

## Appendix E: Minimization/Avoidance/Compensation Summary

### Air Quality

- In order to minimize the temporary construction-related emission impacts, the contractor will be required to use Best Management Practices and comply with Caltrans Standard Specifications, Section 7-1.01F, "Air Pollution Control" and Section 10, "Dust Control." The contractor is also required to comply with all pertinent and legally enforceable rules, regulations, ordinances, and statutes of the local air district.

### Animal Species

#### Steelhead and Chinook Salmon

- No work will occur within the bed and banks of Steelhead Creek.
- All construction within NEMDC will occur during daylight hours.
- Mats will be placed in NEMDC to minimize potential compaction of soils and to reduce the potential for sediments to enter Steelhead Creek.
- Measures consistent with the current Caltrans' Construction BMP's Manual (including the Storm Water Pollution Prevention Plan [SWPPP] and WPCP Manuals will be implemented to minimize effects to migrating salmonids during construction.
- In the October following each construction season, all areas temporarily disturbed during construction (e.g., equipment storage and access areas) will be reseeded with erosion control seeding consisting of a sterile, non-proliferating grass species, such as cereal barley. The seed mix shall not include any fertilizers or chemicals.
- Following project completion, all areas temporarily disturbed during construction will be restored following the "*Guidelines for Restoration and/or Replacement of Giant Garter Snake Habitat*", outlined below.
- The disturbed area(s) will be re-graded to its pre-existing contour and ripped, if necessary, to de-compact the soil.
- If appropriate, the areas should be hydroseeded, with a mix containing at least 20 to 40 percent native grass seeds. The seed mix should also contain 2 to 10 percent native forb seeds, and approximately 40 to 68 percent of the seed mix may be non-native, non-aggressive European annual grass. Aggressive non-native grasses should not be included in the seed mix. Endophyte-infected grasses should not be included in the seed mix.

#### Giant Garter Snake

##### Upland Habitat:

- Construction activity within 200 feet of giant garter snake aquatic habitat will be conducted between May 1 and October 1 to minimize adverse effects to this species. This is the active period for giant garter snakes and thus direct mortality is lessened because snakes are expected to actively move and avoid danger.
- Movement of heavy equipment will be confined to existing roadways where feasible to reduce ground disturbance. Equipment for work in the NEMDC will be staged outside the Steelhead Creek channel. Equipment for work near the West Drainage Canal will be staged outside potential GGS upland habitat. Equipment staging for all other activities will occur at an existing Caltrans facility southwest of the NEMDC overcrossing.
- Caltrans will confine construction to the minimal area necessary and will designate Environmentally Sensitive Areas for avoidance.

- Construction personnel will receive USFWS-approved work awareness training on the giant garter snake. Proof of attendance by personnel will be submitted to the USFWS.
- Surveys for giant garter snakes shall be conducted within 24 hours of initiation of construction activities. Surveys will be repeated if a construction lapse of greater than two weeks occurs.
- A USFWS-approved biologist will monitor all ground-disturbing activities within 200 feet of the NEMDC and West Drainage Canal. If a snake is encountered, this biologist shall have the authority to stop all activities which may threaten the snake and redirect activities if needed until it is determined that the snake will not be harmed. The biologist will report all sightings of live or dead snakes within three days of their discovery to the Assistant Field Supervisor of the Endangered Species Division at the Sacramento Fish and Wildlife Office.
- Non-entangling erosion control matting will be used in snake habitat.
- Best management practices will be implemented to reduce siltation to receiving snake aquatic habitat.
- Caltrans proposes to restore in accordance with the *Guidance for Restoration and/or Replacement of Giant Garter Snakes Habitat* (Guidelines; Appendix C of the Programmatic Consultation) the 3.0 acres of snake habitat that will be temporarily impacted within the NEMDC. Caltrans proposes to compensate for permanent impacts to 0.007 acre of snake habitat within the NEMDC at a 3:1 replacement ratio for a total of 0.021 acre of upland snake habitat, by securing credits equal to 0.021 acre from the Caltrans Beach Lake Mitigation Bank pursuant to the "Agreement on Mitigation Strategy pertaining to Implementation and Operation of the Beach Lake Mitigation Bank".
- Caltrans proposes to restore all areas in accordance with the Guidelines which may be temporarily disturbed as a result of the construction of the auxiliary lanes. In order to ensure that all areas disturbed as a result of construction activities shall have successfully established post-project appropriate vegetation quality, a qualified biologist shall document the species composition and percent cover of an appropriate representative portion of each separate location disturbed during construction, in a vegetation restoration monitoring report. The USFWS and the California Department of Fish and Game (DFG) may require remedial actions to restore vegetation on these sites in the event that these areas do not contain 80% cover, as documented no later than June 1 of the year following construction. The monitoring report shall be sent to the Sacramento Fish and Wildlife Office address above, and Mr. Todd Gardner of the DFG – North Central Region, at 1701 Nimbus Rd., Suite A, Rancho Cordova, CA 95670.
- Caltrans proposed to compensate for permanent impacts to 0.55 acres of snake habitat within 200 feet of the West Drainage Canal at a 3:1 replacement ratio by funding the permanent preservation, management, and monitoring of 1.65 acres of snake habitat at a USFWS-approved site within the Natomas Basin. Caltrans proposes to provide the USFWS and the DFG written documentation that funds have been expended to secure and record a USFWS-approved conservation easement for the protection of habitat in perpetuity from future development has been recorded for the 1.65-acre site. Caltrans proposes to provide the site location, an operating and management plan to manage the site for the benefit of the snake, and a funding source (such as an endowment) for the perpetual management of the site to be approved by USFWS and DFG prior to ground breaking on the proposed project.
- In accordance with the Guidelines, Caltrans proposes to monitor all areas which are restored for at least one year, and submit monitoring report to the USFWS.
- If applicable, any dewatered habitat should remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling of the dewatered habitat.
- After completion of construction activities, remove any temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-project conditions.

- All construction within NEMDC will be conducted during daylight hours.
- Measures consistent with the current Caltrans' Construction Site Best Management Practices (BMPs) Manual (including the Storm Water Pollution Prevention Plan [SWPPP] and Water Pollution Control Program [WPCP] Manuals will be implemented to minimize effects to GGS (e.g., siltation) during construction.
- A WPCP will be prepared by the contractor in accordance with typical provisions associated with a Regional General Permit for Construction (on file with the Central Valley RWQCB). The WPCP will contain a Spill Response Plan with instructions and procedures for reporting spills, the use and location of spill containment equipment, and the use and location of spill collection materials.

#### Swainson's Hawk

- Tree removal will occur during the non-breeding season between September 15 and February 15, to the extent possible, to comply with the Migratory Bird Treaty Act. If trees cannot be removed during this time period, a qualified biologist will conduct a pre-construction survey prior to the start of construction to search for raptor nests. If Swainson's hawks or other raptors are observed nesting, California Dept. of Fish and Game shall be contacted for their advice on establishing a buffer zone of appropriate length.

#### Western Pond Turtle

- Construction activities in the NEMDC will occur during the summer months to minimize potential impacts to steelhead and giant garter snake, and only during the daylight hours. Western pond turtles are most active during this time period as well; as a result, it is expected that turtles would move upstream or downstream of the temporary construction activities.

#### Western Burrowing Owl (BUOW)

- A qualified biologist will survey the ESL for BUOW no more than 30 days prior to the start of construction. If BUOW or sign is discovered, Caltrans will place environmental sensitive area fencing around the nest and consult with CDFG.

#### White-tailed Kite

- A qualified biologist will conduct pre-construction surveys in the spring, prior to the start of construction. If kites or other raptors are observed nesting, CDFG will be contacted and a suitable buffer zone will be established.
- Any trees that require removal should be removed outside the nesting season, after September 1<sup>st</sup> and before February 1<sup>st</sup>, if feasible, to conform to the MBTA.
- All construction within NEMDC will be conducted during daylight hours.

#### Loggerhead Shrike

- A qualified biologist will conduct pre-construction surveys in the spring prior to construction, to determine the nesting status of loggerhead shrike. If a found nesting, the CDFG will be notified and an appropriate buffer will be established around the nest until the young have fledged. If no nests are found, then avoidance or minimization measures will not be required.

#### Nuttall's Woodpecker

- The project will comply with the Migratory Bird Treaty Act regulations to minimize potential impacts to Nuttall's woodpecker and other migratory birds. Tree removal will occur between September 1 and February 1.

### Purple Martin

- Surveys will be conducted each season prior to construction to document the status of the Roseville Road colony and identify new colonies that may become established at other overcrossings.
- Weep holes will be plugged during the non-breeding season (September 1 – March 1) of the year of project construction, to conform with the MBTA. Exclusion devices will be left in place until August 31 or until all work is completed. The CDFG will be consulted regarding the exclusion of martins on any structures within the project area.

### Swallows and Swifts

Because work will occur during the swallow/swift nesting season (March 1 – August 31) swallows will be excluded, if necessary, by a qualified company during the non-breeding season immediately prior to start of construction. Exclusion structures (e.g., netting and weep hole plugs) will be left in place and maintained through August 31 of each breeding season, or until the work is complete.

### **Community Facilities**

- **Implement a Transportation Management Plan (TMP)**
- Develop a detour plan.

### **Hazardous Materials**

- Prepare health and safety plans to address potential effects of the various chemical compounds that could be encountered.
- It is Caltrans policy to avoid hazardous waste, whenever possible. If involvement becomes necessary prior to, during and/or after construction, protection for employees, workers and the community would be implemented. Confirmation and documentation of suspected hazardous waste issues will be performed, and an attempt will be made to have responsible parties perform the cleanup activities.
- For affected soil encountered beneath the project, possible cleanup methods include excavation and disposal of the affected soil at appropriately permitted landfills, aeration of soil in situ or aboveground, and bioremediation.
- For affected groundwater encountered beneath the project, possible cleanup methods include removal of affected water, with subsequent disposal or treatment.
- Caltrans will perform site investigations for all identified properties to confirm or dismiss potential hazardous waste issues. Upon confirmation of hazardous waste issues, responsible parties will be sought for appropriate cleanup.

### **Hydrology, Water Quality, Storm Water**

- The project shall adhere to the conditions of the Caltrans Statewide NPDES Permit CAS # 000003, (Order # 99-06-DWQ), issued by the State Water Resources Control Board.
- Construction projects with a disturbed area of more than 1 acre or by request of a Regional Water Quality Control Board require a Caltrans approved Storm Water Pollution Prevention Plan (SWPPP) containing project specific effective erosion and sediment control measures. These measures must address soil stabilization practices, sediment control practices, tracking control practices, and wind erosion control practices. In addition, the project plan must include non-storm water controls, waste management and material pollution controls.
- The disturbed soil area appears to exceed 1 acre and it is anticipated that a SWPPP level of temporary pollution controls will be specified for the project; Standard Special Provision 07-345 therefore shall be included in the Plans, Specifications, and Estimates to address these temporary construction water pollution control measures.

- An evaluation of the project using the most recent approved evaluation guide is essential in determining if the incorporation of permanent storm water runoff treatment measures shall be considered for this project.
- If a SWPPP is specified, then a Notification of Construction shall be submitted to the Central Valley Regional Water Quality Control Board at least 30 days prior to the start of construction.
- Incorporate design pollution prevention Best Management Practices (BMPs), including:
  - Downstream Effects / Potentially Increased Flow
  - Slope/Surface Protection Systems
  - Concentrated Flow Conveyance Systems
  - Preservation of Existing Vegetation
- The contractor will be required to prepare a SWPPP which will include, as a minimum, the use of fiber rolls, check dams, two stabilized construction entrances, and a concrete washout area as temporary construction site BMP's.

### **Invasive Species**

- Caltrans will not allow disposal of soil and plant material from any areas that support invasive plant species onto areas that support stands dominated by native plant species.
- Plant species used for erosion control should consist of non-invasive species or non-persistent hybrids that will serve to stabilize site conditions and prevent invasive species from colonizing.

### **Noise**

- If feasible, Caltrans intends to incorporate noise abatement measures in the form of barriers (sound walls) at the following 10 locations: WB5, WB6, WB7A, WB7B, WB7C, E6A, E6B, E7A, E7B, and E7C (see Table 2.13-5 and Figure 2.1-1a – 1m)

### **Paleontology**

- Monitor where excavation or road cuts could disturb fossil-bearing sedimentary strata.
- Contractor undertaking monitoring will adhere to the paleontological plan.

### **Pedestrian and Bicycle Facilities**

- Bike routes and bike paths will remain open during construction.

### **Visual Resources**

- All grade changes should be landscaped with drought tolerant trees, shrubs, and groundcovers. Landscaping provides permanent pollution prevention and Best Management Practice in storm water management. In addition, slopes under the bridge should be paved full length to minimize maintenance and potential for erosion.
- New concrete safety barriers should have an aesthetic treatment to compensate for the additional height and visual impact.
- Install new landscaping along proposed auxiliary lanes.
- Include aesthetic treatments and plant vines in front of new sound walls to reduce potential graffiti and sound wall maintenance.
- Replant removed trees and shrubs.
- Replace removed irrigation, and install new irrigation where needed.

### **Best Management Practices (BMPs):**

- Where possible, cut and fill slopes should be contour graded and rounded so as to reflect the contours of adjacent, undisturbed topography to the extent feasible. To the extent feasible, grading operations should not result in angular landforms.

- All new cut/fill slopes with stockpiled material to enhance re-vegetation efforts should be resurfaced.
- When re-vegetation is being required, plant low maintenance plants, such as drought-tolerant groundcover or native trees with mulch.
- Erosion Control will be applied to all disturbed areas.

### **Wetlands**

- Temporary impacts to NEMDC will be minimized by working during the summer months when the NEMDC channel is dry (except for Steelhead Creek), and by using mats to minimize compaction of soil. All appropriate Best Management Practices (BMP's), which will be part of the Storm Water Pollution Prevention Plan (SWPPP), will be implemented to avoid and minimize impacts to the NEMDC and Steelhead Creek.
- The construction of auxiliary lanes between West El Camino Avenue and I-5 will require filling the roadside ditches, which includes the one small wetland. The project will require the relocation of the ditches adjacent to the auxiliary lane, regardless if they are subject to USACE jurisdiction. The new ditches will be graded to receive roadway and irrigation runoff as they do now. **The 0.001-acre wetland will be replaced on-site in the same complex as the relocated ditches.** Hydrophytic vegetation is expected to re-establish itself in the wetland. **A Section 404 permit from the USACE will be required.**
- Temporary impacts in the NEMDC channel will be reduced by restoring all areas to pre-construction conditions and planting native riparian plants.
- All appropriate BMP's will be in place to prevent any construction related material or erosion-generated sediments from entering the WDC.

## Appendix F: List of Acronyms

APE	Area of Potential Effects
BMP	Best Management Practices
BO	Biological opinion
BUOW	Burrowing owl
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CAPM	Capital Preventative Maintenance
CARB	California Air Resources Board
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response Compensation & Liability Act
CESA	California Endangered Species Act
CEQ	Council of Environmental Quality
CFR	Code of Federal Regulations
CH	Critical Habitat
CHRIS	California Historical Resource Information System
CIA	Community impact assessment
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	Carbon monoxide
COHA	Cooper's hawk
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
EA	Environmental Assessment
EB	East-bound
EFH	Essential Fish Habitat
EJ	Environmental justice
EIR	Environmental Impact Report
EO	Executive Order
ESA	Environmentally Sensitive Area
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FOE	Finding of Effect
ft	Feet
GGS	Giant garter snake
HOT	High Occupancy Toll
HOV	High Occupancy Vehicle
HPSR	Historic Properties Survey Report
HAS	Hydrologic Sub Areas
IC	Interchange
in	Inch(es)
I-80	Interstate 80
ISA	Initial Site Assessment
L <sub>dn</sub>	Day-night average sound level.
L <sub>eq</sub>	Equivalent sound level
LOS	Level of service
MLD	Most Likely Descendent
MLS	Multiple listing statistics
mi	Miles
MSAT	Mobile source air toxics
MTIP	Metropolitan Transportation Improvement Program
MTP	Metropolitan Transportation Plan
NAAQS	National Ambient Air Quality Standards

NAC	Noise abatement criteria
NAHC	Native American Heritage Commission
NCIC	North Central Information Center
NEMDC	Natomas East Main Drain Canal
NEPA	National Environmental Policy Act
NESR	Natural Environment Study Report
NHPA	National Historic Preservation Act
NO <sub>2</sub>	Nitrogen dioxide
NOA	Naturally occurring asbestos
NOAA	National Oceanic and Atmospheric Administration
NOP	Notice of Preparation
NO <sub>x</sub>	Nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
O <sub>3</sub>	Ozone
OGAC	Open-graded asphalt concrete
OH	Over-head
OHW	Ordinary high water mark
OSHA	Occupational Safety and Health Act
PA	Programmatic Agreement
Pb	Lead
PCC	Portland concrete cement
PG&E	Pacific Gas & Electric
PM	Post mile
PM <sub>10</sub>	Particulate matter 10 microns or less
PM <sub>2.5</sub>	Fine particulate matter
ppm	Parts per million
PQS	Professionally qualified staff
RCRA	Resource Conservation & Recovery Act
RD 1000	Reclamation District 1000
ROG	Reactive organic gases
RT	Regional Transit
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SACMET	Sacramento Metropolitan Area Planning Model
SACOG	Sacramento Area Council of Governments
SAFACA	Sacramento Area Flood Control Agency
SCSD	Sacramento County Sheriff's Department
SCHMD	Sacramento County Hazardous Materials Division
SEOW	Short-eared owl
SFD	Sacramento Fire Department
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utility District
SO <sub>2</sub>	Sulfur dioxide
SPD	Sacramento Police Department
SRCS	Sacramento Regional County Sanitation District
STA	Sacramento Transportation Authority
SWHA	Swainson's hawk
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TASAS	Traffic Accident Surveillance and Analysis System
TRBL	Tricolored blackbird
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDOT	U.S. Department of Transportation

USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VELB	Valley elderberry longhorn beetle
UCMP	University of California Museum of Paleontology
UST	Underground storage tank
VIA	Visual Impact Assessment
VMT	Vehicle miles of travel
vph	Vehicles per hour
WB	West-bound
WDC	West Drainage Canal
WMRD	Waste Management and Recycling Division
WPCP	Water Pollution Control Plan
WTKI	White-tailed kite

## **Appendix G: List of Technical Studies**

A number of technical studies were used to analyze the impacts of the proposed project. These include:

- Air Quality and Energy Evaluation, November 2006
- Community Impact Assessment, April 2007
- Floodplain Hydraulic Study, September 2006
- Historic Property Survey Report, March 2007
- Initial Site Assessment, October 2006
- Natural Environment Study Report, January 2007
- Noise Evaluation, March 2006
- Paleontological Evaluation Report, June 2006
- Traffic Report, December 2006
- Visual Impact Assessment, February 2007
- Water Quality Study, September 2006

Copies of the technical studies are available for viewing, along with copies of the Draft EIR/EA, at:

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