

## **APPENDIX J**

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USACE and SAFCA Responses to Comments on  
Previous NLIP Environmental Documents

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J1 Phase 2 FEIR Master Response:  
Hydraulic Impacts on the NLIP

## 2 MASTER RESPONSES TO COMMENTS ON THE DRAFT EIR

### 2.1 INTRODUCTION

The following discussion presents responses to environmental issues raised in multiple comments. These responses have been titled, “master responses,” because they address numerous comments concerning the same or very similar topics. These responses are organized by topic to provide a more comprehensive response than may be possible in responding to individual comments. Table 2-1 lists each issue addressed in a master response.

| Master Response Number | Title  |
|------------------------|--|
| 1                      | Hydraulic Impacts of the NLIP  |
| 2                      | Biological Resources and Habitat Mitigation                                  |
| 3                      | Temporary Construction Impacts on Traffic Safety, Noise, and Other Nuisances |
| 4                      | Utilities Relocation   |

All individual comments on environmental issues along with individual responses to these comments are presented in Chapter 3, “Individual Responses to Comments on the Draft EIR.” In that chapter, the reader is referred back to these master responses as appropriate.

### 2.2 MASTER RESPONSE 1: HYDRAULIC IMPACTS OF THE NLIP

#### 2.2.1 INTRODUCTION

In response to several comments received on the DEIR that question whether SAFCA’s approach to evaluating hydraulic impacts is reasonable, SAFCA has prepared the following master response.

#### 2.2.2 DETERMINING THE SIGNIFICANCE OF HYDRAULIC IMPACTS

CEQA requires lead agencies to determine whether “the proposed project [would] expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam” (State CEQA Guidelines, Appendix G, Section VIII, i). SAFCA has historically made this determination by evaluating the potential effects of its levee improvement projects on water surface elevations in the stream and river channels in the project area and in the larger watershed within which the project is situated. This approach was used to evaluate the flood related impacts of the Natomas Levee Improvement Program (NLIP). Specifically, SAFCA’s engineering consultant, MBK Engineers, used a UNET hydraulic computer model to compare existing conditions in the waterways surrounding the Natomas Basin and in the larger Sacramento River Flood Control Project (SRFCP) with and without the project. The analysis consisted of calibrating the hydraulic model to historic flood events using high-water marks and stream gage data, modeling the “with” and “without” project condition under several flood scenarios, and determining whether the proposed project would produce a significant difference in the relevant water surface elevations.

The results of this analysis were initially presented in Chapter 4.4, “Hydrology and Hydraulics,” and Appendix C, “Hydraulic Modeling Results,” of the program-level EIR on Local Funding Mechanisms for Comprehensive Flood Control Improvements for the Sacramento Area, which was certified by the SAFCA Board of Directors in February 2007. Using the same methodology, the analysis was performed again and presented in Chapter 3.4,

“Hydrology and Hydraulics,” of the DEIR for the NLIP Landside Improvements Project. In both cases, the modeling showed that the proposed NLIP improvements would not increase the “1957” water surface profiles that serve as the minimum design standard for all reaches of the SRFCP and would not substantially increase the 100-year or “200-year” water surface elevations in any urban areas upstream or downstream of the project study area. On this basis, both EIRs concluded that the NLIP improvements would not cause any significant hydraulic impacts.

A surface water elevation increase of 0.1 foot was used as a threshold for determining potential a significant impact because it represents a minimum change from existing conditions. As discussed on pages 3.4-6 and 3.4-7 of the DEIR, a 0.0 foot increase in both the “1957,” “100-year,” and “200-year” water surface profiles would result with implementation of the NLIP Landside Levee Improvement Project.

### **2.2.3 THE EIR’S TWO-THRESHOLD APPROACH IS CONSISTENT WITH THE FRAMEWORK HISTORICALLY USED TO MANAGE THE SRFCP**

The perimeter levee system around the Natomas Basin is part of a larger integrated system of levees, dams, and bypass channels known as the SRFCP that encompasses five historic flood basins in the Sacramento Valley (Colusa, Sutter, Feather, Yolo and American Flood Basins) and the subbasins contained therein. Planning, design, and construction of the SRFCP has been ongoing since the early 1900s under the leadership of the U.S. Army Corps of Engineers (USACE) and the State of California (state), with local levee and reclamation districts playing the principal role in operating and maintaining the system.

Initially, the river channel and bypass levees in each segment of the system were constructed based on a standard geometry. The levees were designed with a predetermined freeboard allowance tied to specified flows and associated water surface profiles generally matched to observed conditions during the 1907 and 1909 floods. Over time, the standard freeboard allowance of each levee section was increased because of numerous levee failures. The minimum standard levee changed from a levee with a top width of 10 feet to one with a top width of 20 feet. In addition, the design flows were modified substantially on the Feather and American Rivers. This was the result of floods that occurred after 1909, which demonstrated these rivers could produce substantially greater flows than occurred during the 1907 and 1909 floods. Because numerous levee failures occurred along the Feather River levees between 1920 and 1934, the levees were set back and enlarged to accommodate greater flows. These changes were summarized in design memorandums, which define the minimum freeboard requirements for each segment of the SRFCP, collectively referred to as the “1957 profile.” Over the years, the system capacity of the SRFCP was also greatly expanded by the construction of five major multiple-purpose reservoirs (Shasta, Black Butte, Oroville, New Bullards Bar, and Folsom Reservoirs) containing 2.7 million acre-feet of dedicated flood space.

The record floods of 1986 and 1997 triggered additional system modifications. Although these floods were significantly larger than the 1907 and 1909 floods, the availability of reservoir storage largely prevented flows in the system from exceeding the design of the SRFCP. Nevertheless, numerous project levees experienced unexpectedly severe stress and some failed. This experience caused the USACE, the state, and their local partners to perform a series of geotechnical evaluations on the SRFCP’s levees and to adopt new, more rigorous levee design standards for urban areas, including standards for seepage through and under project levees. To meet these new standards, USACE, the state, and local flood control agencies have made substantial investments in addressing identified deficiencies in levees throughout the SRFCP and in improving the level of flood protection provided by the levees, particularly in urban areas.

Although the SRFCP and its design standards have evolved over the years based on experience, new engineering tools and analysis, and changes in public policy, this evolution has occurred within a system management framework that has allowed necessary adaptations to the system without undermining its basic operational principles. These principles are discussed below.

The SRFCP is not intended to provide a uniform level of flood protection (statistical probability of flooding) to the various subbasins within the protected area. Rather, each subbasin is protected by levees that at least meet the SRFCP's minimum geometrical standards, including freeboard reflecting the water surface profile prescribed for that segment of the system. Each subbasin's protection is dependent on the fitness of its own levees and not on the condition (or failure) of any other subbasin's levees. Accordingly, each subbasin has the right to keep its levees in the fittest possible condition to ensure that these levees will perform as reliably as possible in a flood.

## **2.2.4 EFFECT OF THE NLIP ON SRFCP FUNCTION AND OPERATIONS**

Even the most modest levee-tending activity, such as eradicating rodent burrows, has the potential to trigger a "transfer of risk," at least in theory. Yet there are currently no data and modeling tools available to quantify such transfers of risk and assess their significance. One of the SRFCP's most important accomplishments is to avoid this problem by relying on the more practical and measurable indicator of a change in water surface elevation, using this measure as the guideline for evaluating the effects of levee-tending activity. Because the SRFCP is designed to operate as an integrated system based on prescribed water surface elevations, the "transfer of risk" that may occur when a subbasin improves the fitness of its levees is not considered to adversely affect the performance of the SRFCP with respect to other subbasins as long as the improvement activity does not alter any water surface elevations designed by the SRFCP. Under this water surface elevation guideline, levee and reclamation districts can operate and maintain their levees (and thus reduce flood damages without engaging in overly complex "transfer of risk" arguments) unless there is evidence that their levee fitness activities will cause a change in a relevant design water surface profile. If the activities of these levee and reclamation districts would produce a significant adverse change in a water surface profile prescribed by the SRFCP, then the district would be expected to offset the adverse impact.

It is clear that levee-tending activities involving physical changes in the geometry of the river channel are the activities most likely to cause changes in water surface elevations prescribed by the SRFCP. These types of activities include placement of fill or construction of structures in the floodway, construction of new levees, relocation of existing levees, excavation within the floodway, construction of large berms for protecting riverbanks, raising an existing levee (waterside raise), construction of a new bypass, and planting of vegetation within the floodway. Improvement activities on the land side of a levee also require evaluation. Such activities include placing a slurry wall in a levee, adding a seepage berm to a levee, placing a field of seepage relief wells along a levee, raising a levee (landside raise), widening a levee (increase top width), and relocating a seepage ditch.

Three design water surface elevations should be considered when determining whether a levee-tending activity would result in an adverse impact to a SRFCP levee. First, the elevations prescribed for each segment of the SRFCP must be considered. These elevations are referred to as the "1957 profile" and they define the minimum freeboard requirements for each segment of the SRFCP. Second, because of the participation of virtually all communities protected by segments of the SRFCP in the National Flood Insurance Program, the 100-year water surface profile must be considered. Third, because the California Legislature has now established "200-year" flood protection as the appropriate standard of flood protection for all urban areas within the SRFCP, the "200-year" water surface profile must also be considered. (Statutes of 2008, Chapter 364 [adding Water Code Section 9602(i)]).

In determining whether a proposed improvement or activity could result in changes to these water surface profiles, the standard analysis procedure is to use hydrologic and hydraulic computer modeling tools such as, HEC-1, HEC-2, UNET, HEC-RAS, RMA2, FESWMS, etc. The analysis consists of calibrating the hydraulic model to historic flood events using high-water marks and stream gage data. The calibration activity is normally conducted on systemwide instead of a site-specific basis. However, data available for computer model calibration can be sparse or nonexistent. In addition, assumptions must be made regarding reservoir operations. Because all of the reservoirs that contribute to the operation of the SRFCP (Shasta, Black Butte, Oroville, New Bullards Bar and Folsom) are governed by water control manuals issued by USACE, current reservoir operations are assumed

to continue except where it is reasonably foreseeable that the current operation could change (as in the case of Folsom Dam and Reservoir, where Congress has directed USACE to formalize the variable space storage operation that has been in effect by agreement between SAFCA and the U.S. Bureau of Reclamation since 1995).

Once the model is calibrated, the “with project” condition is compared to the “without project” condition under several flow conditions (1957 profile, 100-year FEMA flood, and “200-year” urban flood) to determine whether a difference exists in water surface elevations under these different conditions. This analysis is complicated because, for the 100-year flood and “200-year” flood, it involves assumptions about the performance of project levees under flow conditions that exceed the minimum design of the SRFCP and thus involve the possibility of levee failure. As noted above, the design of the SRFCP was not historically based on assumed levee failures. On the contrary, the design assumed no levee failures but included five engineered diversions and one natural overflow diversion. The natural diversion is to Butte Basin, which is upstream from the SRFCP levees. This diversion did not include flow easements because Butte Basin is a historic flood basin. The five engineered diversions include two diversions to Butte Basin (Moulton and Colusa Weirs), one diversion to the Sutter Bypass (Tisdale Weir), and two diversions to the Yolo Bypass (Fremont and Sacramento Weirs). All of the engineered diversions included the acquisition of property rights to support the diversions. The deliberate planning, construction, and maintenance of the diversions assured that they would function during flood conditions and serve as reliable features of the flood project.

The historic record of SRFCP levees under high flow conditions does not reveal a direct relationship between river stage and levee performance, particularly given the potential for flood fighting activities to influence this relationship. This greatly complicates the challenge of establishing reasonable assumptions on which to conduct hydraulic modeling evaluations. Most hydraulic modeling efforts make the simplifying assumption that a levee fails when the water surface reaches a defined elevation. The most common failure scenarios consider the following:

- (a) Assume levee fails when water level exceeds top of levee by 0.5 feet.
- (b) Assume levee fails when water level reaches top of levee.
- (c) Assume levee fails when water exceeds design stage by 1.5 feet.
- (d) Assume levee fails when design stage is exceeded.

The performance of the Reclamation District (RD) 784 levee on the Yuba River highlights the problems associated with these scenarios. This levee has never been overtopped; however, during the 1955 flood, the water surface level reached to within 0.5 feet of the top of the levee and the levee did not fail. Although not quite reaching the limit described by scenario (b), the water surface did exceed the levels specified by scenarios (c) and (d). These scenarios would have incorrectly assumed a levee failure and overestimated the beneficial effect of a levee failure to adjacent or downstream areas during the 1955 flood. During the 1986 flood, the maximum water level was approximately 4.5 feet below the top of the levee; however, the levee failed after the peak stage when the water level was approximately 6.6 feet below the top of the levee. All of the above scenarios would have assumed no levee failure. Because the levee failure occurred approximately 24 hours after the peak stage, the adjacent or downstream areas did not receive any benefit in peak stage reduction. During the 1997 flood, the maximum water level was 2.5 feet below the top of levee and the levee did not fail. Scenario (d) would have assumed a levee failure and would have overestimated the benefit a levee failure would have provided to the adjacent or downstream areas.

The only documented SRFCP levee overtopping that did not result in a levee failure occurred in 1995, when the Cache Creek levees were overtopped by approximately 0.1 to 0.2 feet and did not fail. An extensive flood fight was conducted by the California Department of Water Resources (DWR) forces to save the levee during this event. There were many instances in 1986 and 1997 when a levee did not fail even though scenarios (c) and (d), above, would have predicted failures. These locations were primarily along Feather River, American River, and Yolo Bypass areas in 1997, and Sacramento River, American River, and Yolo Bypass areas in 1986. Extensive flood fight activities took place during these floods. Flood flows were near or exceeded SRFCP design levels

during these floods. It is interesting to note that current USACE design criteria would not find these areas to have “certifiable” levees.

In short, the historic record does not reveal a direct relationship between river stage and levee failure, particularly given the potential for flood fighting activities to influence this relationship. The state holds flood fighting schools annually before the start of the flood season. Participants at the training learn how to construct a temporary levee raise, provide protection to the levee from overtopping and wind and wave attack, and learn how to deal with underseepage (boils).

For purposes of evaluating the hydraulic effects of the NLIP, SAFCA employed levee failure scenario (a), because it is reasonable, practical, is easily understood, and because a sensitivity analysis indicated that the estimated hydraulic characteristics would be the same for each of the level failure scenarios analyzed. In addition, because the NLIP improvements are based on a levee design profile calculated assuming that SRFCP levees do not fail when overtopped, SAFCA added a “no levee failure” scenario to the modeling effort. In each case, the hydraulic modeling study assumed that all SRFCP levees in nonurban areas would be raised to their design heights (designated freeboard above the SRFCP design water surface profile) as part of the state’s ongoing levee repair program. Several of these levees overtopped in the 100-year and “200-year” modeling runs. In scenario (d), it was assumed that this overtopping would result in a levee breach with water leaving the adjacent river channel through the breach. In the “no levee failure” scenario, the overtopped levee was assumed to act as a weir, allowing water to leave the adjacent river channel over the top of the levee without a breach occurring. None of the existing NLIP levees failed under either of these scenarios. Accordingly, in both cases it was determined that increasing the height of the NLIP levees would not increase the 1957 water surface profiles in any project reach and would not increase the 100-year or “200-year” water surface elevations in any urban areas upstream or downstream of the project study area.

## **2.2.5 THE APPROACH USED IN THE NLIP HAS BEEN ADOPTED BY THE STATE LEGISLATURE**

In September 2007, the state legislature enacted the Central Valley Flood Protection Act of 2008 (Act), Water Code Section 9600 et seq., which was signed into law by the governor in October 2007. The Act is based on the following findings:

- ▶ The Central Valley of California is experiencing unprecedented development, resulting in the conversion of historically agricultural lands and communities to densely populated residential and urban centers.
- ▶ The legislature recognizes that by their nature, levees, which are earthen embankments typically founded on fluvial deposits, cannot offer complete protection from flooding, but can decrease its frequency.
- ▶ The legislature recognizes that the level of flood protection afforded rural and agricultural lands by the original flood control system would not be adequate to protect those lands if they are developed for urban uses, and that a dichotomous system of flood protection for urban and rural lands has developed through many years of practice.
- ▶ The legislature further recognizes that levees built to reclaim and protect agricultural land may be inadequate to protect urban development unless those levees are significantly improved.
- ▶ Cities and counties rely upon federal floodplain information when approving developments, but the information available is often out of date and the flood risk may be greater than that indicated using available federal information.
- ▶ The legislature recognizes that the current federal flood standard is not sufficient to protect urban and urbanizing areas within flood prone areas throughout the Central Valley.

(Statutes of 2007, Chapter 364, Section 9.)

Based on these findings, the Act embraces a new flood protection standard for urban areas (defined as “developed areas in which there are 10,000 residents or more”) located in levee protected floodplains in the Central Valley. This new “urban level of flood protection” is defined as “the level of protection that is necessary to withstand flooding that has a 1-in-200 chance of occurring in any given year using criteria consistent with, or developed by, the Department of Water Resources.” (Statutes of 2007, Chapter 364 [adding Water Code Section 9602(i)].)

Consistent with this new state standard, the legislature also approved “the project features necessary to provide a 200-year level of flood protection along the American and Sacramento Rivers and within the Natomas Basin as described in the final engineer’s report dated April 19, 2007, adopted by the Sacramento Area Flood Control Agency.” (Statutes of 2007, Chapter 641 [amending Water Code Section 12670.14(b)]) Moreover, in connection with this approval, the legislature adopted the following findings and declarations (Statutes of 2007, Chapter 641, Section 1[k]):

As evidenced by the environmental impact reports certified in connection with these projects, including the hydrology and hydraulics impact analysis set forth in the environmental impact report prepared by the Sacramento Area Flood Control Agency with regard to local funding mechanisms for comprehensive flood control improvements for the Sacramento area dated February 2007, the increase in flood protection associated with improving the American and Sacramento River levees and modifying Folsom Dam will be accomplished without altering or otherwise impairing the design flows and water surface elevations prescribed as part of the Sacramento River Flood Control Project. Accordingly, these improvements will not result in significant adverse hydraulic impacts to the lands protected by the Sacramento River Flood Control Project. Thus, it is not necessary or appropriate to require these projects to include hydraulic mitigation.

The projects authorized in Section 12670.14 of the Water Code will increase the ability of the existing flood control system in the lower Sacramento Valley to protect heavily urbanized areas within the City of Sacramento and the Counties of Sacramento and Sutter against very rare floods without altering the design flows and water surface elevations prescribed as part of the Sacramento River Flood Control Project or impairing the capacity of other segments of the Sacramento River Flood Control Project to contain these design flows and to maintain water surface elevations. Accordingly, the projects authorized in that section will not result in significant adverse hydraulic impacts to the lands protected by the Sacramento River Flood Control Project and neither the Reclamation Board nor any other state agency shall require the authorized projects to include hydraulic mitigation for these protected lands.

SAFCA’s hydraulic impact analysis assumes that portions of the levees on the west side of the Sacramento River opposite the Natomas Basin will be raised to meet the minimum freeboard requirements of the SRFCP but not the more rigorous standard for urban development adopted by the state legislature. This assumption is consistent with the current agricultural zoning of the subbasin protected by these levees and with the standards adopted by the legislature in connection with the Central Valley Flood Protection Act, which tie the prospects for urban development in SRFCP subbasins to achievement of at least a “200-year” level of flood protection within the next two decades. (Statutes of 2008, Chapter 364, Sections 1–6.)

Efforts to meet this standard in existing urban and urbanizing SRFCP subbasins (Sacramento, including Natomas; West Sacramento, including Southport; Marysville, including Reclamation District 784 [Plumas Lakes]; and Yuba City, possibly including Live Oak) demonstrate the enormous cost and difficulty of this undertaking, even in areas that start with a substantial urban population. As a practical matter, it is not reasonably foreseeable that the subbasin across from Natomas, which has virtually no population base and a very large levee perimeter that would have to be upgraded, could meet this challenge. Accordingly, it is reasonable for SAFCA’s hydraulic modeling evaluation to assume that the levees protecting this area will be raised to meet the minimum standards

of the SRFCP but not the more demanding urban protection standard that has been adopted by the state legislature.

## **2.2.6 “200-YEAR” FLOOD CRITERIA AND FREEBOARD REQUIREMENTS**

The design of the NLIP calls for the Natomas levees to be strengthened to minimize the risk of levee failure caused by the potential for through- and underseepage generated by the water surface elevations around the Natomas Basin that would result from a “200-year” flood event in the Sacramento-Feather and American River watersheds (assuming no levee failures across or upstream from the project area). Although this water surface elevation would be contained by the current perimeter levee system, the NLIP also calls for the levees to have 3 feet of freeboard above this design water surface elevation. This freeboard requirement originates in the regulations of the Federal Emergency Management Agency and the engineering practice of DWR, which has been mandated to develop design standards for providing a “200-year” level of flood protection for urban areas protected by levees in the Central Valley.

This freeboard requirement is intended to address hypothetical uncertainties in levee performance and hydrology and hydraulics. However, its more critical purpose is to address the potential for wind and wave run-up generated by conditions produced by the “200-year” design water surface elevations. An analysis prepared for SAFCA by Mead & Hunt indicates that under reasonably foreseeable wind conditions, this water surface elevation could generate waves up to 2.5 feet in height along the reach of the east levee of the Sacramento River extending from the mouth of the Natomas Cross Canal to Powerline Road. Without the freeboard called for in the NLIP design, these waves could overtop the levee and potentially cause its failure. Thus, the freeboard is needed to ensure safe containment of the “200-year” design flood.

Although it is conceivable that this freeboard could also serve to contain river flows in excess of the “200-year” design, the potential to experience sustained water surface elevations above this level is considered extremely unlikely, speculative at best, and not reasonably foreseeable. While the “200-year” design conservatively assumes no upstream levee failures, it is unreasonable to extend this “no levee failure” assumption to even more extreme flood events. If the upstream levees are assumed to fail in floods greater than the “200-year” event, then the “200-year” “no levee failure” elevation likely represents a worst-case scenario for the Sacramento River channel and the Natomas Cross Canal. For example, SAFCA’s modeling shows that a “500-year” flood with upstream levee failures would produce water surface profiles in the Sacramento River channel that would be about 1 foot lower than the NLIP “200-year” design profile, and thus well within the current height of the levee, because the assumed failures allow flood waters to be stored in the upstream floodplains rather than having to be conveyed through the system during peak flow periods.

## **2.2.7 IMPACTS ON GARDEN HIGHWAY RESIDENCES**

The discussion presented in Section 2.2.4 demonstrates that implementation of the NLIP would not cause the SRFCP operations to be altered, therefore, the principal risks of flood damage to existing Garden Highway residences would continue to be either inundation by the water surface elevations that are unchanged by the NLIP or damage by the wind and wave run-up generated during these water surface elevations. In either event, the risk of damage is the same under the “with” and “without” project conditions. Moreover, if under the “without” project conditions, these wind and wave conditions were to fail the Garden Highway levee, some waterside residences could be engulfed by the resulting levee breach, while the rest of these residences would become uninhabitable once the Natomas Basin became fully inundated. Given the severity of the storm that would be required to create these conditions, this inundation would likely last for several weeks, if not months. Interior roadways would be unusable and the landside of the Garden Highway would likely be destabilized by ponded water and wind and wave action. Portions of the roadway would slough away and the entire road would become impassable, leaving Garden Highway residents with no land-based access to their homes. These conditions would be alleviated by the project because the freeboard added to the Sacramento River east levee would prevent a potential wind- and wave-induced levee failure.

## **2.2.8 CONSIDERATION OF USE OF YOLO AND SACRAMENTO BYPASS SYSTEMS TO CONVEY FLOOD WATERS**

SAFCA has given extensive consideration to the feasibility of improving flood water conveyance through the Yolo and Sacramento Bypass systems. In 2003, SAFCA made substantial investments in hydraulic studies and analyses of the improvements that would be required to move more flood water into and through the Yolo Bypass during large flood events in the Sacramento-Feather River watershed to reduce flows and water surface elevations in the Sacramento River channel downstream of the Fremont weir.

The Lower Sacramento River Regional Project Initial Report (SAFCA 2003) indicated that this could be accomplished by widening the Fremont weir, setting back the levees on the east side of the Yolo Bypass, discharging flows into the Sacramento Deep Water Ship Channel and eliminating low elevation levees at the lower end of the Yolo Bypass. However, these improvements would be extremely costly and time consuming to implement; they would occur entirely outside SAFCA's jurisdiction, and would require extraordinary cooperation among affected federal, state, and local interests; and they would not resolve the seepage problems affecting the Sacramento River east levee and the Natomas Cross Canal south levee. For these reasons, as explained in Section 7.1.2.3, "Alternatives Considered but Rejected from Further Consideration," of the DEIR on Local Funding Mechanisms for Comprehensive Flood Control Improvements for the Sacramento Area, SAFCA concluded that this alternative would not achieve the objectives of the NLIP and, therefore, it was not carried forward for further analysis. Nevertheless, regionally oriented improvements to the Yolo and Sacramento Bypass systems are of long-term interest to SAFCA, independent of the NLIP, and SAFCA fully intends to cooperate with any federal, state, or local initiative that has the potential to move such improvements forward.

## **2.3 MASTER RESPONSE 2: BIOLOGICAL RESOURCES AND HABITAT MITIGATION**

Several commenters state that the DEIR does not provide sufficient detail regarding impacts to Swainson's hawks and giant garter snake (GGS) and mitigation for such impacts. This master response is intended to provide more detail of specific impacts and habitat creation and enhancement commitments related to these species for 2008 project activities. Project components to be implemented in 2009–2010 are addressed at a programmatic level in the DEIR, because sufficient detail is not available at this time to address them at a project level. However, the approach used here for 2008 will be repeated for 2009–2010 in subsequent project-level CEQA analyses.

### **2.3.1 GIANT GARTER SNAKE**

In 2008, a total of 243.5 acres of potentially suitable habitat for giant garter snake (240 acres of rice, 1.5 acres of irrigation/drainage canal and ditch, and 2 acres of upland) is anticipated to be permanently lost as a result of project implementation. In addition, a total of 116 acres would be temporarily disturbed (40 acres of rice used for borrow and converted to managed marsh, 1 acre of canal, and 75 acres of upland). To compensate for the habitat effects in 2008, a total of 83 acres of habitat would be created (40 acres of managed marsh, 24 acres of irrigation/drainage canal, and 19 acres of upland adjacent to canals), and 160 acres of existing rice land would be preserved as indicated in Table 2-2.

Table 2-27 of the DEIR has been updated to reflect these acreages.

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J2 Phase 3 FEIR Master Response:  
Sacramento River East Levee Prism and  
Master Response: 24/7 Cutoff Wall Construction

## 2.2.2 MASTER RESPONSE: SACRAMENTO RIVER EAST LEVEE PRISM

Several comment letters stated that the Phase 3 DEIS/DEIR did not provide enough information to fully explain the levee prism concept, the adjacent setback levee footprint, and potential construction-related impacts to vegetation and improvements. SAFCA has prepared the following response regarding the levee prism.

**Plate 4** shows a typical profile view of the existing levee along the east side of the Sacramento River in comparison to the adjacent setback levee proposed for the Phase 3 Project (Reaches 5A–9B). The prism for the existing levee consists of:

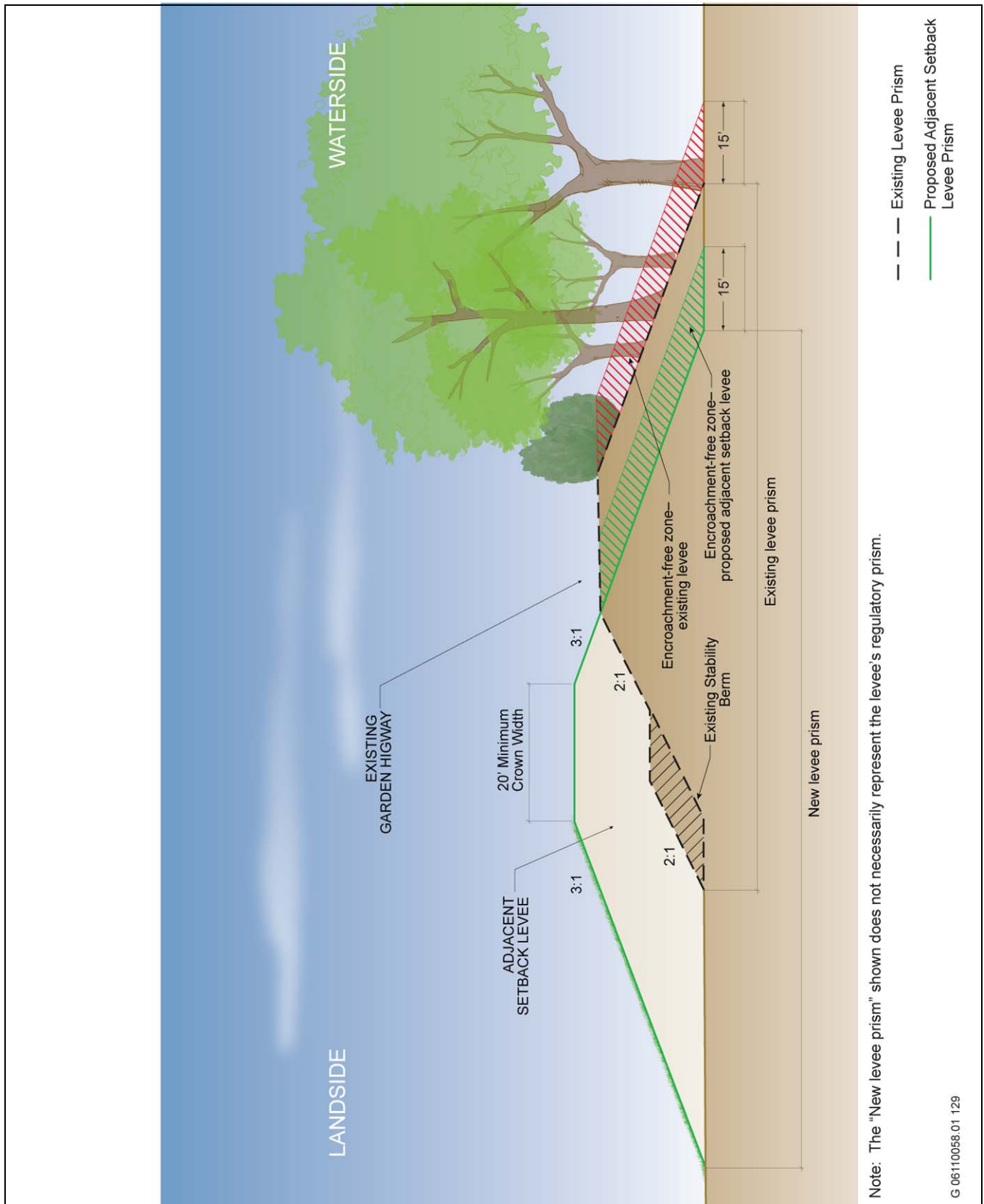
- ▶ the levee crown (a minimum of 20 feet wide), on which the Garden Highway currently sits;
- ▶ a landside levee slope, typically 2H:1V
- ▶ a landside stability berm; and
- ▶ a waterside slope that is defined by a projected 3H:1V slope from the waterside hinge point of the levee crown that may or may not be exposed depending upon natural ground surfaces and property improvements, such as construction fill for foundations and driveways.

The prism of the proposed adjacent setback levee would consist of:

- ▶ a minimum 20-foot crown,
- ▶ a 3H:1V landside slope from the hinge point of the levee crown,
- ▶ an exposed upper waterside slope from the hinge point of the adjacent levee crown to the landside of Garden Highway, and
- ▶ the continuation of a projected (non-exposed) minimum 3H:1V waterside slope through the existing levee to a point that would be set back a minimum of 15 feet from the existing waterside toe.

The setting back of the Sacramento River east levee under the Proposed Action would provide the USACE-required 15 feet of clearance of encroachments (including vegetation greater than 2 inches in diameter) from the theoretical waterside toe of the new adjacent setback levee. As shown on **Plate 4**, this approach would shift the encroachment-free zone landward, potentially reducing the extent to which USACE, the State, SAFCA, and RD 1000 would require the removal of existing encroachments to meet this requirement under the Levee Raise-in-Place Alternative. The impact of the removal of waterside vegetation greater than 2 inches that would potentially occur in the event of that the adjacent setback levee would not be constructed was analyzed in the Phase 3 DEIS/DEIR under Impact 4.8-a, “Loss of Woodland Habitats,” under the Levee Raise-in-Place Alternative. This loss was estimated to be up to 22 acres for Reaches 5A–9B.

As described in Section 2.3.5, “Additional Actions to Meet FEMA, USACE, and State Design Requirements: Encroachment Management,” of the Phase 3 DEIS/DEIR, the adjacent setback levee proposed as part of the Phase 3 Project would be designed to significantly reduce conflicts between waterside encroachments and applicable USACE levee operation and maintenance requirements. However, the full extent of this reduction cannot be known until the proposed levee improvements are completed, and USACE, the State, SAFCA, and RD 1000 have inspected and evaluated whether there are any encroachments that affect the integrity of the levee. Section 1.4.2.1,



Source: Adapted by EDAW in 2009 based on data provided by HDR in 2009

**Levee Prism Concept for the Sacramento River East Levee**

**Plate 4**

“Encroachment,” in the Phase 3 DEIS/DEIR has been revised to reflect the fact that removal of any encroachments that could be identified as threatening levee integrity would be subject to future environmental review. See Chapter 4.0, “Revisions to the DEIS/DEIR,” of this FEIR for the text revision.

## **2.2.5 MASTER RESPONSE: 24/7 CUTOFF WALL CONSTRUCTION**

Numerous comment letters expressed concern about 24 hour-per-day, 7 days-per-week (24/7) construction activities associated with cutoff wall construction. Specifically, commenters requested a more detailed engineering explanation of why 24/7 cutoff wall construction work would be necessary, consideration of using multiple pieces of equipment at once to increase the productivity rate, resident relocation allowances, anticipated duration of potential relocation for residents within 500 feet of construction, and that SAFCA appears to be placing a higher priority on speed rather than environmental impacts. SAFCA has prepared the following response to these concerns.

Normal hours for construction would be from 6:00 a.m. to 8:00 p.m. as stated in the Phase 3 DEIS/DEIR. Installation of cutoff walls during night hours (from 8:00 p.m. to 6:00 a.m.) would be necessary to maintain the construction schedule and install a quality cutoff wall. The 24/7 construction is required due to regional and national demand for the long-stick excavators and deep soil mixing equipment that are needed for cutoff wall construction, the relatively short levee construction window (May 1 through November 1), the potential for wall imperfections that result from sand in the slurry trench settling to the bottom when work progress is interrupted, and the requirement that the cutoff wall be allowed to cure for at least 4 weeks before completing construction of the encapsulating adjacent levee.

It is anticipated that the 24/7 cutoff wall construction would occur Monday through Saturday, with Sunday reserved for equipment maintenance. However, if unanticipated events occur, cutoff wall construction could also be conducted on Sundays. Lights and power generators would be used during nighttime construction hours. Additional equipment would include cutoff wall rigs, excavators, generators, pumps, support vehicles, and other ancillary equipment. The cutoff wall would be installed in several headings. The number and locations of the headings would be dependent on the project schedule and contractor preference. Each cutoff wall rig would move continuously along the proposed alignment to ensure an uninterrupted cutoff wall and to reduce prolonged disturbance to adjacent residences. Each cutoff wall rig can move between 50 and 100 feet horizontally during a twelve-hour work shift.

As stated in the Phase 3 DEIS/DEIR, residents in or near the affected work area would be afforded the opportunity, at SAFCA’s expense, to temporarily relocate to a nearby hotel for as long as the 24/7 schedule persists within 500 feet of their residence (see Mitigation Measure 4.14-a, “Implement Noise-Reducing Construction Practices, Prepare a Noise Control Plan, and Monitor and Record Construction Noise Near Sensitive Receptors”). The 500-foot distance was determined to be the distance at which models indicate that noise levels from cutoff wall construction equipment (deep soil mixing equipment or long-stick excavators) would be at or below 60 dBA  $L_{dn}$ , which is the standard for exterior night time noise levels established by Sacramento County and the City of Sacramento, as stated in Section 4.14, “Noise,” of the Phase 3 DEIS/DEIR. Based on this distance of 500 feet from construction equipment, in the worst case, residents in the vicinity of cutoff wall construction could be affected by round-the-clock construction for approximately one week as the cutoff wall is installed along the levee.

The 500-foot distance is modeled based on the assumption that sensitive receptors are located in the line-of-sight from the noise source. Additional reductions in noise levels would come from natural sound barriers, such as existing levees or other structures, including dwellings. For example, cutoff walls along the Sacramento River east levee would be constructed on the land side of the levee at an elevation below the crown of the levee. Therefore, the existing levee would provide some shielding to residents on the water side of the Garden Highway, reducing exterior noise levels at 500 feet by an additional 10–12 dB below the predicted level of 60 dBA  $L_{dn}$ . This

estimate is based on the assumption that cutoff wall construction equipment would generate noise at the level of 10 feet above ground surface, and the height of the existing levee is 25 feet above ground surface. Waterside residences would be out of the line-of-sight of this equipment.

Residences located adjacent to the NEMDC west levee, where cutoff wall construction would also be conducted as part of the Phase 3 Project, would not be shielded by the existing levee because construction would take place on top of the degraded levee. However, for residents not located immediately adjacent to the levee, intervening building façades and ground absorption would significantly reduce noise levels, and residents located at or beyond 500 feet from construction would likely experience noise levels below the exterior noise standard of 60 dBA  $L_{dn}$  due to these obstructions and the increasing distance from the noise source.

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J3 Phase 3 FEIR:  
U.S. Environmental Protection Agency Letter and  
USACE/SAFCA Response



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105-3901

April 3, 2009

Ms. Elizabeth Holland  
Planning Division  
Sacramento District  
U.S. Army Corps of Engineers  
1325 J Street  
Sacramento, California 95814-2922

Subject: Draft Environmental Impact Statement (DEIS) for the Natomas  
Levee Improvement Program, Phase 3 Landside Improvements Project  
(CEQ# 20090040)

The U.S. Environmental Protection Agency (EPA) has reviewed the above-referenced document pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act.

EPA previously reviewed the DEIS and Final EIS (FEIS) for 408 Permission and 404 Permit to Sacramento Area Flood Control Agency (SAFCA) for the Phase 2 Landside Improvements Project and programmatic evaluation of the entire Natomas Levee Improvement Program (NLIP). We provided comments to the U.S. Army Corps of Engineers (Corps) on August 4, 2008 and December 11, 2008, expressing concerns because of our inability to determine whether or not the preferred alternative represents the Least Environmentally Damaging Practicable Alternative (LEDPA). We also expressed concern with the residual flood risk to development in a floodplain protected by levees, and the indirect and cumulative environmental effects of planned development facilitated by this levee project.

F2-1

We continue to have concerns regarding the residual flood risk and the potential indirect and cumulative impacts of future development. We recommend implementation of the Natomas Basin flood safety plan (pps. 2-40 to 2-41) as soon as possible and prior to approval of additional development, so that new development does not compromise the flood-damage-and-risk-reduction achievements of this project.

F2-2

While we commend efforts to avoid and fully compensate for the loss of riparian woodland, Giant garter snake habitat, wetlands, and Swainson's hawk habitat; we continue to have concerns with 371.48 acres of temporary effects and 36.75 acres of permanent effects on waters of the United States (US) for all four phases of the Natomas Levee Improvement Program (2008 – 2010) (p. ES-12, Phase 2 FEIS, November 2008). We recommend continued close consultation and collaboration with the U.S. Fish and

F2-3

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Wildlife Service, California Department of Fish and Game, The Natomas Basin Conservancy, SAFCA, and Sacramento Area Council of Governments to ensure effects on woodlands, threatened and sensitive species habitat, and waters of the US are avoided and minimized.

F2-3  
Cont'd

Phases 1 to 4 of the Natomas Landside Improvement Project constitute an "early implementation project" to improve Natomas Basin perimeter levees to meet the 100-year flood protection design criteria adopted by the Federal Emergency Management Agency. The remaining segments of the perimeter levee system would be improved by the Corps to provide flood protection that would meet California standards for the "200-year" flood stage surface water elevation. The Corps plans to seek Congressional authorization for this additional work based on a General Re-evaluation Report for the American River Common Features Project to be presented to Congress in 2010 (p. ES-3). As a reasonably foreseeable future action, the Corps' proposed "200-year" levee improvement project should be included in the evaluation of cumulative effects in the FEIS for the NLIP Phase 3 Landside Improvements Project.

F2-4

Based on the above concerns, we have rated this DEIS as Environmental Concerns – Insufficient Information (EC-2) (see enclosed "Summary of Rating Definitions"). We appreciate the opportunity to review this DEIS. When the FEIS is released for public review, please send one hard copy and a CD ROM to the address above (mail code: CED-2). If you have any questions, please contact me at (415) 972-3521, or contact Laura Fujii, the lead reviewer for this project. Laura can be reached at (415) 972-3852 or [fujii.laura@epa.gov](mailto:fujii.laura@epa.gov).

F2-5

Sincerely,



Kathleen M. Goforth, Manager  
Environmental Review Office  
Communities and Ecosystems Division

Enclosures: Summary of Rating Definitions

cc: Ken Sanchez, U.S. Fish and Wildlife Service  
Robert Solecki, Central Valley RWQCB  
Jeff Drongesen, California Department of Fish and Game  
John Bassett, Sacramento Area Flood Control Agency

**U.S. Environmental Protection Agency Rating System for  
Draft Environmental Impact Statements  
Definitions and Follow-Up Action\***

**Environmental Impact of the Action**

**LO – Lack of Objections**

The U.S. Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

**EC – Environmental Concerns**

EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

**EO – Environmental Objections**

EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

**EU – Environmentally Unsatisfactory**

EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

**Adequacy of the Impact Statement**

**Category 1 – Adequate**

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

**Category 2 – Insufficient Information**

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

**Category 3 – Inadequate**

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

\* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.

- F2-1 USACE and SAFCA received U.S. Environmental Protection Agency's (EPA's) referenced comment letters (dated August 4 and December 11, 2008) on the Phase 2 EIS. Responses were provided in the Phase 2 FEIS (USACE 2008) and Record of Decision (ROD) (USACE 2009), respectively, which are in the record and were considered by USACE and SAFCA in their decision-making on the Phase 2 Project; the content of the letters was also considered during preparation of this FEIR.
- F2-2 Sacramento and Sutter County and the City of Sacramento have developed and are administering flood safety plans affecting the Natomas Basin within their respective jurisdictions. These plans will be updated as additional development in the Natomas Basin is approved.
- Section 2.5.1, "Residual Risk of Flooding," in the Phase 3 DEIS/DEIR describes SAFCA's ongoing efforts to manage the residual risk of flooding in the Natomas Basin, which would remain even with achievement of a "200-year" level of flood risk reduction. As noted in Section 2.5.1, these efforts include providing the state with a safety plan (including a flood preparedness plan, levee patrol plan, flood-fight plan, and evacuation plan). Additionally, SAFCA has implemented a development impact fee program with the objective of avoiding any substantial increase in the expected damage due to an uncontrolled flood as new development proceeds in the floodplain. The revenue generated by the fee program will be used to implement flood risk reduction measures on an ongoing basis and to further reduce flood risk as new development occurs in the floodplain (see also Response to Comment L3-9).
- F2-3 The Natomas Levee Improvement Program (NLIP) includes habitat conservation components as part of each project phase, as well as mitigation measures to avoid and minimize impacts to sensitive habitats and species. For example, Mitigation Measure 4.6-b, "Restore, Replace, or Rehabilitate Degraded SRA Habitat Function and Comply with Section 7 of the Federal Endangered Species Act, Section 1602 of the California Fish and Game Code, and Section 2081 of the California Endangered Species Act Permit Conditions," requires restoration, replacement or rehabilitation of degraded SRA habitat function and compliance with Section 7 of the Federal Endangered Species Act, Section 1602 of the California Fish and Game Code, and Section 2081 of the California Endangered Species Act Permit conditions; and Mitigation Measure 4.7-a, "Minimize Effects on Jurisdictional Waters of the United States, Complete Detailed Design of Habitat Creation Components and Secure Management Agreements to Ensure Compensation of Waters Filled, and Comply with Section 404, Section 401, Section 10, and Section 1602, Permit Processes," requires minimization of effects on jurisdictional Waters of the United States, completion of detailed design of habitat creation components and securing management agreements to ensure compensation of waters filled, and compliance with Section 404, Section 401, Section 10, and Section 1602, permit processes. SAFCA will continue to consult and collaborate closely with Federal, state, regional, and local agencies (including USACE, the U.S. Fish and Wildlife Service [USFWS], the California Department of Fish and Game [DFG], and The Natomas Basin Conservancy [TNBC]) on developing and implementing these measures. SAFCA is working closely with USACE on impacts to Waters of the United States for the NLIP through several NEPA documents covering Clean Water Act Section 404 approval, as well as several permit applications to fill Waters of the United States. SAFCA is also working closely with USFWS, the National Marine Fisheries Service (NMFS), DFG, and TNBC to ensure biological effects are avoided and/or minimized to the extent practicable.

Chapter 7.0, "Consultation and Coordination," of the Phase 3 DEIS/DEIR describes the consultation activities between USACE, SAFCA, USFWS, and DFG that have taken place in connection with the NLIP. Additionally, SAFCA has collaborated with TNBC on the planning, design, and long-term management of the NLIP's proposed habitat conservation components. This has involved multiple meetings and negotiations with the resource agencies and other Natomas Basin land managers such as Reclamation District (RD) 1000, and is ongoing. SAFCA has also coordinated with the Sacramento Area Council of Governments (SACOG), which endorsed SAFCA's White Paper in April 2006 (available on SAFCA's Web site at [www.safca.org](http://www.safca.org)), to discuss the regional implications of providing improved flood damage reduction to the Natomas Basin. USACE and SAFCA will continue to work collaboratively with USFWS, DFG, TNBC, and SACOG.

- F2-4 The Phase 1 Project, which was analyzed in the Local Funding EIR (SAFCA 2007a), has been constructed. The Phase 2, 3, and 4 Projects were fully analyzed in the Phase 2 EIR (SAFCA 2007b) and Phase 2 EIS (USACE 2008), and constitute the remainder of the NLIP Landside Improvements Project. This project-levée EIR is tiered from the above-mentioned documents and involves a portion of that bigger project. As described in Chapter 2.0, "Alternatives," in the Phase 3 DEIS/DEIR, where repairs are required in the Natomas Basin perimeter levee to address 100-year levee height deficiencies, SAFCA would repair the levee to meet the desired minimum of 3 feet of levee height above the "200-year" design water surface profile, thereby laying the groundwork for completion of "200-year" flood risk reduction over time. As part of the Phase 3 Project, the Sacramento River east levee improvements would be constructed with a levee crown at least 3 feet above the "200-year" design water surface profile. The existing height of the NEMDC west levee between Elkhorn Boulevard and Northgate Boulevard is anticipated to meet the "200-year" height requirement. Under SAFCA's approach, this would leave only a minor amount of work for USACE to complete the "200-year" improvements, primarily along the American River north levee and the NEMDC west levee between Elkhorn Boulevard and Sankey Road. These remaining repairs would make a minor contribution to the significant cumulative impacts that have been identified for the NLIP, as discussed in Chapter 5.0, "Cumulative and Growth-Inducing Impacts, and Other Statutory Requirements," in the Phase 3 DEIS/DEIR.
- F2-5 Comment noted; a copy of the FEIR, and subsequently the FEIS to be prepared by USACE, will be provided to EPA as requested.

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J4 Phase 3 FEIR:  
California Department of Fish and Game Letter and  
USACE/SAFCA Response



DEPARTMENT OF FISH AND GAME

http://www.dfg.ca.gov
North Central Region
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670
916-358-2900



April 9, 2009

John Bassett
Sacramento Area Flood Control Agency
1007 Seventh Street, 7th Floor
Sacramento, CA 95814

Subject: Comments on the Sacramento Area Flood Control Agency's February 2009, Draft Environmental Impact Report on the Natomas Levee Improvement Program Phase 3 Landside Improvement Project

Dear Mr. Bassett:

The California Department of Fish and Game (DFG) has reviewed the Sacramento Area Flood Control Agency's (SAFCA) February 2009, Draft Environmental Impact Report on the proposed Natomas Levee Improvement Program Phase 3 Landside Improvement Project (DEIR/EIS). As described in the DEIR/EIS, the project objectives include: 1) provide at least a 100-year level of flood protection to the Natomas Basin as quickly as possible, 2) provide "200-year" protection to the Natomas Basin over time, and 3) avoid any substantial increase in expected annual damages as new development occurs in the Basin.

S5-1

The DFG is providing comments on the DEIR/EIS as a trustee agency and a responsible agency. As trustee for the State's fish and wildlife resources, the DFG has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of such species. In this capacity the DFG administers the California Endangered Species Act (CESA), the Native Plant Protection Act (NPPA), and other provisions of the California Fish and Game Code that afford protection to the State's fish and wildlife public trust resources. As a responsible agency the DFG will review a Lake and Stream Alteration Agreement notification package for components of the proposed project.

Enforceable Mitigation Measures

CEQA Guidelines §§15126.4 (a)(1)(B) states that formulation of mitigation measures should not be deferred until some future time. Table ES-2 lists a number of mitigation measures for fisheries and aquatic resources (i.e. mitigation measures 4.6a and 4.7a), terrestrial biological resources (i.e. mitigation measures 4.8a, 4.8b, 4.9a, 4.9c, and 4.9f) that rely on future approvals or agreements with the Wildlife Agencies. These entities are entrusted with carrying out the Natomas Basin Habitat Conservation Program's (NBHCP's) permit conditions, Natomas Basin Conservancy (NBC), and agencies entrusted with providing public safety (Federal Aviation Administration (FAA) approval over mitigation on proposed borrow site / Sacramento Airport buffer lands), as a means

S5-2

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to bring identified significant environmental effects to below a level that is significant. As there is no guarantee that these approvals or cooperation with all of the above entities will ultimately occur, the DFG believes the above mitigation measures are potentially unenforceable and may not bring the impacts to fisheries and aquatic resources to below a level that is significant.

S5-2  
Cont'd

Mitigation measures should establish performance standards to evaluate the success of the proposed mitigation, provide a range of options to achieve the performance standards, and must commit the lead agency to successful completion of the mitigation. Mitigation measures should also describe when the mitigation measure will be implemented and explain why the measure is feasible. The DFG recommends the mitigation measures summarized in Table ES-2, include measures that are enforceable and do not defer mitigation details to some future time. The DEIR/EIS should identify the following items: how each measure will be carried out; who will perform the measures; when the measures will be performed; the performance standards and mechanisms for achieving success; and an assured source of funding to acquire and manage identified mitigation lands. The DEIR/EIS could describe a range of enforceable mitigation measures that will be implemented in instances where approval and cooperation with the entities identified above either does or does not occur.

S5-3

**CESA**

As we have done for previous phases of this project, the Department anticipates issuing an Incidental Take Permit (ITP) for this phase under the provisions of the California Endangered Species Act. Issuance of an ITP is subject to CEQA documentation. Because of this, it is critical that the CEQA analysis and the identification of specific mitigation measures be as thorough as possible in the EIR in order for us to be able to rely on the existing environmental document when making our CEQA findings for the ITP. The DFG may only issue a CESA permit if it is determined that impacts associated with the authorized take of the species are minimized, fully mitigated, and that adequate funding has been ensured to implement the mitigation measures. The DFG may only issue a CESA permit if it determines that issuance of the permit will not jeopardize the continued existence of the species. This determination will be made based on the best scientific information available and shall include consideration of the species capability to survive and reproduce, including the species known population trends and known threats to the species. Issuance of a CESA permit may take up to 180 days from receipt of an application for take authorization.

S5-4

**Potential Impacts to Special-Status Plant Species**

The DEIR/EIS states that three special-status plant species have the potential to occur within the project area, including Rose Mallow (*Hibiscus lasiocarpus*), Delta Tule Pea (*Lathyrus jepsonii* var. *jepsonii*), and Sanford's Arrowhead (*Sagittaria sanfordii*). The DEIR/EIS states: "no surveys have been conducted to confirm that the species in question are present in these habitats; however, surveys for special-status plants within the Phase 3 Project area will be conducted during the appropriate time for identification in 2009, before project construction". The DFG recommends focused rare-plant surveys be conducted at the appropriate time of year to identify any special-status plants which may be present within the project area. The results of these floristic

S5-5

surveys need to be evaluated in the final EIR/EIS along with appropriate minimization and mitigation measures. Compliance with CEQA is predicated on a complete and accurate description of the existing site conditions that will be altered if the proposed project is approved. Without a complete and accurate description of the existing plant flora in and around the project site the DEIR/EIS likely provides an incomplete analysis of project-related environmental impacts.

S5-5  
Cont'd

Mitigation measure 4.9a of the DEIR/EIS states: "if special-status plants are present in areas that cannot be avoided... affected plants may potentially be transplanted to the GGS/Drainage Canal, if feasible". The DFG has found transplantation of herbaceous plants is typically unsuccessful and should be considered experimental. Mitigation measures for any potentially unavoidable impacts to special-status plants should include additional measures to increase the chances of survival for the population in question. If special-status plants cannot be avoided during project activities, seed should be collected and propagated at a DFG approved nursery facility in order to provide additional plantings at an approved mitigation site. Additionally, a mitigation plan approved by the DFG should be developed, which includes a planting plan, monitoring plan, success criteria, and a remediation plan in the event that success criteria are not met. These mitigation sites should be permanently protected and managed in perpetuity.

S5-6

**Impacts to Swainson's Hawk and Other Raptor Species**

The DFG is concerned with potential impacts to raptor nesting behavior not currently addressed in the DEIR/DEIS. Page 2-25 of the DEIR/DEIS describes construction activities including the 24/7 construction of cutoff walls before the start of flood season (November 1), as well as an estimated 900-1,000 haul trips per day to deliver fill material to construct reaches 5A-9B of the Sacramento River east levee. The DFG believes that each of these activities could potentially result in significant impacts to nesting raptors including nest abandonment, starvation of young, and/or reduced health and vigor of eggs or nestlings that could result in death.

The final EIR/EIS should identify the potential impacts to nesting raptors associated with 24-hour construction schedules along riparian zones such as the Sacramento River, which contains a higher density of nesting raptors than elsewhere in the Natomas Basin. In its current form the DEIR/DEIS does not explore the potential impacts of nighttime construction activities on nesting raptors such as: high-intensity lighting, operation of heavy equipment or the presence of construction personnel at all hours of the night. Furthermore, construction at night poses additional complications for the effectiveness of biological monitors in ensuring that appropriate buffer zones are in place around active nests and that birds do not abandon their nest. The final EIR/EIS should include feasible mitigation measures that reduce these impacts to below a level of significance.

S5-7

Mitigation measure 4.9f states: "surveys for nesting birds shall be conducted before project activities are initiated during the nesting season (March 1-July 31)". The DFG recommends that nesting bird surveys be conducted until September 15<sup>th</sup>, in accord with current DFG survey protocols for nesting birds. Additionally, mitigation measure 4.9f states: "the biologist shall conduct preconstruction surveys to identify active nests

S5-8

within 0.25-mile of construction areas, in accordance with DFG guidelines". Current DFG guidelines require preconstruction surveys be conducted within 0.5-miles of construction areas, with a 0.25-mile construction buffer zone placed around any active nest that is identified.

S5-8  
Cont'd**Northern Harrier**

The Northern Harrier (*Circus cyaneus*) (NOHA) is listed in California as a Species of Special Concern, and is protected from take by Fish and Game section 3503.5. The DEIR/EIS does not provide a discussion of potential impacts to these ground nesting raptors associated with construction and borrow site activities and does not consider avoidance or mitigation measures to avoid "take" or lessen potential impacts to below a level that is significant. The DFG recommends that the DEIR/EIS provide a discussion of the project's potential to impact NOHA, and include measures to avoid take of these birds, and their nests and eggs.

S5-9

We appreciate your consideration of our comments. DFG personnel are available for consultation regarding biological resources and strategies to minimize impacts. If you have questions please contact Patrick Moeszinger, Environmental Scientist, at 916-358-2850 or Jeff Drongesen, Senior Environmental Scientist, at 916-358-2919.

Sincerely,

Kent Smith  
Habitat Conservation Program Manager

cc: Patrick Moeszinger  
Jeff Drongesen  
Kent Smith  
Department of Fish and Game  
North Central Region

USFWS  
2800 Cottage Way, W-2606  
Sacramento, CA 95825

- S5-1 Comment noted; DFG is providing comments as a trustee agency and responsible agency under CEQA.
- S5-2 **Table 3-2** includes permits and other resource agency coordination activities for current and future NLIP project construction phases.

| <b>Table 3-2<br/>NLIP Resource Agency Coordination</b> |  |                                    |
|--|--|------------------------------------|
| <b>Agency</b>  | <b>Regulatory Permit/Issue</b>                                 | <b>Status</b>                      |
| <b>Programmatic</b>                                    |  |                                    |
| USFWS/NMFS   | Programmatic Biological Opinion                                | Issued October 2008                |
| NMFS   | Concurrence of Determination of Not Likely to Adversely Affect | January 2009                       |
| DFG, RWQCB, USACE, and USFWS                           | Long Term Management Plan Approval                             | Under Review                       |
| <b>Phase 2 Project</b>                                 |  |                                    |
| USACE  | Section 408 Permission   | Issued January 2009                |
| USACE  | Section 404 Permit   | Issued January 2009                |
| RWQCB  | Section 401 Water Quality Certification                        | Issued January 2009                |
| DFG  | 2081 Incidental-Take Authorization                             | Expected April 2009                |
| DFG  | 1602 Streambed Alteration Agreement                            | Signed and issued January 2009     |
| USFWS/NMFS   | Biological Opinion   | Issued October 9, 2008             |
| Sacramento County                                      | SMARA Exemption  | February 2009                      |
| Sutter County  | SMARA Exemption  | February 2009                      |
| DFG, RWQCB, USACE, and USFWS                           | MMP  | Under review                       |
| SWRCB  | Section 402 NPDES Permit                                       | Notice of Intent filed March 2009  |
| <b>Phase 3 Project<sup>2</sup></b>                     |  |                                    |
| USACE  | Section 408 Permission   | Under review                       |
| USACE  | Section 404 Permit   | Under review                       |
| USACE  | Section 10 Permit  | Under review                       |
| RWQCB  | Section 401 Water Quality Certification                        | In preparation                     |
| DFG  | 2081 Incidental Take Authorization                             | In preparation                     |
| DFG  | 1602 Streambed Alteration Agreement                            | In preparation                     |
| USFWS/NMFS   | Biological Opinion   | Biological Assessment under review |

| <b>Table 3-2<br/>NLIP Resource Agency Coordination</b>  |   |                           |
|---|---|---------------------------|
| <b>Agency</b>   | <b>Regulatory Permit/Issue</b>          | <b>Status</b>             |
| Sacramento County   | SMARA Exemption                         | In preparation            |
| Sutter County   | SMARA Exemption                         | In preparation            |
| DFG, RWQCB, USACE,<br>and USFWS   | MMP                                     | In preparation            |
| SWRCB   | Section 402 NPDES Permit                | In preparation            |
| <b>Phase 4a Project</b>   |   |                           |
| USACE   | Section 408 Permission                  | Anticipated January 2010  |
| USACE   | Section 404 Permit                      | Anticipated January 2010  |
| USACE   | Section 10 Permit                       | Anticipated January 2010  |
| RWQCB   | Section 401 Water Quality Certification | Anticipated January 2010  |
| DFG   | 2081 Incidental Take Authorization      | Anticipated January 2010  |
| DFG   | 1602 Streambed Alteration Agreement     | Anticipated January 2010  |
| USFWS/NMFS  | Biological Opinion                      | Anticipated November 2009 |
| Sacramento County   | SMARA Exemptions or Permit              | In preparation            |
| DFG, RWQCB, USACE,<br>and USFWS   | MMP                                     | Anticipated January 2010  |
| SWRCB   | Section 402 NPDES Permit                | Anticipated January 2010  |
| <b>Phase 4b and 4c Projects – Anticipated 2010-2012</b>   |   |                           |
| Notes: USFWS = U.S. Fish and Wildlife Service; NMFS = National Marine Fisheries Service; DFG = California Department of Fish and Game; RWQCB = Regional Water Quality Control Board; USACE = U.S. Army Corps of Engineers; SMARA = Surface Mining and Reclamation Act; MMP = Mitigation and Monitoring Plan; SWRCB = State Water Resources Control Board; NPDES = National Pollutant Discharge Elimination System |   |                           |
| <sup>1</sup> Although Phase 1 Project permitting requirements were fulfilled, they are not included in this table because construction is complete.   |   |                           |
| <sup>2</sup> The Phase 3 Project permits have been separated into 3 subphases (a, b, and c); status listed in table refers to the Phase 3a permit.  |   |                           |
| Source: Data compiled by EDAW in 2009   |   |                           |

It is common to receive permits from these agencies, in their capacities as responsible agencies, after an FEIR is certified. The BOs and incidental take permit, which will contain specific conditions to protect species at a higher performance standard than exists under CEQA (“take” versus no substantial effect), specify that implementation is the responsibility of SAFCA, and establish measurable parameters (performance standards) and actions that SAFCA will be required to implement if the parameters are not met. USFWS, NMFS, and DFG permits include specific and stringent performance standards. These agency documents are not studies, but permits with legally binding and enforceable terms and conditions. If SAFCA does not receive permits from these agencies, SAFCA simply cannot implement the Proposed Action. Permit terms in USFWS, NMFS, and DFG permits are enforceable and must be complied with by SAFCA. The established mitigation in the Phase 3 DEIS/DEIR does not constitute impermissible “deferred mitigation” and meets CEQA requirements for effective and legally adequate mitigation. The following discussion provides additional supportive information.

Impacts to wildlife habitat from project construction would be compensated for through a Natomas Basinwide habitat creation, enhancement, and preservation component as part of the NLIP (See Section 2.3.3, “Habitat Conservation Components,” in the Phase 3 DEIS/DEIR). These components include creation and/or preservation of managed grasslands, aquatic habitat, uplands, woodlands, field crops, and rice that function as wildlife habitat. This conservation strategy is designed to offset impacts to habitat and to contribute towards long-term viability of the giant garter snake, valley elderberry longhorn beetle, Swainson’s hawk, and other nesting raptors and songbirds. Therefore, these conservation components are not “mitigation measures;” rather, they are part of the Proposed Action. Nevertheless, these aspects of the Phase 3 Project will still meet the same requirements of enforceability and approval by permitting agencies as they would if they were mitigation measures. The conservation strategy was designed to meet all the requirements of mitigation specified in the State CEQA Guidelines.

As stated in State CEQA Guidelines (Section 15126.4[a][1][B]), “formulation of mitigation measures should not be deferred until some future time. However, measures may specify performance standards which would mitigate the significant effect of the project and which may be accomplished in more than one specified way.” Hence, mitigation measures commonly are adopted in which the agency commits to achieving a performance standard and the mitigation measure lists options and alternatives for achieving the performance standard, some or all of which may be selected for implementation as part of a future, specific mitigation or management plan.

S5-3 Section 2.3.3, “Habitat Conservation Components,” in the Phase 3 DEIS/DEIR includes performance criteria for assessing the success of conservation components along with how and when assessment monitoring would be carried out for aquatic habitat, rice and field crops, managed grasslands, and woodlands.

Further description of these conservation components and how they are expected to function can be found in Sections 4.8, “Vegetation and Wildlife,” and 4.9, “Special-Status Terrestrial Species,” in the Phase 3 DEIS/DEIR under the Proposed Action. Construction details for the proposed GGS/Drainage Canal can be found in Appendix H of the Phase 3 DEIS/DEIR along with dates for completion.

See also Section 2.3.3.6, “Long-Term Management of Habitat Components,” in the Phase 3 DEIS/DEIR for a description of land protection and management mechanisms for long-term management of conservation components. Construction of conservation components and assessment monitoring will be carried out by SAFCA or its contractors.

The Draft NLIP Landside Improvements Project Programmatic Long-Term Management Plan (LTMP) and the NLIP Phase 3 Mitigation and Monitoring Plan (MMP) provide further details for ensuring that habitat improvement and compensation sites are managed, monitored, and maintained in perpetuity. The completion of these documents is expected by June 2009. Funding agreements for proposed parties responsible for management are detailed in the LTMP and MMP. Before project construction that could affect agency-regulated habitat can begin, permits must be issued by the applicable resource/regulatory agencies, and the LTMP and MMP documents are subject to their approval. Management responsibilities and protection obligations under these plans will be held by USFWS, DFG, SAFCA, TNBC, Sacramento County, Sacramento County Airport System (SCAS), the Natomas Central Mutual Water Company (NCMWC), and RD 1000.

S5-4 SAFCA acknowledges the Proposed Action could result in take of giant garter snake and Swainson’s hawk, and that a California Endangered Species Act (CESA) 2081 Permit is required for these species. SAFCA will fully comply with the CESA permitting process, including

necessary compensation/mitigation for impacts to state-listed species, funding for said compensation/mitigation, and the amount of time potentially required for issuing a permit.

S5-5 Mitigation Measure 4.9-a, “Conduct Focused Surveys for Special-Status Plants, Minimize Effects, and Develop Detailed Design of Created Habitat and Management Agreements to Ensure Compensation for Loss of Habitat, and Implement all Management Agreements,” in the Phase 3 DEIS/DEIR includes conducting plant surveys at the appropriate time of year to identify any special-status species in the area, ensures no net loss of special-status species if they are found, and includes consultation with appropriate regulatory agencies including DFG. These surveys are planned for the appropriate blooming season in June/July 2009, which is after the FEIR is completed. DFG will be notified of all results of the special-status plant surveys when the surveys are conducted.

Preconstruction surveys must take place immediately prior to construction activities. When preconstruction surveys are coupled with specific actions to be taken if the species are found, and there are specific performance standards established, then the mitigation is adequate under CEQA.

S5-6 SAFCA understands that transplanting herbaceous plants can be unsuccessful. If surveys indicate that special-status plants would be lost as a result of project implementation, Mitigation Measure 4.9-a, “Conduct Focused Surveys for Special-Status Plants, Minimize Effects, and Develop Detailed Design of Created Habitat and Management Agreements to Ensure Compensation for Loss of Habitat, and Implement all Management Agreements,” is revised to include the following: SAFCA commits to implement additional measures to increase the chance of success for establishment of special-status plant populations in created habitats, such as seed collection and propagation at a DFG-approved nursery to provide additional plantings and conducting transplantation during the dormant season, if feasible, to an approved site. SAFCA will develop a mitigation plan to be approved by DFG, and mitigation lands will be protected and managed in perpetuity, as recommended. See Chapter 4.0, “Revisions to the DEIS/DEIR,” of this FEIR for the text revision.

S5-7 Mitigation Measure 4.9-f, “Minimize Potential Impacts on Swainson’s Hawk and Other Special-Status Birds Foraging and Nesting Habitat, Monitor Active Nests during Construction, Develop and Implement a Management Plan in Consultation with DFG, Obtain Incidental Take Authorization, and Implement Mitigation Measure 4.8-a, [Minimize Effects on Woodland Habitat, Complete Detailed Design of Woodland Creation and Management Agreements to Ensure Compensation for Loss of Quantity and Quality of Habitat, Implement all Agreements, and Comply with the DFG Section 1602 Permit Process],” in the Phase 3 DEIS/DEIR is intended to (1) be encompassing enough to mitigate any and all construction activities, day or night, (2) provide for monitoring to identify any unanticipated nest disturbance, and (3) provide flexibility to determine an appropriate course of action in consultation with DFG if unanticipated effects occur. This measure addresses any impacts that may occur from 24/7 construction and haul trips.

S5-8 Mitigation Measure 4.9-f, “Minimize Potential Impacts on Swainson’s Hawk and Other Special-Status Birds Foraging and Nesting Habitat, Monitor Active Nests during Construction, Develop and Implement a Management Plan in Consultation with DFG, Obtain Incidental Take Authorization, and Implement Mitigation Measure 4.8-a, [Minimize Effects on Woodland Habitat, Complete Detailed Design of Woodland Creation and Management Agreements to Ensure Compensation for Loss of Quantity and Quality of Habitat, Implement all Agreements, and Comply with the DFG Section 1602 Permit Process],” in the Phase 3 DEIS/DEIR has been revised to reflect these updates to DFG protocol for nesting raptors. See Chapter 4.0, “Revisions to the DEIS/DEIR,” of this FEIR for the text revision.

The northern harrier is discussed as a special-status species in Section 3.3.9.2, “Special-Status Wildlife Species,” and in Table 3.9-2 in the Phase 3 DEIS/DEIR. Impacts 4.7-a, “Impacts on Jurisdictional Waters of the United States,” and 4.9-f, “Impacts on Swainson’s Hawk and Other Special-Status Birds,” in the Phase 3 DEIS/DEIR describe and evaluate the Phase 3 Project’s potential impacts to potential nesting habitat for Swainson’s hawk and other special-status birds, including grasslands, croplands, and marsh. To provide additional clarification, northern harrier will be specifically identified in Impact 4.9-f as a special-status bird. See Chapter 4.0, “Revisions to the DEIS/DEIR,” of this FEIR for the text revision.

Mitigation Measure 4.9-f, “Minimize Potential Impacts on Swainson’s Hawk and Other Special-Status Birds Foraging and Nesting Habitat, Monitor Active Nests during Construction, Develop and Implement a Management Plan in Consultation with DFG, Obtain Incidental Take Authorization, and Implement Mitigation Measure 4.8-a, [Minimize Effects on Woodland Habitat, Complete Detailed Design of Woodland Creation and Management Agreements to Ensure Compensation for Loss of Quantity and Quality of Habitat, Implement all Agreements, and Comply with the DFG Section 1602 Permit Process],” provides measures that cover surveys and avoidance for all nesting special-status birds, including the northern harrier. Focused transect surveys will be used to survey for northern harrier nests. If an occupied nest is found, this measure requires developing an appropriate buffer that minimizes potential disturbance of the nest to be determined by the biologist and in coordination with DFG.