

Mitigation Monitoring and Reporting Program for the
Natomas Levee Improvement Program
Landside Improvements Project



State Clearinghouse # 2007062016

Prepared for:



November 2007

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Natomas Levee Improvement Program
Landside Improvements Project



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Prepared for:

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

Contact:

John A. Bassett
Director of Engineering
Phone (916) 874-7606
Fax (916) 874-8289

Prepared by:

EDAW
2022 J Street
Sacramento, CA 95811

Contact:

Richard Hunn
FEIR Project Manager
Phone (916) 414-5800

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MITIGATION MONITORING AND REPORTING PROGRAM FOR THE NATOMAS LEVEE IMPROVEMENT PROGRAM LANDSIDE IMPROVEMENTS PROJECT

The Sacramento Area Flood Control Agency (SAFCA) prepared a Final Environmental Impact Report (Final EIR) to provide the public and responsible and trustee agencies with information about the potential environmental effects associated with the construction and operation of Natomas Levee Improvement Program (NLIP) Landside Improvements Project.

The Final EIR concludes that implementation of the project would generate significant adverse environmental impacts. For most potential impacts, the Final EIR prescribes mitigation capable of reducing these impacts to less-than-significant levels.

Section 21081.6 of the California Public Resources Code requires a public agency to adopt a reporting or monitoring program for changes to the project that it has adopted and incorporated into the project, at the time of approval, in order to mitigate or avoid significant effects on the environment. These conditions are also referred to as mitigation measures.

This Mitigation Monitoring and Reporting Program is to be used by SAFCA to ensure that adopted mitigation measures identified in the EIR are implemented and that implementation is documented. The Mitigation Monitoring and Reporting Program is presented in tabular format.

The table columns contain the following information:

Mitigation Number: Lists the mitigation measures by number, as designated in the EIR.

Mitigation Measure: Provides the text of the mitigation measures, each of which has been adopted and incorporated into the project.

Timing/Schedule: Lists the time frame in which the mitigation is expected to take place.

Implementation Responsibility: Identifies the entity responsible for complying with the requirements of the mitigation measure.

Completion of Implementation: SAFCA is responsible for reporting on implementation of the mitigation measures. The “Action” column is to be used by SAFCA to describe the action(s) taken to complete implementation. The “Date Completed” column is to be used by SAFCA to indicate when implementation of the mitigation measure has been completed. SAFCA, at its discretion, may delegate implementation responsibility or portions thereof to qualified consultants or contractors.

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
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Agriculture and Land Use					
3.2-b	<p>Minimize Important Farmland Conversion to the Extent Practicable and Feasible</p> <p>(a) Borrow sites shall be configured to minimize the fragmentation of lands that are to remain in agricultural use. Contiguous parcels of agricultural land of sufficient size to support their efficient use for continued agricultural production shall be retained to the extent practicable and feasible.</p>	During project design and prior to construction	SAFCA and its primary contractors for engineering design and construction		
	<p>(b) To the extent practicable and feasible, when expanding the footprint of a flood control facility (e.g., levee or berm) onto agricultural land, the most productive topsoil from the construction footprint shall be salvaged and redistributed to less-productive agricultural lands in the vicinity of the construction area that could benefit from the introduction of good-quality soil. By agreement between the implementing agencies or landowners of affected properties and the recipient(s) of the topsoil, the recipient(s) would be required to use the topsoil for agricultural purposes.</p>	Prior to and during construction	SAFCA and its primary construction contractor		
	<p>(c) During project construction, use of utilities that are needed for agricultural purposes (including wells, pipelines, and power lines) and of agricultural drainage systems shall be minimized so that agricultural uses are not disrupted.</p>	During Construction	SAFCA and its primary construction contractor		
	<p>(d) Disturbance of agricultural land and agricultural operations during construction shall be minimized by locating construction staging areas on sites that are fallow, that are already developed or disturbed, or that are to be discontinued for use as agricultural land, and by using existing roads to access construction areas to the extent possible.</p>	During construction	SAFCA and its primary construction contractor		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
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	(e) To the extent feasible, lands acquired for flood control purposes shall also be used as mitigation land for NBHCP programs so that agricultural land conversion is minimized.	During project design and prior to construction	SAFCA		
	(f) Agricultural conservation easements shall be acquired at a 1:1 ratio (i.e., 1 acre on which easements are acquired to 1 acre of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance removed from agricultural use), and the lands on which the easements are acquired shall be maintained in agricultural use.	During project design and prior to construction	SAFCA		
Geology and Soils and Water Quality					
3.3-a and 3.5-a	<p>Implement Standard Best Management Practices (BMPs), Prepare and Implement a Stormwater Pollution Prevention Plan (SWPPP), and Comply with National Pollutant Discharge Elimination System (NPDES) Permit Conditions</p> <p>SAFCA shall file a notice of intent (NOI) to discharge stormwater with the Central Valley RWQCB. Final design and construction plans shall require the implementation of standard erosion, siltation, and good housekeeping BMPs. SAFCA's construction contractor shall be required to prepare a SWPPP and comply with the conditions of the NPDES general stormwater permit for construction activity. The SWPPP, for work conducted under NPDES authorization, shall describe the construction activities to be conducted, BMPs that will be implemented to prevent discharges of contaminated stormwater into waterways, and inspection and monitoring activities that shall be conducted.</p> <p>BMPs shall include all of the following:</p> <ul style="list-style-type: none"> ▶ pollution prevention measures (erosion and sediment control measures and measures to control nonstormwater discharges and hazardous spills), 	<p>Prepare NOI and SWPPP before the start of project construction</p> <p>Implement SWPPP and BMPs throughout construction</p> <p>Monitor effectiveness of measures throughout and at completion of construction</p>	SAFCA and its primary contractors for engineering design and construction		

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	<ul style="list-style-type: none"> ▶ demonstration of compliance with all applicable Central Valley RWQCB standards and other applicable water quality standards, ▶ demonstration of compliance with regional and local standards for erosion and sediment control, ▶ identification of responsible parties, ▶ detailed construction timelines, and ▶ a BMP monitoring and maintenance schedule. <p>BMPs shall be applied to meet the “maximum extent practicable” and “best conventional technology/best available technology” requirements and to address compliance with water quality standards. A monitoring program shall be implemented during and after construction to ensure that the project is in compliance with all applicable standards and that the BMPs are effective.</p>				
Hydrology and Hydraulics					
3.4-b	<p>Coordinate with Landowners and Drainage Infrastructure Operators, Prepare Drainage Studies as Needed, and Remediate Impacts through Project Design</p> <p>During project design, project engineers shall coordinate with owners and operators of local drainage systems and landowners served by the systems to evaluate preproject and postproject drainage needs, and design features to remediate any substantial project-related drainage disruption or alteration in runoff that would increase the potential for local flooding. If substantial alteration of runoff patterns or disruption of a local drainage system could result from a project feature, a drainage study shall be prepared as part of project design.</p>	<p>Coordinate with owners and operators of local drainage systems and landowners served by the systems during project design</p> <p>Prepare drainage study during</p>	SAFCA and its primary contractors for engineering design and construction		

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	The study shall consider the design flows of any existing facilities that would be crossed by project features and shall develop appropriate plans for relocation or other modification of these facilities and construction of new facilities, as needed, to ensure equivalent functioning of the system during and after construction. If no drainage facilities (e.g., ditches, canals) would be affected, but project features would have a substantial adverse impact on runoff amounts and/or patterns, then new drainage systems shall be included in the design of project improvements to ensure that the project would not result in new or increased local flooding. Any necessary features to remediate project-induced drainage problems shall be constructed before the project is completed or as part of the project, depending upon site-specific conditions.	project design Construct any necessary features to remediate project-induced drainage issues as part of the project development, depending upon site-specific conditions			
Water Quality					
3.5-b	Conduct Groundwater Quality Tests, Notify the Central Valley RWQCB, and Comply with the RWQCB's Waste Discharge Authorization and NPDES Permit SAFCA and RD 1000 shall ensure that groundwater in the vicinity of potential relief well locations is tested during project design, to ensure that MCLs specified in Title 22 are not exceeded. SAFCA shall notify the Central Valley RWQCB, providing it with the results of these water quality tests and a conceptual plan for how the relief wells will be used, and shall comply with any WDR and NPDES permit issued by the RWQCB.	During project design	SAFCA and RD 1000		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
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Fisheries and Aquatic Resources					
3.6-a	Implement Standard BMPs, Prepare and Implement a SWPPP, and Comply with NPDES Permit Conditions Implement Mitigation Measure 3.5-a.	[See Mitigation Measure 3.5-a, above]	[See Mitigation Measure 3.5-a, above]		
3.6-b	Restore, Replace, or Rehabilitate Loss of Degraded SRA Habitat Function and Comply with Section 1602 Permit Conditions. SAFCA or its representative shall consult with DFG regarding potential disturbance to fish habitat, including SRA, and shall obtain a streambed alteration agreement, pursuant to Section 1602 of the California Fish and Game Code, for construction work associated with levee improvements made on the water side of a levee, if needed. SAFCA shall comply with all permit conditions of the streambed alteration agreement to protect fish habitat or to restore, replace, or rehabilitate any habitat on a no-net-loss basis (see Mitigation Measure 3.7-a).	Consult with DFG and comply with Section 1602, as needed, before the beginning of any waterside ground disturbance	SAFCA		
Terrestrial Biological Resources					
3.7-a	Minimize Effects on Sensitive Habitats, Develop a Habitat Management Plan to Ensure Compensation for Unavoidable Adverse Effects, and Comply with Section 404, Section 401, and Section 1602 Permit Processes Areas of sensitive habitat shall be identified and the primary engineering and construction contractors shall ensure, through coordination with a qualified biologist retained by SAFCA, that staging areas and access routes are designed to minimize disturbance of canals and ditches, seasonal wetlands, and woodland patches. Trees within the Sacramento County portion of the project area that qualify	Prior to and throughout construction	SAFCA and its primary contractors for engineering design and construction		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
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	as Native Oaks or Heritage Trees under Sacramento County's tree preservation ordinance shall be identified. All sensitive habitats and protected trees that are located adjacent to construction areas, but can be avoided, shall be protected by temporary fencing during construction.				
	SAFCA shall develop and implement a habitat management plan to address establishment and management of aquatic (i.e., GGS/Drainage Canal and marsh/seasonal wetland habitat) and woodland habitats that are created as part of the proposed project in order to ensure that the performance standard of no net loss of sensitive habitat is met. The plan shall, at a minimum, establish specific requirements for habitat creation (e.g., acreage of specific habitats to be created and number and species of trees to be planted), success criteria for habitat creation (e.g., tree survival requirements), specify remedial measures to be undertaken if success criteria are not met (e.g., supplementary plantings and additional monitoring), and describe short- and long-term maintenance and management of the features. Long-term protection of the created features, and funding for their management, shall be provided through appropriate mechanisms to be determined by SAFCA, in consultation with the regulatory agencies and other entities cooperating in implementation of the proposed project. The management plan for the habitat creation components of the proposed project shall be reviewed and approved by the appropriate resource agencies before project implementation.	Develop habitat management plan and submit it to the appropriate resources agencies for their review and approval before the beginning of construction Implement habitat management plan as specified	SAFCA SAFCA and its primary construction contractor		
	Applicable permits, including a Section 404 permit from the USACE, Section 401 certification from the Central Valley RWQCB, and a Section 1602 streambed alteration agreement from DFG, shall be obtained before any impact on the relevant resources occurs. All measures adopted through these permitting processes shall be implemented.	Consult with the appropriate resource agencies and obtain permits before the beginning of	SAFCA		

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		<p>construction</p> <p>Implement permit requirements throughout construction and project operation</p>	<p>SAFCA and its primary construction contractor</p>		
3.7-b	<p>Conduct Focused Surveys for Special-Status Plants, Minimize Effects, Transplant Unavoidable Individual Plants, and Develop Management Plan for Transplanted Populations</p> <p>Before any ground-disturbing project activities begin, a qualified biologist retained by SAFCA shall conduct surveys for special-status plants in appropriate habitat within the project footprint, in accordance with USFWS and/or DFG guidelines and at the appropriate time of year when the target species would be clearly identifiable. If no special-status plants are found during focused surveys, no further action shall be required.</p>	<p>Conduct surveys before any ground-disturbing project activities begin</p>	<p>SAFCA</p>		
	<p>If special-status plants are found, areas of occupied habitat shall be identified and the primary engineering and construction contractors shall ensure, through coordination with the biologist, that staging areas and access routes are designed to minimize disturbance of these areas. All occupied habitat that is located adjacent to construction areas, but can be avoided, shall be protected by temporary fencing during construction.</p>	<p>Establish protective measures during project design and prior to any project construction-related ground disturbance</p>	<p>SAFCA and its primary contractors for engineering design and construction</p>		
	<p>If special-status plants are present in areas that cannot be avoided, plants that would be affected shall be transplanted to the GGS/Drainage Canal, if feasible. If this is infeasible (i.e., because the created habitat is not suitable at the time transplantation is required), an alternative transplantation</p>	<p>Transplant affected plants prior to any project construction-</p>	<p>SAFCA</p>		

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	location (e.g., TNBC preserves), approved by USFWS and DFG, shall be utilized. A plan to address management of the transplanted populations and their habitat shall be developed. The management plan shall be approved by USFWS and DFG and shall, at a minimum, establish specific success criteria (e.g., no net loss of occupied special-status plant habitat), specify remedial measures to be undertaken if success criteria are not met (e.g., enhancement of habitat quality and additional monitoring), and describe short- and long-term maintenance of the transplantation site. Long-term protection of the special-status plants, and funding for management of their habitat, shall be provided through appropriate mechanisms to be determined by SAFCA, in consultation with the regulatory agencies and other entities cooperating in implementation of the proposed project.	related ground disturbance Develop management plan and submit it to the USFWS and DFG for their review and approval before the beginning of construction Implement management plan as specified	SAFCA SAFCA and its primary construction contractor		
3.7-c	Minimize Effects on Valley Elderberry Longhorn Beetle, Conduct Focused Surveys, Develop a Management Plan to Ensure Adequate Compensation for Unavoidable Adverse Effects, and Obtain Incidental Take Authorization The primary engineering and construction contractors shall ensure, through coordination with a qualified biologist retained by SAFCA, that staging areas and access routes are designed to minimize disturbance of areas that support elderberry shrubs. All elderberry shrubs that are located adjacent to construction areas, but can be avoided, shall be protected by temporary fencing during construction.	Establish protective measures during project design and prior to any project construction-related ground disturbance	SAFCA and its primary contractors for engineering design and construction		
	Before the initiation of any ground-disturbing activities, the biologist shall conduct surveys for elderberry shrubs within 100 feet of the impact area, in accordance with USFWS	Conduct surveys before any ground-disturbing	SAFCA		

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	guidelines. All elderberry shrubs with potential to be affected by project activities shall be mapped, the number of stems greater than 1 inch in diameter on each shrub that requires removal shall be counted, and these stems shall be searched for beetle exit holes. Shrubs that are removed shall be transplanted to the woodland creation areas, if feasible. If none of the areas of suitable habitat to be created as part of the proposed project would be available before the impact would occur, alternative transplantation locations (e.g., other SAFCA mitigation areas or TNBC preserves) shall be identified.	project activities begin Transplant affected shrubs prior to any project construction-related ground disturbance			
	SAFCA shall develop and implement a plan to address establishment and management of the elderberry shrubs and associated species plantings to compensate for unavoidable effects on elderberry shrubs. The plan shall, at a minimum, describe requirements for transplantation of shrubs that require removal; specify the number of replacement elderberry shrubs and associated native plants to be established and associated success criteria; specify remedial measures to be undertaken if mitigation success criteria are not met; and describe short- and long-term maintenance and management. The number of replacement plantings shall be determined based on USFWS guidelines, which require replacement ratios ranging from 1:1 to 8:1 for lost stems at least 1 inch in diameter, depending on the size of the affected stems and presence or absence of beetle exit holes. Associated native species shall be planted at ratios ranging from 1:1 to 2:1 for each elderberry planting. Long-term protection of the planting area for elderberry and associated species, and funding for its management, shall be provided through appropriate mechanisms to be determined by SAFCA, USFWS, and other entities cooperating in implementation of the proposed project.	Develop management plan before the beginning of construction Implement management plan as specified	SAFCA SAFCA and its primary construction contractor		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
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	The management plan shall be reviewed and approved by USFWS before removal of any elderberry shrubs. Authorization for take of valley elderberry longhorn beetle under ESA shall be obtained if it is determined, in consultation with USFWS, that shrub removal is likely to result in such take. All measures subsequently developed through informal consultation with USFWS shall be implemented, as well as any additional measures adopted through a formal permitting process, if applicable.	Submit management plan for USFWS review and approval before removal of any shrubs Implement conservation measures as specified.	SAFCA		
3.7-d	<p>Minimize the Potential for Direct Loss of Giant Garter Snake Individuals, Develop a Management Plan in Consultation with USFWS and DFG, and Obtain Incidental Take Authorization.</p> <p>The primary engineering and construction contractors shall ensure, through coordination with a qualified biologist retained by SAFCA, that staging areas and access routes are designed to minimize disturbance of giant garter snake habitat. All aquatic and adjacent upland habitat that is located adjacent to construction areas, but can be avoided, shall be protected by temporary fencing during construction.</p>	Establish protective measures during project design and prior to any project construction-related ground disturbance	SAFCA and its primary contractor for engineering design and construction		
	Additional measures consistent with the goals and objectives of the NBHCP shall be implemented to minimize the potential for direct injury or mortality of individual giant garter snakes during project construction. Such measures shall be finalized in consultation with DFG and USFWS, and are likely to include conducting worker awareness training, timing initial ground disturbance to correspond	Implement measures prior to and throughout construction	SAFCA		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
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	with the snake's active season (as feasible in combination with minimizing disturbance of nesting Swainson's hawks), dewatering aquatic habitat before fill, conducting preconstruction surveys, and conducting biological monitoring during construction.				
	<p>SAFCA shall develop and implement a plan to address management of aquatic (i.e., GGS/Drainage Canal and marsh/seasonal wetland habitat) and adjacent upland habitats that are created and rice fields that are preserved as part of the project in order to ensure that the performance standard of no net loss in function and value of giant garter snake habitat is met. The management plan shall, at a minimum, establish specific success criteria for habitat creation, specify remedial measures to be undertaken if success criteria are not met (e.g., adaptive management, physical adjustments to created habitat, additional monitoring), and describe short- and long-term maintenance and management of the features. Long-term protection of the created features and funding for their management shall be provided through appropriate mechanisms to be determined by SAFCA, the regulatory agencies, and other entities cooperating in implementation of the proposed project.</p> <p>The management plan for the giant garter snake habitat creation and preservation components of the project shall be reviewed and approved by USFWS and DFG before project implementation. Authorization for take of giant garter snake under ESA and CESA shall be obtained. All measures subsequently adopted through the permitting process shall be implemented.</p>	<p>Develop management plan and submit it to the USFWS and DFG for review and approval before the beginning of construction</p> <p>Implement management plan as specified</p> <p>Obtain authorization for take of giant garter snake under ESA and CESA, if required, before the beginning of construction</p>	<p>SAFCA</p> <p>SAFCA and its primary construction contractor</p> <p>SAFCA</p>		

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3.7-e	<p>Conduct Focused Surveys for Northwestern Pond Turtle and Relocate Turtles</p> <p>A qualified biologist retained by SAFCA shall conduct surveys in aquatic habitats to be dewatered and/or filled during project construction. Surveys shall be conducted immediately after any dewatering and before any fill of aquatic habitat. If pond turtles are found, the biologist shall capture them and move them to nearby areas of suitable habitat that would not be disturbed by project construction.</p>	<p>Conduct focused surveys immediately after any dewatering and before any fill of aquatic habitat</p> <p>If pond turtles are found, implement capture and relocation plan</p>	SAFCA		
3.7-f	<p>Minimize Potential Impacts on Swainson’s Hawk, Monitor Active Nests during Construction, Develop a Management Plan in Consultation with DFG, and Obtain Incidental Take Authorization</p> <p>The primary engineering and construction contractors shall ensure, through coordination with a qualified biologist retained by SAFCA, that staging areas and access routes are designed to minimize disturbance of known Swainson’s hawk nesting territories. The biologist shall conduct preconstruction surveys to identify active nests within 0.25 mile of construction areas, in accordance with DFG guidelines. Surveys shall be conducted in accordance with NBHCP requirements and <i>Recommended Timing and Methodology for Swainson’s Hawk Nesting Surveys in California’s Central Valley</i> (Swainson’s Hawk Technical Advisory Committee 2000). If an active nest is found, an appropriate buffer that minimizes the potential for disturbance of the nest shall be determined by the biologist, in coordination with DFG. No project activities shall</p>	<p>During project design</p> <p>Conduct preconstruction surveys no less than 14 days and no more than 30 days before the beginning of construction</p>	<p>SAFCA and its primary contractors for engineering design and construction</p> <p>SAFCA</p>		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
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	commence within the buffer area until a qualified biologist confirms that the nest is no longer active or the birds are not dependent on it. Monitoring shall be conducted by a qualified biologist to determine whether project activity results in detectable adverse effects on the nesting pair or their young. The size of the buffer may vary, depending on the nest location, nest stage, construction activity, and monitoring results. If implementation of the buffer becomes infeasible or construction activities result in an unanticipated nest disturbance, DFG shall be consulted to determine the appropriate course of action.	<p>activities that could disturb a nest site</p> <p>If an active nest is found, establish buffer that minimizes the potential for disturbance of the nest prior to construction</p>			
	<p>SAFCA shall develop and implement a plan to address management of grassland habitats that are created as part of the proposed project in order to ensure that the performance standard of no net loss of sensitive habitat is met. The management plan shall, at a minimum, establish specific success criteria for habitat creation, specify remedial measures to be undertaken if success criteria are not met (e.g., supplementary plantings and additional monitoring), and describe short- and long-term maintenance and management of the features. Long-term protection of the created features and funding for their management shall be provided through appropriate mechanisms to be determined by SAFCA, DFG, and other entities cooperating in implementation of the proposed project.</p> <p>The management plan for the grassland habitat creation components of the project shall be reviewed and approved by USFWS and DFG before project implementation. Authorization for take of Swainson's hawk under CESA shall be obtained. All measures subsequently adopted through the permitting process shall be implemented.</p>	<p>Develop management plan and submit it to the USFWS and DFG for review and approval before the beginning of construction</p> <p>Implement management plan as specified</p> <p>Obtain authorization for take of Swainson's hawk under CESA, if required, before the beginning of construction</p>	<p>SAFCA</p> <p>SAFCA and its primary construction contractor</p> <p>SAFCA</p>		

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3.7-g	<p>Minimize Potential Impacts on Burrowing Owls and Other Special-Status Bird Species, Monitor Active Nests during Construction, and Relocate Owls as Needed</p> <p>The primary engineering and construction contractors shall ensure, through coordination with a qualified biologist retained by SAFCA, that staging areas and access routes are designed to minimize disturbance of potential nesting habitat for special-status birds. Removal of potential nesting habitat shall be conducted during the nonnesting season, to the extent feasible and practicable, to minimize the potential for loss of active nests.</p> <p>The biologist shall conduct preconstruction surveys to identify active special-status bird nests and occupied burrowing owl burrows within 500 feet of construction areas. Surveys for nesting birds shall be conducted before project activities are initiated during the nesting season (March 1–July 31), and surveys for burrowing owl shall be conducted before project activities are initiated at any time of year. Surveys shall be conducted in accordance with NBHCP requirements. If an active nest or occupied nest burrow is found, an appropriate buffer that minimizes potential for disturbance of the nest shall be determined by the biologist, in coordination with DFG. No project activities shall commence within the buffer area until a qualified biologist confirms that the nest is no longer active or the birds are not dependent on it. Monitoring shall be conducted by a qualified biologist to ensure that project activity does not result in detectable adverse effects on the nesting pair or their young. The size of the buffer may vary, depending on the nest location, nest stage, construction activity, and monitoring results.</p>	During project design; prior to and during construction	SAFCA and its primary contractors for engineering design and construction		

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	If an occupied burrowing owl burrow that does not support an active nest is found, SAFCA shall develop and implement a relocation plan, in coordination with and subject to approval of DFG and USFWS and consistent with requirements of the NBHCP. Because the project would generally result in temporary disturbance of burrowing owl habitat or conversion from one suitable habitat type to another, relocation is likely to include passive exclusion (via one-way doors at the burrow entrances) of owls from the project site. The owls would then be able to reoccupy the area after construction is complete.				
3.7-h	Implement Mitigation Measure 3.7-d	[See Mitigation Measure 3.7-g, above]	[See Mitigation Measure 3.7-g, above]		
3.7-i	<p>Ensure that Compliance with Mitigation Requirements of Established NBHCP Reserves is Not Adversely Affected and Implement Mitigation Measures 3.7-a through 3.7-g</p> <p>SAFCA shall coordinate with TNBC to determine the most effective means of ensuring that the small encroachment onto reserves that would result from project implementation does not adversely affect the ability to meet the minimum-size and mitigation-ratio requirements of the NBHCP, require revision of existing management plans, and/or affect revenue-generation requirements. SAFCA shall, in coordination with TNBC, identify and implement necessary actions to ensure that encroachment does not jeopardize successful implementation of the NBHCP. Such actions may include direct supplementation of TNBC funding to offset losses in revenue generation, management of portions of the reserve that are encroached upon by project facilities in a manner that is consistent with current habitat requirements, and/or acquisition of additional land to replace portions of reserves that are encroached upon.</p>	During project design and prior to construction	SAFCA		

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	Actions shall be approved by TNBC, USFWS, and DFG and shall be implemented by SAFCA before encroachment occurs.				
Cultural Resources					
3.8-a	<p>Document Alterations Made to Any RD 1000 Contributing Resources and Distribute the Information to the Appropriate Repositories</p> <p>Before performing any work that would alter contributing elements of RD 1000, SAFCA shall retain a qualified architectural historian to assess the impact of the work on the district. Because many of the planned improvements are consistent with the operation and long-term maintenance of a levee system, they may be consistent with the character-defining elements of the district. Such impacts would not require further mitigation.</p> <p>If planned improvements would alter or diminish the integrity of contributing elements of the district, the architectural historian shall examine and review existing documentation regarding the existing structures and elements (photographs, maps, drawings, and other methods specified in the Historic American Engineering Record standards) and determine whether any augmentation of this documentation is needed. Any additional documentation that is needed shall be distributed to appropriate public repositories.</p>	Before and after construction	SAFCA		

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3.8-c(1)	<p>Avoid Ground Disturbance Near Known Prehistoric Archaeological Sites CA-Sac-485/H and the Barney Mound to the Extent Feasible, and Conduct Resource Documentation and Data Recovery at CA-Sac-485/H as Needed</p> <p>For CA-Sac-485/H:</p> <ul style="list-style-type: none"> ▶ SAFCA and its engineers for canal design and construction shall consult with a qualified professional archaeologist during project design to delineate the extent of potentially significant deposits east of the mapped location of CA-Sac-485/H and shall design ground-disturbing work to avoid the deposits as feasible and practicable. ▶ The archaeologist shall determine an appropriate radius around the site for monitoring adjacent construction work, and SAFCA shall retain an archaeological monitor and Native American monitor to be present during this work. ▶ If prehistoric resources are discovered, a professional archaeologist shall assess the significance of the find and recommend additional work such as data recovery to retrieve the materials that convey the significance of the resource. <p>For the Barney Mound:</p> <ul style="list-style-type: none"> ▶ SAFCA and its engineers for borrow excavation shall consult with a qualified professional archaeologist during project design to delineate the extent of potentially significant deposits in the vicinity of the Barney Mound. SAFCA shall restrict all ground disturbance for borrow removal to areas beyond the significant deposits as feasible and practicable. 	During project design	SAFCA and its primary contractors for engineering design and construction		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	<ul style="list-style-type: none"> ▶ SAFCA shall retain an archaeological monitor and Native American monitor to be present during adjacent construction work. ▶ If prehistoric resources are discovered, a professional archaeologist shall assess the significance of the find and recommend additional work such as data recovery to retrieve the materials that convey the significance of the resource. 				
3.8-c(2)	<p>Avoid Ground Disturbance near Known Prehistoric Archaeological Sites CA-Sac-15/H , CA-Sac-16/H, CA-Sac-160/H, CA-Sac-164, and CA-Sac-485/H to the Extent Feasible, and Conduct Resource Documentation and Data Recovery as Needed</p> <ul style="list-style-type: none"> ▶ If ground disturbance may be conducted within 500 feet of known prehistoric resources CA-Sac-15/H, CA-Sac-16/H, CA-Sac-160, CA-Sac-164, or CA-Sac-485/H, SAFCA and its engineers for levee design and construction shall consult with a qualified professional archaeologist during project design to delineate the extent of potentially significant deposits around the recorded locations. If feasible and practicable, the project activities shall be designed to avoid disturbance of the resource. The archaeologist shall determine an appropriate radius around the site for monitoring adjacent construction work, and SAFCA shall retain an archaeological monitor and Native American monitor to be present during this work. 	During project design	SAFCA and its primary contractors for engineering design and construction		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	<p>► If, in the judgment of the archaeologist, project activities would disturb the resource and these impacts cannot be avoided, the archaeologist shall prepare and implement a research design and treatment plan. Before any construction-related ground disturbance begins in the vicinity of the resource, a professional archaeologist shall carry out a testing program based on the plan to determine whether the resource meets the definition of a unique archaeological resource or a historical resource as defined by CEQA. If the construction activity is part of a federal undertaking, all actions shall be conducted in compliance with Section 106 of the NHPA.</p> <p>If the resource is determined to be ineligible for listing on the CRHR or the NRHP, no further mitigation is required. If the resource appears to meet the definition of a unique archaeological resource or a historical resource or property (under NHPA), the archaeologist shall perform a program of data recovery in coordination with a Native American monitor to retrieve the materials that convey the significance of the resource.</p>	If required, prepare and implement a research design and treatment plan before construction-related ground disturbance begins	SAFCA		
3.8-d	<p>Perform Research and/or Surveys, Brief Workers Before Construction, Monitor Construction, Halt Potentially Damaging Activities, Investigate and Avoid Resources to the Extent Feasible, and Conduct Resource Documentation and Data Recovery as Needed</p> <p>► A qualified archaeologist shall survey all accessible portions of the proposed areas of project disturbance if they have not been surveyed within the previous 5 years, and shall document and evaluate the significance of any resources that are found during the surveys. If any resources are found during the surveys that may be considered historical or unique resources under CEQA,</p>	Before the start of ground-disturbing construction activities	SAFCA		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	the steps described in Mitigation measure 3.8-c for known resources shall be followed.				
	<ul style="list-style-type: none"> Before construction begins, a qualified professional archaeologist shall give a presentation and training session to all construction personnel so that they can assist with identification of undiscovered cultural materials and avoid them where possible. 	Before the start of ground-disturbing construction activities	SAFCA		
	<ul style="list-style-type: none"> A qualified archaeologist shall monitor all ground-disturbing construction activities along the Sacramento River east levee and at other locations determined by the archaeologist to be sensitive for subsurface cultural resource deposits. If a previously unidentified archaeological resource is uncovered during construction, construction activities shall be halted within 50 feet of the find and the construction contractor, SAFCA, and other appropriate parties shall be notified regarding the discovery. The archaeologist shall determine whether the resource is significant under CEQA or the NHPA and shall develop appropriate mitigation. If the resource is found to be a unique archaeological resource or a historical resource, the archaeologist shall recommend additional actions deemed necessary for the preservation or documentation of the resource. Such actions may include (but shall not be limited to) measures such as testing for subsurface features, additional background research, additional resource documentation, avoidance of the resource, or additional monitoring of construction activity to minimize any effects. SAFCA shall ensure that necessary protection actions are implemented before construction resumes within 50 feet of the site. The preferred mitigation is preservation in place of as much of the resource as possible through project 	Throughout ground-disturbing construction activities	SAFCA		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	modification or protective measures. In many cases, archaeological data recovery can mitigate impacts to a less-than-significant level. However, construction activities may encounter unique or historical archaeological resources that cannot be protected or recovered and for which adequate data recovery may not be feasible.				
3.8-e	<p>Halt Work Within 50 Feet of the Find, Notify the County Coroner and Most Likely Descendant, and Implement Appropriate Treatment of Remains</p> <ul style="list-style-type: none"> ▶ If human remains are uncovered during ground-disturbing activities, all ground-disturbing activities shall cease within a 50-foot radius of the find, and SAFCA or its designated representative shall be notified. In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, SAFCA and/or the contractor shall notify the county coroner of the county in which the remains are uncovered (Sutter or Sacramento) and a professional archaeologist to determine the nature of the remains. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the NAHC by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). The NAHC will designate a Most Likely Descendant (MLD) to dispose of the remains with appropriate dignity. 	Throughout ground-disturbing construction activities	SAFCA and its primary construction contractor		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	<ul style="list-style-type: none"> ▶ After a determination that the remains are of prehistoric Native American origin, SAFCA shall coordinate with the MLD for reburial of the remains and associated grave goods in an appropriate location. If the MLD fails to make a recommendation or re-inter the remains, further treatment will conform to PRC Section 5097 et seq. and other appropriate authorities. ▶ The discovery of prehistoric burials often reveals locations sensitive for the occurrence of additional archaeological material. After the initial discovery and management of human remains, a professional archaeologist working on behalf of SAFCA shall record the site with the NAHC and the appropriate Information Center and, if possible, use project features to protect the site from future disturbance. 				
Paleontological Resources					
3.9-a	<p>Conduct Construction Personnel Training and, If Paleontological Resources Are Found, Cease Work in the Vicinity of the Find and Implement Mitigation in Coordination with a Professional Paleontologist</p> <p>Before the start of construction activities in the Riverbank Formation or the Modesto Formation, construction personnel involved with earthmoving activities shall be informed of the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction activities, and proper notification procedures should fossils be encountered. This worker training may be either (1) prepared and presented by an experienced field archaeologist at the same time as construction worker education on cultural resources or (2) prepared and presented separately by a qualified paleontologist.</p>	Prior to construction activities in the Riverbank or Modesto Formations	SAFCA and its primary construction contractor		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work in the vicinity of the find. SAFCA shall retain a qualified paleontologist to evaluate the resource and prepare a proposed mitigation plan in accordance with SVP guidelines (1995). The proposed mitigation plan may include a field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations determined by SAFCA to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered.	During earthmoving construction activities	SAFCA and its primary construction contractor		
Transportation and Circulation					
3.10-a	<p>Prepare and Implement a Traffic Routing Plan for Both Crew Commute Trips to the Work Sites and Construction-Related Truck Trips</p> <p>Before the start of construction in each construction season, SAFCA and its primary contractors for engineering and construction shall develop a coordinated construction traffic control plan to minimize the simultaneous use of roadways by different construction contractors for worker commute trips, material hauling, and equipment delivery to the extent feasible. The plan will outline phasing of activities and the use of multiple routes to and from off-site locations to minimize the daily amount of traffic on individual roadways. SAFCA shall ensure that the construction contractors enforce the plans throughout the construction periods.</p>	<p>Prepare a coordinated construction traffic control plan before the start of construction in each construction season</p> <p>Enforce the plans throughout the construction periods</p>	<p>SAFCA and its primary contractors for engineering and construction</p> <p>SAFCA and its primary construction contractor</p>		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
3.10-b	<p>Prepare and Implement a Traffic Safety and Control Plan and Implement Measures to Avoid and Minimize Traffic Hazards on Local Roadways during Construction</p> <p>(a) The construction contractors shall develop traffic safety and control plans for the local roadways that would be affected by construction traffic. Before the initiation of construction-related activity involving high volumes of traffic, the plan shall be submitted for review by Caltrans and the agencies of the local jurisdictions (Sutter County, Sacramento County, and/or City of Sacramento) having responsibility for roadway safety at and between project sites. The plan shall call for the following elements:</p> <ul style="list-style-type: none"> posting warnings about the potential presence of slow-moving vehicles, using traffic control personnel when appropriate, and placing and maintaining barriers and installing traffic control devices necessary for safety, as specified in Caltrans's <i>Manual of Traffic Controls for Construction and Maintenance Works Zones</i> and in accordance with county requirements. <p>The contractor shall train construction personnel in appropriate safety measures as described in the plan, and shall implement the plan. The plan shall include the prescribed locations for staging equipment and parking trucks and vehicles. Provisions shall be made for overnight parking of haul trucks to avoid causing traffic or circulation congestion.</p>	<p>Develop and submit traffic safety and control plan before the initiation of construction-related activity that could adversely affect traffic on local roadways</p> <p>Implement plan throughout construction</p>	SAFCA and its primary construction contractor		
	<p>(b) All operations shall limit and expeditiously remove, as necessary, the accumulation of project-generated mud or dirt from adjacent public streets at least once every</p>	Throughout construction	SAFCA and its primary construction		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	24 hours if substantial volumes of soil have been carried onto adjacent paved public roadways during project construction.		contractor		
	(c) Construction of project features along the Sacramento River east levee shall be accommodated through the creation of temporary haul roads along the land side of the adjacent levee and berm footprint. Garden Highway shall not be used for project construction or materials hauling activities.	Throughout construction	SAFCA and its primary construction contractor		
	(d) Before the start of the 2008 construction season, SAFCA shall coordinate with Sacramento and Sutter Counties to address maintenance and repair of affected roadways resulting from increased truck traffic.	Before the start of the 2008 construction season	SAFCA		
3.10-c	Notify Emergency Service Providers about Project Construction and Maintain Emergency Access or Coordinate Detours with Providers				
	(a) SAFCA shall implement Mitigation Measures 3.10-a and 3.10-b, described above.	[See above]	[See above]		
	(b) Before commencement of project construction, SAFCA shall provide notification of project construction to all appropriate emergency service providers in Sutter County, Sacramento County, and/or the city of Sacramento and shall coordinate with providers throughout the construction period to ensure that emergency access through construction areas is maintained.	Before the beginning of project construction	SAFCA		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
Air Quality					
3.11-a	<p>Implement District-Recommended Control Measures to Minimize Temporary Emissions of ROG, NO_x, and PM₁₀ during Construction</p> <p>SAFCA shall implement mitigation measures as recommended by the Feather River Air Quality Management District (FRAQMD) or the Sacramento Metropolitan Air Quality Management District (SMAQMD), as applicable, and shall comply with all applicable rules and regulations of, FRAQMD or SMAQMD, as described below.</p> <p>Construction in Sutter County (FRAQMD)</p> <p>For portions of the project occurring in Sutter County, FRAQMD's <i>Indirect Source Review Guidelines</i> and online CEQA guidance provide mitigation measures for reducing short-term air quality impacts. As recommended by FRAQMD, SAFCA shall ensure that the following mitigation measures are implemented during all project construction activities to the extent practicable. In addition, construction of the proposed levee improvements are required to comply with all applicable FRAQMD rules and regulations, in particular Rule 3.0 (Visible Emissions), Rule 3.16 (Fugitive Dust Emissions), and Rule 3.15 (Architectural Coatings).</p>				
	<p>1. SAFCA shall require the contractor to implement a Fugitive Dust Control Plan that includes the following measures:</p> <ul style="list-style-type: none"> All earth-moving operations should be suspended when winds exceed 20 miles per hour or when winds carry dust beyond the property line despite implementation of all feasible dust control measures. 	<p>Submit fugitive dust control plan before the commencement of ground-disturbing construction activities</p> <p>Implement</p>	SAFCA and its primary construction contractor		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	<ul style="list-style-type: none"> Construction sites shall be watered as directed by the Sutter County Department of Public Works or FRAQMD and as necessary to prevent fugitive dust violations. An operational water truck should be on-site at all times. Apply water to control dust as needed to prevent visible emissions violations and off-site dust impacts. On-site dirt piles or other stockpiled particulate matter should be covered, wind breaks installed, and water and/or soil stabilizers employed to reduce wind blown dust emissions. Incorporate the use of approved nontoxic soil stabilizers to all inactive construction areas according to manufacturers' specifications. All transfer processes involving a free fall of soil or other particulate matter shall be operated in such a manner as to minimize the free-fall distance and fugitive dust emissions. Apply approved chemical soil stabilizers to all inactive construction areas (previously graded areas that remain inactive for 96 hours), including unpaved roads and employee/equipment parking areas, according to the manufacturers' specifications. To prevent track-out, wheel washers should be installed where project vehicles and/or equipment exit onto paved streets from unpaved roads. Vehicles and/or equipment shall be washed before each trip. Alternatively, a gravel bed or rumble strip may be installed as appropriate at 	measures during construction			

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	<p>vehicle/equipment site exit points to effectively remove soil buildup on tires and tracks to prevent/diminish track-out.</p> <ul style="list-style-type: none"> • Paved streets shall be swept frequently (at least once per day by water sweeper with reclaimed water recommended; wet broom) if soil material has been carried onto adjacent paved, public thoroughfares from the project site. • Provide temporary traffic control as needed during all phases of construction to improve traffic flow, as deemed appropriate by the Sutter County Department of Public Works and/or the California Department of Transportation and to reduce vehicle dust emissions. An effective measure is to enforce vehicle traffic speeds at or below 15 miles per hour on unpaved roads. • Reduce traffic speeds on all unpaved surfaces to 15 miles per hour or less and reduce unnecessary vehicle traffic by restricting access. Provide appropriate training, on-site enforcement, and signage. • Reestablish ground cover on the construction site as soon as possible, through seeding and watering. • Open burning is yet another source of fugitive gas and particulate emissions, and it shall be prohibited at the project site. No open burning of vegetative waste (natural plant growth wastes) or other legal or illegal burn materials (trash, demolition debris, etc.) may be conducted at the project site. Vegetative wastes should be chipped or delivered to waste to energy facilities (permitted biomass facilities), 				

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	mulched, composted, or used for firewood. It is unlawful to haul waste materials off-site for disposal by open burning.				
2.	Construction equipment exhaust emissions shall not exceed FRAQMD Regulation III, Rule 3.0, Visible Emissions Limitations (40% opacity or Ringelmann 2.0). Operators of vehicles and equipment found to exceed opacity limits shall take action to repair the equipment within 72 hours or remove the equipment from service. Failure to comply may result in a notice of violation.	During construction	SAFCA and its primary construction contractor		
3.	The primary contractor shall be responsible for ensuring that all construction equipment is properly tuned and maintained before and during on-site operation.				
4.	Minimize idling time to 10 minutes, to conserve fuel and minimize emissions.				
5.	Use existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.				
6.	Portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, may require California Air Resources Board (ARB) Portable Equipment Registration with the state or a local district permit. The owner/operator shall be responsible for arranging appropriate consultations with ARB or FRAQMD to determine registration and permitting requirements before equipment is operated at the site.	Before the beginning of equipment use on the site	SAFCA and its primary construction contractor		
7.	The proponent shall assemble a comprehensive inventory list (i.e. make, model, engine year, horsepower, and emission rates) of all heavy-duty off-	Before beginning of construction activities using	SAFCA and its primary construction		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	road (portable and mobile) equipment (50 horsepower [hp] and greater) that will be used an aggregate of 40 or more hours for the construction project and apply the following mitigation measure: <ul style="list-style-type: none"> Reducing NO_x emissions from off-road diesel-powered equipment: The project shall provide a plan for approval by FRAQMD demonstrating that the heavy-duty (equal to or greater than 50 hp) off-road equipment to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20% NO_x reduction and 45% particulate reduction¹ compared to the most recent ARB fleet average at time of construction. 	heavy equipment	contractor		
	<p>Construction in Sacramento County (SMAQMD)</p> <p>For construction that would occur in Sacramento County, the following measures apply and shall be implemented:</p> <p>SAFCA shall pay SMAQMD an off-site mitigation fee for implementation of any proposed alternatives for the purpose of reducing impacts to a less-than-significant level.</p> <p>Based on the construction information presented in Section 2.3, "Description of the Proposed Project," of the DEIR and the emissions calculations shown in DEIR Appendix C, if the proposed project is selected for implementation, the specific fee amount to offset NO_x emissions for 2008 work that would occur in Sacramento County would be \$45,551 (see DEIR Appendix C for fee calculations) plus a 5% administrative fee of \$2,277.55. Thus, the total mitigation</p>	Before the beginning of groundbreaking construction activities	SAFCA		

¹ Acceptable options for reducing emissions may include use of late-model engines, low-emission diesel products, alternative fuels, engine retrofit technology (Carl Moyer Guidelines), and after-treatment products; voluntary off-site mitigation projects; providing funds for air district off-site mitigation projects; and/or other options as they become available. FRAQMD should be contacted to discuss alternative measures.

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	<p>fee for project-related work conducted in Sacramento County during the 2008 construction season is currently estimated to be \$47,828.55. Mitigation fees for work to occur in 2009 and 2010 are expected to be similar and would be calculated when the construction emissions can be more accurately determined. This calculation would occur when an alternative has been selected, improvement plans have been prepared, and accurate project-specific information is available. Calculation of fees associated with subsequent improvement plans/project phases shall be conducted at the time of project approval. The applicable fee rate shall be determined and the total fee shall be calculated based on the fee rate in effect at the time that subsequent environmental documents are prepared. The fee for subsequent construction projects shall be remitted to SMAQMD before groundbreaking.</p>				
	<p>SAFCA shall pay into SMAQMD's off-site construction mitigation fund to further mitigate construction-generated emissions of NO_x that exceed SMAQMD's daily emission threshold of 85 lb/day. The calculation of daily NO_x emissions is based on the cost to reduce 1 ton of NO_x at the time when the document is prepared (currently \$14,300 per ton). The determination of the final mitigation fee shall be conducted in coordination with SMAQMD before any demolition or ground disturbance occurs for any project phase.</p> <p>Calculation of and payment of the fee for all subsequent project phases shall also be included in the Mitigation Monitoring and Reporting Program for the project.</p>	<p>Before any demolition or ground disturbance occurs for any project phase</p>	<p>SAFCA</p>		
	<p>SAFCA shall reduce NO_x and visible emissions from heavy-duty diesel equipment by implementing the following measures:</p>				

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	<ul style="list-style-type: none"> A plan shall be developed, in consultation with SMAQMD, demonstrating that the heavy-duty (>50 hp), off-road vehicles to be used in the construction project (including owned, leased, and subcontractor vehicles) will achieve a projectwide fleet-average 20% NO_x reduction and 45% particulate reduction compared to the most recent ARB fleet average at the time of construction. Acceptable options for reducing emissions include the use of late-model engines, low-emission diesel products, alternative fuels, particulate-matter traps, engine retrofit technology, after-treatment products, and/or such other options as become available. 	Develop plan before the beginning of construction Implement measures during construction	SAFCA and its primary construction contractor		
	<ul style="list-style-type: none"> A comprehensive inventory of all off-road construction equipment equal to or greater than 50 hp that will be used for an aggregate of 40 or more hours during any portion of project construction shall be submitted to SMAQMD. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction operations occur. At least 48 hours before heavy-duty off-road equipment is used, SAFCA shall provide SMAQMD with the anticipated construction timeline, including the start date, and the name and phone number of the project manager and on-site foreman. 	Submit updated inventory to SMAQMD monthly throughout the duration of project construction	SAFCA and its primary construction contractor		
	<ul style="list-style-type: none"> Emissions from off-road, diesel-powered equipment used on the project site shall not exceed 40% opacity for more than 3 minutes in any 1 hour. Any equipment found to exceed 40% opacity (or Ringlemann 2.0) shall be repaired immediately, and SMAQMD shall be notified of noncompliant equipment within 48 hours of identification. A visual survey of all in-operation 	Throughout construction Complete equipment survey at least weekly	SAFCA and its primary construction contractor		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	equipment shall be made at least weekly. A monthly summary of visual survey results shall be submitted to SMAQMD throughout the construction period, except that the monthly summary shall not be required for any 30-day period in which no construction operations occur. The monthly summary shall include the quantity and type of vehicles surveyed, as well as the dates of each survey. SMAQMD and/or other officials may conduct periodic site inspections to determine compliance.	Submit monthly summary of equipment survey results to SMAQMD throughout the construction period			
	<p>All Project Construction</p> <p>SAFCA shall implement the following additional measures to reduce construction emissions of PM₁₀ comprising fugitive dust and mobile-exhaust and ozone precursors throughout the project area:</p> <ul style="list-style-type: none"> ▶ SAFCA shall submit a construction emission/dust control plan to SMAQMD and FRAQMD and shall receive approval of the plan before groundbreaking. All grading operations shall be suspended when fugitive dust levels exceed levels specified by SMAQMD or FRAQMD rules. SAFCA and its primary construction contractors shall ensure that dust is not causing a nuisance beyond the property line of the construction site. ▶ Open burning of removed vegetation shall be prohibited. Vegetative material shall be chipped on-site or delivered to waste-to-energy facilities. ▶ An operational water truck shall be on-site at all times. Water shall be applied to control dust as needed to prevent dust impacts off-site. 	<p>Submit construction emission/dust control plan to SMAQMD and FRAQMD for approval before groundbreaking</p> <p>Implement measures throughout construction</p>	SAFCA and its primary construction contractor		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	<ul style="list-style-type: none"> ▶ Unpaved areas subject to vehicle traffic, including employee parking areas and equipment staging areas, shall be stabilized by being kept wet, treated with a chemical dust suppressant or soil binders, or covered. ▶ The track-out of bulk material onto public paved roadways as a result of operations, or erosion, shall be minimized by the use of track-out and erosion control, minimization, and preventive measures, and removed within 1 hour from adjacent streets such material anytime track-out extends for a cumulative distance of greater than 50 feet onto any paved public road during active operations. ▶ All visible roadway dust tracked out upon public paved roadways as a result of active operations shall be removed at the conclusion of each work day when active operations cease, or every 24 hours for continuous operations. Wet sweeping or a HEPA filter equipped vacuum device shall be used for roadway dust removal. ▶ Low-sulfur fuel shall be used for stationary construction equipment. ▶ Existing power sources or clean fuel generators shall be used rather than temporary power generators to the extent feasible. ▶ Low-emission on-site stationary equipment shall be used. ▶ Vehicle speeds on unpaved roadways shall be limited to 15 miles per hour. ▶ Idling time for all heavy-duty equipment shall be limited to 10 minutes. 				

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	<ul style="list-style-type: none"> ▶ Diesel-fueled construction equipment that will operate on the project site for more than 40 hours shall be equipped with diesel particulate filters (DPFs) that meet ARB “Level 3” verification standards. A list of currently verified DPF technologies can be found at http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm. 				
Noise					
3.12-a	<p>Implement Noise-Reducing Construction Practices, Prepare a Noise Control Plan, and Monitor and Record Construction Noise Near Sensitive Receptors</p> <p>The primary construction contractors shall employ noise-reducing construction practices. Measures that shall be used to limit noise shall include the following:</p> <ul style="list-style-type: none"> ▶ Equipment shall be used as far away as practical from noise-sensitive uses. ▶ All construction equipment shall be equipped with noise-reduction devices such as mufflers to minimize construction noise and all internal combustion engines shall be equipped with exhaust and intake silencers in accordance with manufacturers’ specifications. ▶ Equipment that is quieter than standard equipment shall be used, including electrically powered equipment instead of internal combustion equipment where use of such equipment is a readily available substitute that accomplishes project tasks in the same manner as internal combustion equipment. ▶ Construction site and haul road speed limits shall be established and enforced. 	Implement measures throughout construction	SAFCA and its primary construction contractor		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	<ul style="list-style-type: none"> ▶ The use of bells, whistles, alarms, and horns shall be restricted to safety warning purposes only. ▶ Noise-reducing enclosures shall be used around stationary noise-generating equipment (e.g., compressors and generators). ▶ Fixed construction equipment (e.g., compressors and generators), construction staging and stockpiling areas, and construction vehicle routes shall be located at the most distant point feasible from noise-sensitive receptors. ▶ When noise sensitive uses are within close proximity and subject to prolonged construction noise, noise-attenuating buffers such as structures, truck trailers, or soil piles shall be located between noise generation sources and sensitive receptors. 				
	<ul style="list-style-type: none"> ▶ Before construction activity begins within 500 feet of one or more residences, written notification shall be provided to the potentially affected residents, identifying the type, duration, and frequency of construction activities. Notification materials shall also identify a mechanism for residents to register complaints with the appropriate jurisdiction if construction noise levels are overly intrusive. The distance of 500 feet is based on the 60-dBA contour of the loudest anticipated construction activity other than pile driving (as listed in DEIR Table 3.12-4). 	Before construction within 500 feet of one or more residences	SAFCA and its primary construction contractor		
	<ul style="list-style-type: none"> ▶ If noise-generating activities are conducted within 100 feet of noise-sensitive receptors (the 70-dBA noise contour of construction noise), the primary contractor shall continuously measure and record sound generated as a result of the proposed work activities. Sound monitoring equipment shall be calibrated before taking 	During construction within 100 feet of noise-sensitive receptors	SAFCA and its primary construction contractor		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	measurements and shall have a resolution within 2 dBA. Monitoring shall take place at each activity operation adjacent to sensitive receptors. The recorded noise monitoring results shall be furnished weekly to SAFCA.	Submit recorded noise monitoring results weekly to SAFCA			
	<ul style="list-style-type: none"> The primary contractor shall prepare a detailed noise control plan based on the construction methods proposed. This plan shall identify specific measures to ensure compliance with the noise limits specified above. The noise control plan shall be submitted to and approved by SAFCA before any noise-generating construction activity begins. 	Submit noise control plan to SAFCA before beginning of noise-generating construction activity	SAFCA and its primary construction contractor		
3.12-b	<p>Implement Measures to Avoid Construction-Related Vibration Effects</p> <p>The following measures shall be implemented to avoid and minimize construction vibration effects on sensitive receptors and the structure near the Pumping Plant No. 2 site:</p> <ul style="list-style-type: none"> Pile driving shall be conducted as far as practicable from the residential structure. Vibration monitoring equipment shall be placed at the property line adjacent to large equipment and, with owner approval, at the back of the residential structure adjacent to the large equipment. A pre- and postconstruction survey shall be conducted to assess potential architectural damage from pile driving at the residence near the Pumping Plant No. 2 site. The survey shall include visual inspection of the structure, documentation of the structure by means of photographs and video. This documentation shall be reviewed with the individual owner prior to any construction activity. Postconstruction monitoring of 	<p>Implement measures throughout construction</p> <p>Conduct survey before and after construction</p>	SAFCA and its primary construction contractor		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	the structure shall be performed to identify (and repair, if necessary) damage, if any, from construction vibrations. Any damage shall be documented with photographs and video. This documentation shall also be reviewed with the individual property owners.				
3.12-c	<p>Implement Noise-Reduction Measures to Reduce the Effects of Haul Truck Traffic Noise</p> <ul style="list-style-type: none"> ▶ All heavy trucks shall be equipped with noise control (e.g., muffler) devices in accordance with manufacturers' specifications. ▶ All haul trucks shall be inspected before use and a minimum of once per year to ensure proper maintenance and presence of noise-control devices (e.g., lubrication, nonleaking mufflers, and shrouding). ▶ Before haul truck trips are initiated during a construction season on roads within 600 feet of residences (the 60-dBA noise contour of haul truck traffic), written notification shall be provided to the potentially affected residents identifying the hours and frequency of haul truck trips. Notification materials shall also identify a mechanism for residents to register complaints with the appropriate jurisdiction if haul truck noise levels are overly intrusive or occur outside the exempt daytime hours for the applicable jurisdiction, as listed in DEIR Table 3.12-1. 	<p>Implement measures throughout construction</p> <p>Inspect haul trucks before use and a minimum of once per year</p> <p>Provide written notification to the potentially affected residents before haul truck trips are initiated on roads within 600 feet of residences</p>	SAFCA and its primary construction contractor		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
Recreation					
3.13-b	<p>Compensate the City of Sacramento for Encroachments that Cause Permanent Loss of the Recreational Use of Affected Recreational Facilities</p> <p>Before the start of construction, SAFCA shall compensate the City of Sacramento for any loss of land on the Costa Park site. The negotiated compensation may be in the form of payment, replacement land, or other in-kind compensation for the permanent loss of recreational use at the affected site.</p>	Before the start of construction	SAFCA		
Utilities and Service Systems					
3.15-a	<p>Coordinate with Irrigation Water Supply Users Before and During All Irrigation Infrastructure Modifications and Minimize Interruptions of Supply</p> <ul style="list-style-type: none"> ▶ Coordinate the timing of all modifications to irrigation supply infrastructure with the affected infrastructure owners and water supply users, either directly or through NMWC. ▶ Include detailed scheduling of the phases of modifications/replacement of existing irrigation infrastructure components in project design and in construction plans and specifications. ▶ Plan and complete modifications of irrigation infrastructure for the non-irrigation season to the extent feasible. ▶ Provide for alternative water supply, if necessary, when modification/replacement of irrigation infrastructure must be conducted during a period when it would otherwise be in normal use by an irrigator. 	During project design and throughout construction	SAFCA and its primary contractors for engineering design and construction		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	<ul style="list-style-type: none"> Ensure either that (1) users of irrigation water supply do not, as a result of physical interference associated with the proposed project, experience a significant interruption in irrigation supply when such supply is needed for normal, planned farming operations (i.e., a decrease in level of service in comparison with the existing level of service), or (2) users of irrigation water supply that experience a significant decrease in an existing level of service that meets the established standards for the project area are compensated in kind for losses associated with the reduction in level of service. 				
3.15-b	<p>Verify Utility Locations, Coordinate with Utility Providers, Prepare a Response Plan, and Conduct Worker Training with Respect to Accidental Utility Damage</p> <ul style="list-style-type: none"> Before the start of construction, SAFCA and its primary contractors shall coordinate with USACE, the state, and applicable utility providers to implement orderly relocation of utilities that need to be removed or relocated. No new utility poles shall be located on the water side of Garden Highway in the vicinity of existing waterside residences unless there is no feasible alternative for providing service to these residences. Notification of any potential interruptions in service shall be provided to the appropriate agencies. Before the start of construction, utility locations shall be verified through field surveys and the use of the Underground Service Alert services. Any buried utility lines shall be clearly marked in the area of construction in advance of any earthmoving activities. Before the start of construction, a response plan shall be prepared to address potential accidental damage to a 	Before the start of construction	SAFCA and its primary contractors for engineering design and construction		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	<p>utility line. The plan shall identify chain of command rules for notification of authorities and appropriate actions and responsibilities to ensure the safety of the public and workers. Worker education training in response to such situations shall be conducted by the contractor.</p> <ul style="list-style-type: none"> ▶ Utility relocations shall be staged to minimize interruptions in service. 				
Hazards and Hazardous Materials					
3.16-b(1)	<p>Ensure that Contaminants Are Not Present at Unacceptable Levels on the Yuki Farms Site Near the Location of Project Construction Activities</p> <p>Before the start of any construction activities on the Sacramento County–owned property known as “Yuki Farms,” SAFCA shall ensure that (1) any issues of documented soil or groundwater contamination on the property have been resolved by Sacramento County in accordance with federal, state, and local requirements; or (2) a qualified hazardous materials specialist, through soil and groundwater testing, has determined that any previously documented contamination site on the property is sufficiently distant from areas of project-related disturbance to ensure that hazardous materials at the site will not be encountered during construction activity and would not migrate into water carried in the new canals and pose a threat to the safety of construction workers, the general public, or the environment.</p>	<p>Before the beginning of construction activities on “Yuki Farms”</p>	<p>SAFCA</p>		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
3.16-b(2)	<p>Prepare a Worker Health and Safety Plan, and Implement Appropriate Measures to Minimize Potential Exposure to Unknown Hazardous Materials</p> <p>If, during site preparation and construction activities, previous undiscovered or unknown evidence of hazardous materials contamination is observed or suspected through either obvious or implied site characteristics (e.g., stained or odorous soil), construction activities shall immediately cease in the area of the find. A qualified hazardous materials specialist shall assess the construction site and shall collect and analyze soil samples, if needed, from the site. If contaminants at unacceptable levels are identified in the samples, SAFCA or its primary construction contractor shall implement measures in accordance with federal and state regulations before beginning construction activities.</p>	During site preparation and construction activities	SAFCA and its primary construction contractor		
	<p>SAFCA shall require all contractors to prepare a worker health and safety plan before the start of construction activities. This plan shall identify, at a minimum, all contaminants that could be encountered during construction activity; all appropriate worker, public health, and environmental protection equipment and procedures to be used during project activities; emergency response procedures; the most direct route to the nearest hospitals; and a site safety officer. The plan shall describe actions to be taken should hazardous materials be encountered on-site, including protocols for handling hazardous materials and preventing their spread and emergency procedures to be taken.</p>	<p>Prepare worker health and safety plan before the start of construction activities</p> <p>Implement measures throughout site preparation and construction activities</p>	SAFCA and its primary construction contractor		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
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3.16-c	<p>Coordinate Work in the Critical Zone with Airport Operations and Restrict Night Lighting within and near the Runway Approaches</p> <ul style="list-style-type: none"> ▶ No borrow activities shall be conducted within the Airport Critical Zone during nighttime hours. ▶ All project-related nighttime lighting that is in, or is aligned with, the Airport runway approach zones (Natomas Cross Canal [NCC] south levee Reaches 1–4 and Sacramento River east levee Reaches 1–11B) shall be directed downward to avoid potential interference with nighttime aircraft operations. 	Implement measures throughout construction	SAFCA and its primary construction contractor		
	<ul style="list-style-type: none"> ▶ SAFCA shall ensure that SCAS is informed in advance of the timing and nature of all construction activities within the Airport Critical Zone, and shall coordinate with SCAS during final project design to ensure that all appropriate safety precautions within the Critical Zone are incorporated into the construction plans. 	<p>Inform SCAS in advance of the timing and nature of all construction activities within the Airport Critical Zone</p> <p>Coordinate with SCAS during final project design</p>	SAFCA		
3.16-d	<p>Implement Measures to Avoid Substantial Increases in Hazardous Wildlife within the Critical Zone or Wildlife Collisions with Aircraft</p> <p>A qualified biologist, retained by SAFCA, shall conduct a wildlife-aircraft strike analysis to determine to what extent the proposed project could increase the potential for wildlife collisions with aircraft, and how the project could be modified to reduce any potential increase in wildlife collisions. The analysis, which shall be completed as part of project design of Airport borrow sites and of woodland</p>	During project design	SAFCA and its primary contractors for engineering design		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	<p>plantings within the Critical Zone (2009–2010 construction), shall include the following:</p> <ul style="list-style-type: none"> ▶ A summary of existing information on wildlife-aircraft strikes at the Airport, relevant research conducted at the Airport and other airports in the United States, and a description of the sources of uncertainty resulting from insufficient data. ▶ A comparison of current land use and habitat types in the Natomas Basin with anticipated land use changes over the next 20 years (i.e., the period covered by the Airport’s master plan). The purpose of this analysis will be to predict how anticipated land use changes will influence the diversity, abundance, and distribution of hazardous wildlife in the vicinity of the Airport. Particular attention will be given to analyzing potential effects of implementing the proposed project on hazardous wildlife populations. ▶ An analysis of the anticipated effects of project implementation on the frequency and patterns of wildlife-aircraft strikes at the Airport ▶ Mitigation options, including alternative designs for habitat compensation sites, on-site versus off-site mitigation opportunities, and monitoring and adaptive management options that could be implemented if it is determined that the overall project could result in a no net increase of risk to aircraft. <p>If the wildlife-aircraft strike analysis concludes that implementation of project elements proposed for construction in 2009–2010 would not result in an increase the potential for wildlife collisions with aircraft, no further mitigation is necessary</p>				

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
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	<p>If the wildlife-aircraft strike analysis concludes that project elements proposed for construction in 2009–2010 could increase the potential for wildlife collisions with aircraft, SAFCA shall implement the following mitigation:</p> <ul style="list-style-type: none"> ▶ SAFCA, in consultation with SCAS and the FAA, shall design and implement mitigation and/or modify the proposed project as needed until it is determined by SCAS and the FAA that the proposed project would not substantially increase the risk of wildlife collisions with aircraft 				
3.16-e	<p>Notify State and Local Emergency Management Agencies about Project Construction and Coordinate SR 99 Detours with These Agencies to Ensure That Any Need for Emergency Use Is Not Significantly Impaired</p> <p>(a) SAFCA shall implement Mitigation Measures 3.10-a, 3.10-b, and 3.10-c.</p>	[See above]	[See above]		
	<p>(b) During project design, SAFCA shall coordinate with Caltrans to plan detours through the NCC south levee construction area at SR 99/70 that will ensure an acceptable flow of traffic through this area.</p>	During project design	SAFCA		
	<p>(c) Before the beginning of construction, SAFCA shall notify the California Highway Patrol and the Sutter County, Sacramento County, and City of Sacramento emergency management agencies of the timing and nature of detours and traffic controls required on SR 99/70 during project construction. SAFCA shall coordinate with these agencies and Caltrans to ensure that information on potential traffic delays and impairment of the use of this highway as an emergency evacuation route are appropriately publicized, as determined necessary by these agencies.</p>	Before the beginning of construction	SAFCA		

Mitigation Monitoring and Reporting Program for the Natomas Levee Improvement Program (NLIP) Landside Improvements Project					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
3.16-f	<p>Prepare and Implement a Fire Management Plan to Minimize Potential for Wildland Fires</p> <p>SAFCA and its primary contractors for engineering design and construction shall prepare and implement a fire management plan in coordination with the appropriate emergency service and/or fire-suppression agencies of the applicable local jurisdictions before beginning project construction. The plan shall describe fire prevention and response methods, including fire precaution, fire presuppression, and suppression measures that are consistent with the policies and standards of the affected jurisdictions. All materials and equipment required for implementation of the plan shall be maintained on-site. All construction personnel shall be made familiar with the contents of the plan before construction activities begin.</p>	<p>Prepare fire management plan before beginning project construction</p> <p>Conduct construction personnel training before construction activities begin</p> <p>Implement measures throughout construction</p>	SAFCA and its primary contractors for engineering design and construction		