would be impacted by implementation of Alternative 1 is unknown. Reclamation and the Corps will ensure that those cultural resources located within the area of potential effects (APE) will be evaluated for possible inclusion within the NRHP and the CRHR. Once historic properties and/or historical resources are identified, Reclamation and the Corps will invoke the criteria of effect to determine the level of alternative effects to each historic property and historical resource. Adverse effects will be resolved, under the NHPA, through development of an agreement document. Under NEPA and CEQA, construction-related impacts to historic properties and/or historical resources would be significant.

This impact would be potentially significant if historic properties or historical resources are identified. Implementation of Mitigation Measure CR-1 would reduce this impact to a less than significant level.

Construction would lead to adverse effects to previously unknown historic properties and/or historical resources.

There always exists the possibility that ground disturbing activities could result in the inadvertent discovery of potential historic properties and/or historical resources.

This impact would be potentially significant if historic properties or historical resources are identified. Implementation of Mitigation Measure CR-1, as appropriate, would reduce this impact to a less than significant level.

Environmental Consequences/Environmental Impacts of Alternative 2

Alternative 2, as outlined in Section 2.2, would have the same effect on cultural resources as Alternative 1 with exception to one additional impact.

Construction would lead to adverse effects upon previously undiscovered and potential historic properties and/or historical resources within the area of the increased reservoir elevation, and locations of new embankment, or footprints of construction work at existing Folsom Facilities.

Portions of the shoreline around the retention area as well as the locations of the necessary new embankments/flood easements have not been subject to cultural resources survey and inventory. The remaining Folsom DS/FDR areas associated with Alternative 2 have been subject to cultural resources survey and inventory. However, identified cultural resources have not been subject to evaluation as to NRHP and CRHR eligibility.

This impact would be potentially significant. Implementation of Mitigation Measure CR-1, as appropriate, would reduce this impact to a less than significant level.

Environmental Consequence/Environmental Impacts of Alternative 3

Alternative 3, as outlined in Section 2.2, would have the same effect on cultural resources as Alternative 2. Implementation of Mitigation Measure CR-1, as appropriate, would reduce this impact to a less than significant level.

Environmental Consequences/Environmental Impacts of Alternative 4

Alternative 4, as outlined in Section 2.2, would have the same effect on cultural resources as Alternative 2. A 7 foot dam raise could result in more areas of inundation during high storm events. Implementation of Mitigation Measure CR-1, as appropriate, would reduce this impact to a less than significant level.

Environmental Consequences/Environmental Impacts of Alternative 5

Alternative 5, as outlined in Section 2.2, would have the same effect on cultural resources as Alternative 2. A 17 foot dam raise could result in more areas of inundation during high storm events. Implementation of Mitigation Measure CR-1, as appropriate, would reduce this impact to a less than significant level.

3.11.3 Comparative Analysis of Alternatives

Of the six alternatives presented, only the No Action/No Project Alternative would pose no new impacts to potential historic properties and/or historical resources. However, impacts associated with the current operation of the facilities (i.e., disturbance to cultural resources by looters, vehicles, wave action erosion, sedimentation, changing water levels, redistribution of cultural materials, etc.) would continue. The remaining five action alternatives pose varying degrees of potential impacts to potential historic properties and/or historical resources depending on the height of the dam raise and extent of construction activities. All alternative impacts would be mitigated to less than significant levels.

Of the five action alternatives, Alternative 1 poses the least amount of potential impacts to historic properties and/or historical resources. Alternative 1 would not increase the reservoir maximum surface elevation and, thus, would not result in impacts to potential historic properties and/or historical resources located within the increased retention area or footprints of the new embankments/flood easements, which would not be constructed under this alternative. In addition to impacts associated with current operation of the facilities, Alternative 1 would impact potential historic properties and/or historical resources, if found, that have been identified within the Folsom DS/FDR area. Ground disturbing activities may also impact previously unknown historic properties and/or historical resources inadvertently discovered.

Alternative 2 poses greater potential impacts than Alternative 1 because this alternative would extend the Maximum Flood Zone and require the construction dam raises and new embankments/flood easements. The increase in Maximum Flood Zone may lead to impacts to sites as a result of inundation, wave action, and/or erosion. In addition to the impacts posed by Alternative 1, Alternative 2 would result in potential impacts to potential historic properties and/or historical resources located within the increased retention area and the footprints of the new embankments/flood easements. The potential impacts of Alternative 2 are less than those of Alternatives 4 and 5 due. Alternative 3 poses similar impacts to Alternative 2.

Alternative 4 poses greater potential impacts than Alternatives 1 through 3. This alternative would extend the Maximum Flood Zone to a greater level than that of Alternatives 2 and 3. Alternative 4 would result in potential impacts to potential historic properties and/or historical resources located within the increased retention area and the footprints of the new embankments/flood easements. Alternative 5 poses greater potential impacts than Alternatives 1 through 4 because this alternative would extend the Maximum Flood Zone to a greater level than that of Alternatives 2 through 4.

3.11.4 Mitigation Measures

Implementation of Mitigation Measure CR-1 would reduce all potential impacts to a less than significant level. Adverse effects to historic properties, under Section 106, are resolved through development of an agreement document.

CR-1: Identification, Evaluation and Mitigation (Treatment) of Impacts to Historic Properties and/or Historical Resources.

All cultural resources located within the APE will be evaluated for inclusion in the NRHP and the CRHR using criteria found at 36 CFR Part 800.4 or CRHR Guidelines. A memorandum of agreement or a programmatic agreement will be developed, in consultation with SHPO and consulting parties, to mitigate impacts to any identified historic properties or historic resources. The implementation of the agreement document will reduce impacts to historic properties or historic resources to less than significant levels, per NEPA and CEQA. Cultural resources that are determined to be not eligible for inclusion in the NRHP or the CRHR require no further management. It should be noted that some cultural resources may not meet NRHP eligibility criteria, but still may be CRHR eligible and could be managed per CEQA but not per NEPA.

If human remains are discovered, procedures outlined in Reclamation's Directive and Standards for the Inadvertent Discovery of Human Remains (LND 07-01) will be followed.

The standard contract specifications contain directions to follow in the unlikely event of the discovery of other cultural resources during the construction phase of this project. Any such discovery will also be considered under the provisions of 36 CFR Part 800.13.

3.11.5 Cumulative Effects

Table 5-1 presents the projects that were considered in the analysis of cumulative effects. These are the New Folsom Bridge, Future Redundant Water Supply Intake and Pipeline for Roseville, Folsom and San Juan Water District, Folsom Dam Road Closure, L.L. Anderson Dam, Lower American River Common Features Project, Long Term Reoperation of Folsom Reservoir, and Sacramento Municipal Utility District Transmission Line Relocation. In addition to these projects, continued county, municipal, and private development in the region surrounding Folsom Dam should also be considered in this cultural resources analysis. Non-federal development in the surrounding region, not subject to NEPA or CEQA, has resulted in impacts to historic and prehistoric resources.

For some of the cumulative projects listed above, the impacts on historic properties would not be known until further site-specific historic resource studies have been undertaken, project designs have been more fully developed, and projects implemented. For federal projects, the lead federal agency would carry out any necessary inventories and evaluations of NRHP significance; consultation with the SHPO and Native American groups and interested parties; and treatment/mitigation required by Section 106 of the NRHP.

Cultural resources have been affected by past actions since Folsom Dam was constructed in 1956. Cultural resources could be subject to damage from ongoing maintenance, new construction, demolition, rehabilitation of existing facilities, and natural processes (e.g., wave erosion). The No Action/No Project Alternative would not result in a substantial change to the current condition of known or previously undiscovered cultural resources. Alternatives 1 through 5 have the potential to contribute to the loss of regional cultural resources as a consequence of disturbance or degradation of known or previously undiscovered archaeological sites. Alternative 1 would have the least potential to impact cultural resources. Alternatives 2 through 5 would incrementally increase the potential to impact cultural resources.

With the growth potential of the area around the Folsom DS/FDR, private development in El Dorado, Placer, and Sacramento Counties may lead to incremental adverse impacts to cultural resources. However, provided that proper mitigation consistent with Section 106 of the NHPA for federal actions and CEQA for state, county and municipal actions, is implemented in conjunction with development of related projects in these counties and the surrounding region, no significant cumulative impacts are anticipated. The Folsom DS/FDR, in conjunction with the cumulative projects listed above, and the growth potential of the region, could lead to cumulative impacts to cultural resources. However, provided that proper mitigation consistent with Section 106 of the NHPA for federal actions and CEQA for state, county and municipal actions, is implemented for all projects, cumulative impacts would likely be avoided. The Folsom DS/FDR would implement appropriate mitigation measures and would therefore not contribute to a significant cumulative impact to cultural resources.