

**CONCEPTUAL ENHANCEMENT PLAN FOR THE SALT RIVER
RESTORATION PROJECT**

DATE: January 25, 2007

PROJECT LOCATION: The Salt River Restoration Project is located near the town of Ferndale, Humboldt County, California within the Eel River Delta. The Project area includes three tributary watersheds of the Salt River (Francis Creek, Williams Creek and Reas Creek), the lower 2.5 miles of the mainstem of the Salt River, and Riverside Ranch within the Salt River estuary (40° 37' 28.38" North Latitude 124° 18' 15.51 West Longitude).

The Humboldt County Resource Conservation District (HCRCD) will prepare an environmental impact report (EIR) for the Salt River Restoration Project, which includes the following components:

- Restoration of fish passage in the lower Salt River
- Restoration of estuary habitat on Riverside Ranch
- Sediment and erosion reduction in Francis Creek, Williams Creek and Reas Creek watersheds
- Reconnection of Williams creek to the Salt River

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The Humboldt County Resource Conservation District (HCRCD), the California Environmental Quality Act (CEQA) Lead Agency for the Salt River Restoration Project (the Project), will prepare an Environmental Impact Report (EIR) in compliance with CEQA for the Project.

This EIR will evaluate at a program level the environmental effects of implementing a plan for four restoration elements: 1) restoration of fish passage within the lower Salt River; 2) restoration of estuary habitat on the Riverside Ranch; 3) sediment and erosion reduction in Francis Creek, Williams Creek and Reas Creek watersheds; and 4) the reconnection of Williams Creek to the mainstem Salt River. These four components comprise the overall Salt River Restoration Project. The EIR also will include a project-level analysis of the first three plan components identified above, for which designs have been developed. Subsequent CEQA review will be required prior to implementation of Williams Creek reconnection with the Salt River, which has not yet been designed and which would be implemented after the other three components.

The Salt River Restoration Project addresses factors limiting salmonid survival at an ecosystem scale by restoring fish passage and fish habitat in the lower Salt River, restoring estuary rearing habitat on Riverside Ranch and reducing sediment and erosion sources in tributary watersheds. The purpose of the Project is to restore a mosaic of habitat types including permanent wetlands, tidal marsh habitat, riparian canopy, open water and tidal sloughs; to allow fish access to historical tributary habitat for spawning and rearing; and, to reduce the cause of habitat degradation by addressing sediment sources in tributary watersheds.

The State has awarded two major grants for implementation of the Project: the State Water Resources Control Board 2005-2006 Consolidated Grant and the North Coast Integrated Regional Water Management Plan Grant.

The Project area is owned by various private landowners who have cooperatively joined together to form the Salt River Advisory Group (SRAG). The Salt River Advisory Group (SRAG), a subcommittee of the RCD, is leading efforts to restore the Salt River and is comprised of agencies and local landowners who are working collaboratively to address watershed problems and to help maintain existing rural livelihoods that include dairy and cattle farming.

The project will be conducted in close coordination with the National Marine Fisheries Service (NMFS), California Department of Fish and Game (CDFG), US Army Corps of Engineers, Humboldt County, the City of Ferndale other local agencies, and landowners in the project area.

In the near future, and following additional analysis, the RCD will issue a Notice of Preparation for the CEQA document. The NOP is an important step in the environmental scoping process, which is designed to determine the range of issues to be addressed in the EIR. The objectives of scoping include:

- Ensuring agency and public involvement in the environmental review process,
- Determining which specific impacts must be evaluated in the EIR,

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- Establishing a reasonable range of alternatives, and
- Identifying the scope of issues that must be discussed in order to adequately and accurately address the potential impacts of the project as they relate to permitting and approval authority.

HCRCDC will request comments on the scope and content of the draft EIR.

Pursuant to CEQA Section 21080.4(a) responsible and trustee agencies are asked to provide in writing the scope and content of the environmental information that is germane to their statutory responsibilities, as these agencies will need to use the EIR prepared by the HCRCDC when considering permits or other approvals for the project. Responsible and trustee agencies are also requested to provide a list of the permits and/or other approvals that must be obtained in order to implement the project.

A Notice of Preparation will be prepared pursuant to CEQA Section 21080.6, and will include:

- 1) a description of the proposed action and alternatives and the basis for selecting the alternatives,
- 2) a list of the potentially significant effects on the environment of the project, and
- 3) the scope of, and analyses and methodology for, EIR preparation. As indicated in the NOP, the major environmental issues to be addressed include water quality, biological resources, hydrology, visual resources, historic resources, land use, air quality, and noise.

For additional information about the project or the scoping process, please contact:

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Following completion of the draft NOP, a formal scoping hearing, designed to solicit public comment on the proposed action and alternatives, will be scheduled.

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NOP DISTRIBUTION:

A Notice of Preparation/Intent will be sent to the following agencies, organizations, firms, and individuals:

California Department of Fish and Game
California Regional Water Quality Control Board
California State Clearinghouse
California State Coastal Conservancy
California State Lands Commission
California State Parks??
City of Ferndale
Humboldt County
Riverside Water District
Del Oro Water Company
National Marine Fisheries Service
Pacific Gas and Electric Company
Reclamation District ??
U. S. Army Corps of Engineers
U. S. Bureau of Reclamation
U. S. Environmental Protection Agency
U.S. Fish and Wildlife Service
Bertha Russ Lytle Foundation
Ferndale Chamber of Commerce

**CONCEPTUAL ENHANCEMENT PLAN
FOR THE SALT RIVER RESTORATION PROJECT**

INTRODUCTION:

The Salt River Restoration Project is located in Humboldt County, near the City of Ferndale, and includes restoration of aquatic habitat in the lower Salt River, estuarine restoration on Riverside Ranch, and restoration of controllable sediment and erosion sources in Francis Creek, Williams Creek and Reas Creek watersheds. The goals of the project are to:

1. Benefit native species by re-establishing natural ecological processes;
2. Address sediment sources in headwater areas of the Salt River watershed;
3. Restore fish passage and instream habitat in the lower Salt River
4. Improve floodplain function in the lower Salt River by restoring connectivity between the channel and its floodplain;
5. Restore wetland and salt marsh habitat in the lower Salt River.
6. Increase the tidal prism into the lower Salt River and the extent of estuary habitat through restoration on Riverside Ranch.

The environmental impact report (EIR) will be prepared in compliance with the California Environmental Quality Act (CEQA) and the CEQA Guidelines, as amended. Because the document may be adapted or otherwise used by the US Army Corps of Engineers for compliance with the National Environmental Policy Act (NEPA), it will be formatted to address all alternatives at an equal level, as required under NEPA. The Humboldt County Resource Conservation District (HCRCD) will be the lead agency under CEQA. In accordance with CEQA, the lead agency has the responsibility for the scope, content, and legal adequacy of the document.

The Draft EIR (DEIR) will incorporate public concerns associated with the Proposed Action and associated project alternatives, and will be sent out for a 45-day public review period, during which time both written and verbal comments will be solicited on the adequacy of the document. The Final EIR (FEIR) will address the comments received on the DEIR during public review. The document will be furnished to all who commented on the DEIR, and made available to anyone that requests a copy during the 45-day public comment period. The draft and final EIR must 1) provide a full and fair discussion of the proposed action's significant environmental impacts, and 2) inform the decision-makers and the public of reasonable alternatives that would avoid or minimize adverse impacts.

The final step in the CEQA process for the EIR is certifying the EIR and adopting a Mitigation Monitoring and Reporting Plan. A certified EIR indicates that the environmental document has been completed in compliance with CEQA; that the decision-making body of the lead agency reviewed and considered the FEIR prior to approving the project; and that the FEIR reflects the lead agency's independent judgment and analysis.

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SCOPING PROCESS:

Public participation in the environmental scoping process is an important step in determining the full scope of issues to be addressed in the EIR. HCRCD will request comments on the scope and content of the EIR, as outlined in a soon-to-be-issued NOP.

PROJECT LOCATION:

The Salt River Restoration Project is located near the town of Ferndale, Humboldt County, California, within the Eel River Delta. The Project area includes tributary watersheds of the Salt River (Francis Creek, Williams Creek and Reas Creek), the lower 2.5 miles of the mainstem of the Salt River, and Riverside Ranch within the Salt River estuary (40° 37' 28.38" North Latitude 124° 18' 15.51 West Longitude).

BACKGROUND:

Historically, the lower Salt River functioned primarily as a migration corridor for salmonids on their way to spawning habitat in tributaries, including Francis, Williams and Reas Creeks, and rearing habitat for juveniles emigrating to the Eel River estuary. However, over the past decades the channel has filled with sediment. Flows are dispersed in winter, and the channel is dry in summer. Current instream habitat conditions in the Project area are not suitable for salmonids relative to migration, rearing or spawning. Currently, juvenile and adult salmonids utilize the Eel River estuary and the lower Salt River, downstream of the Project area, as evidenced by recoveries of fish during California Department of Fish and Game's estuary seining efforts.

Loss of channel capacity in the Project area has reduced migration opportunities for adult salmonids, emigration opportunities for juvenile salmonids and has resulted in a lack of holding and rearing habitat in the lower Salt River channel. Poor fish passage conditions has resulted in drastic population declines of all species of salmonids that formerly used the Salt River and its tributaries. During high flow events, flows in the lower Salt River are not directional downstream, but rather are backed up into lowlands and pastures due to the loss of stream gradient. At the upstream end of the action area the channel is completely filled with sediment and willows. A major road crossing in this segment is completely blocked with sediment, effectively acting as a dam with respect to fish migration and emigration. Channel filling due to sediment accumulation has also resulted in increased summer water temperatures in reaches that have flows. However, summer flows are subsurface through much of the lower river.

The dysfunction of the Salt River causes significant problems related to flooding and wastewater treatment violations. Historically, the Salt River had sufficient flow necessary for the City of Ferndale Wastewater Treatment Plant (WWTP) to comply with North Coast Regional Water Quality Control Board (RWQCB)

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wastewater dilution requirements; however, sedimentation has reduced the receiving water flows. This reduction in channel capacity and the corresponding reduction in receiving water flows have caused the WWTP to be in violation of water quality standards resulting in the issuance of a Cease and Desist Order by the WQCB. This situation is worsening with each storm event and associated sediment deposition. The lack of a defined channel at and downstream of the WWTP is causing treated effluent to flow undiluted into residential areas and agricultural lands. Also, high rates of sediment deposition occurring near the confluence of Francis Creek and the Salt River put the WWTP at greater risk of being flooded. While the City of Ferndale is planning to upgrade the WWTP, a channel must be re-established in order to contain and dilute the City's wastewater.

The Salt River Advisory Group (SRAG), a subcommittee of the RCD, is leading efforts to restore the Salt River and is comprised of agencies and local landowners who are working collaboratively to recover listed salmonids that once flourished in this watershed and to help maintain existing rural livelihoods that include dairy and cattle farming. The Project includes utilizing non-structural approaches to floodplain and channel restoration within the context of existing land use constraints to allow more natural, dynamic hydrologic and geomorphic processes to occur

PURPOSE:

The purpose of the Salt River Restoration Project is to restore natural hydrologic function and watershed processes to the Salt River watershed for the improvement of water quality, wetlands and fisheries habitat. Other intended benefits will result including local economic benefits related to maintaining existing land uses and infrastructure, reduced costs for maintenance of infrastructure and protection of other environmental resources. The Project takes an ecosystem approach to restoration and addresses the entire suite of habitats required by listed Pacific salmonids and other species in the watershed by including restoration of estuarine habitat, historic migration routes and addressing upslope sediment sources. The goals of the Project are as follows:

1. Benefit native species by re-establishing natural ecological processes and aquatic habitats that function to increase the self maintenance capacity of the lower Salt River channel;
2. Improve the balance between sediment transport and deposition to maintain habitat improvements;
3. Address sediment sources in headwater areas through streambank stabilization, livestock fencing, road drainage upgrades, decommissioning and riparian enhancement.

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4. Restore fish passage and instream habitat in the lower Salt River by removing sediment that has filled the channel and closed off historic migration routes for Pacific salmonids, and has caused flooding of agricultural lands.
5. Improve floodplain function in the lower Salt River by restoring connectivity between the channel and its floodplain.
6. Restore wetland and salt marsh habitat in the lower Salt River.
7. Optimize the amount of tidal exchange to increase tidal flushing, minimize tidal attenuation and maximize hydroperiods in the lower Salt River;
8. Increase the tidal prism into the lower Salt River and the extent of estuary habitat through modification of tidegates and levees on Riverside Ranch.
9. Reduce seasonal flooding and associated water quality degradation associated with flooding of adjacent dairies, private residences and the City of Ferndale's wastewater treatment plant

PROJECT DESCRIPTION

The Salt River Restoration Project is an ecosystem-scale project that includes restoration of mainstem fish habitat and sediment transport and deposition processes; restoration of estuary habitat and tidal exchange, and; restoration of headwater erosion sources.

The Salt River estuary is located within the Eel River Delta, considered one of the most significant estuaries along the entire coast of California. The mosaic of tidal flats, sloughs, marshes and seasonal wetlands supports hundreds of thousands of resident and migratory water-associated birds as well as at-risk fish species.

The EIR will evaluate individual and cumulative impacts of five alternatives, as well as the no project/no action alternative, in accordance with CEQA. Project Components to be assessed in the EIR include:

- Restoration of historic migration and rearing habitat in the lower Salt River and various operational scenarios;
- Estuary restoration on Riverside Ranch;
- Sediment and erosion reduction actions in Williams Creek, Francis Creek and Reas Creek watersheds.

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ALTERNATIVES

The EIR will:

- Assess the comparative impacts of the three “action” alternatives and the No-Project Alternative.
- Describe different operational scenarios.
- Treat alternatives’ impacts at equivalent levels of detail to meet possible National Environmental Policy Act (NEPA) evaluation requirements.

The alternatives vary with respect to restoration design of the lower Salt River resulting in each alternative having different amounts of grading, sediment and vegetation removal. Thus, potential impacts of each alternative vary as well as the level of restoration of specific habitat types including fish migration and wetland habitat.

The following actions are common to all alternatives and are described in more detail below:

- Estuary restoration on Riverside Ranch;
- Sediment and erosion reduction actions in Williams Creek, Francis Creek and Reas Creek watersheds;
- Reconnection of the Eastside Drainage Ditch;
- Relocation of the lower 2000’ of Francis Creek (near the City of Ferndale Wastewater Treat Plant) to a historic confluence location with the lower Salt River;
- Ongoing maintenance of the lower Salt River channel;
- Conceptual analysis for restoration of Williams Creek flows.

The EIR alternatives are as follows:

- No Action Alternative
- Alternative 1: Enlarged or Historic Lower Salt River Channel, Estuary Restoration on Riverside Ranch and Sediment/Erosion Reduction in Williams Creek, Francis Creek and Reas Creek Watersheds
- Alternative 2: Minimal Disturbance Lower Salt River Channel, Estuary Restoration on Riverside Ranch and Sediment/Erosion Reduction in Williams Creek, Francis Creek and Reas Creek Watersheds
- Alternative 3: Design/Maximum Floodplain Excavation Lower Salt River Channel, Estuary Restoration on Riverside Ranch and Sediment/Erosion Reduction in Williams Creek, Francis Creek and Reas Creek Watersheds
- Alternative 4: Two-Year Storm Flow Lower Salt River Channel, Estuary Restoration on Riverside Ranch and

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Sediment/Erosion Reduction in Williams Creek, Francis Creek and Reas Creek Watersheds.

- Alternative 5: Ten-Year Storm Flow Lower Salt River Channel, Estuary Restoration on Riverside Ranch and Sediment/Erosion Reduction in Williams Creek, Francis Creek and Reas Creek Watersheds (preferred alternative).

Alternatives components are summarized in Table 1 and briefly described as follows:

Alternative 1 will have the highest amount of disturbance to the existing stream and riparian corridor. Alternative 1 would entail excavation of a 500 foot wide channel by 15 feet in depth. The channel design is based on historic channel conditions and will recreate a slough system in the lower Salt River. Excavation will occur along X miles of the lower Salt River and approximately X yd³ of accreted sediment would be removed using heavy equipment. Riparian habitat and pastures adjacent to the existing channel would be converted to approximate historic vegetation conditions: X acres of riverine wetland and X acres of willow scrub habitat would be converted to open water; X acres of seasonal wetland and pasture lands would be converted to riverine wetlands, and; X acres of pasture lands would be converted to forested riparian habitat along the outer zone of the riverine wetland habitat.

Alternative 2 will require the least amount of disturbance to the existing stream and riparian corridor and will entail excavation of a narrow low flow channel that is X foot wide channel by X feet deep. Vegetation removal will be limited to approximately 12'-15' on one side of the channel to allow small mechanized equipment (such as a Bobcat) to access the channel. Excavation will occur along X miles of the lower Salt River and approximately X yd³ of sediment will be removed. X acres of willow scrub habitat will be converted to riverine wetland/floodplain habitat.

Alternative 3 represents maximum excavation of an inset floodplain, and includes a fish passage/low flow channel designed to carry a 1.3 to 1.7 year storm event. The proposed channel will have a trapezoidal configuration that measures 10 feet across at the top of the channel, 5 feet across at the bottom and will be 3 to 5 feet deep. The excavated floodplain will range from 100-200 feet wide. Excavation will occur along X miles of the lower Salt River and approximately 282,220 yd³ of accreted sediment will be removed to create a channel and floodplain. X acres of riverine wetland and 25 acres of willow scrub habitat would be converted to open water and riverine wetland/floodplain habitat; X acres of seasonal wetland and pasture lands would be converted to forested riparian habitat along the outer zone of the constructed floodplain. This

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alternative is the original design submitted to NOAA Fisheries in January 2006.

Alternative 4 and 5 are based on NOAA Fisheries HEC-RAS Modeling, and are designed to maximize fish passage at low flows as well as sediment transport. Alternative 4 entails excavation of a fish passage/low flow channel designed to contain a 2-year storm flow event. Alternative 5 entails excavation of a fish passage/low flow channel designed to contain up to a 10 year flood event. Both alternatives include excavation of a sloped floodplain and both alternatives seek to minimize disturbance to adjacent riparian zones. However, Alternative 4 will entail excavation of a X feet wide by X feet deep fish passage/low flow channel along with a X feet wide floodplain. Excavation will occur along X miles of the lower Salt River and approximately X yd³ of sediment will be removed using heavy equipment. X acres of riverine wetland and X acres of willow scrub habitat would be converted to open water and riverine wetland/floodplain habitat; X acres of seasonal wetland and pasture lands would be converted to forested riparian habitat along the outer zone of the floodplain. Alternative 5 will entail excavation of a X feet by X feet deep fish passage/low flow channel along with a X feet wide floodplain. Excavation will also occur along X miles of the lower Salt River and approximately X yd³ of accreted sediment will be removed to create the channel and floodplain. X acres of riverine wetland and X acres of willow scrub habitat would be converted to open water and riverine wetland/floodplain habitat; X acres of seasonal wetland and pasture lands would be converted to forested riparian habitat along the outer zone of the floodplain.

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Table 1. Summary of Salt River Restoration EIR Alternatives.

	Lower Salt River Fish Passage Channel; Miles Restored	Amount of Sediment Removed (cy)	Acres of Floodplain Restored	Acres of willow scrub habitat converted to riverine wetland/floodplain habitat	Acres of seasonal wetland converted to permanent or riverine wetland habitat
Alternative 1 (Proposed Project)	500' X 15'; NEED	NEED	NEED	NEED	NEED
Alternative 2	NEED ; 2.5 miles	NEED	NEED	NEED	NEED
Alternative 3	10' X 5' trapezoidal; 2.5 miles	282,220	Have	NEED	NEED
Alternative 4	NEED ; 4.3 miles	NEED	NEED	NEED	NEED
Alternative 5	NEED ; 4.3 miles	NEED	NEED	NEED	NEED

ACTIONS COMMON TO ALL ALTERNATIVES

Estuary Restoration on Riverside Ranch

All alternatives include restoration on Riverside Ranch, a 444 acre working dairy that is contiguous to the lower reach of the Salt River for over a mile, and extends into the confluence with the Eel River. In 2007, the Riverside Ranch will be purchased using grant funding from the National Coastal Wetlands Conservation Grant Program.

The Salt River estuary is located within the Eel River Delta, considered one of the most significant estuaries along the entire coast of California. The mosaic of tidal flats, sloughs, marshes and seasonal wetlands supports hundreds of thousands of resident and migratory water-associated birds. There has been significant loss of tidal prism in the lower Salt River due to sedimentation, levees and flood gates. Loss of tidal prism has contributed to sediment accumulation in the lower Salt River channel through loss of scour by tidal waters and through establishment of willows in the channel due to loss of saline waters.

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The primary goals of restoration on Riverside Ranch are as follows:

- Restore tidal connectivity to historic wetlands to increase tidal prism, restore fish passage, increase acreage of wetland and shallow water habitat, help create a self sustaining channel in the lower Salt River, improve estuary productivity, increase sediment transport capacity and improve water quality in the lower Salt River;
- Enhance rearing and migration conditions for estuarine dependent species including coho salmon, Chinook salmon, steelhead, coastal cutthroat trout and tidewater goby by increasing the amount and quality of transition (salt/freshwater) habitat;
- Provide wintering habitat for migratory waterfowl and shorebirds;
- Restore riparian habitat to benefit dependent fish and wildlife species;

Restoration goals on Riverside Ranch will be accomplished through removal or modification of flood gates, floodplain and vegetation improvements and levee removals and/or setbacks.

Sediment and Erosion Reduction Actions

All alternatives include sediment reduction actions within the Williams, Francis and Reas Creek watersheds, tributaries of the lower Salt River. Significant and chronic anthropogenic sources of sediment are being identified through assessments (NRCS 1993; Timberland Resource Consultants in progress; Benda et al. in progress). Erosion and chronic sediment sources will be prioritized and action taken to reduce sedimentation including road rocking, road drainage improvements, road crossing upgrades and repairs, streambank erosion reduction including livestock fencing and off-channel watering site development. In addition, community education efforts regarding sediment-related BMPs will be implemented with the goal of increasing the number of landowners who voluntarily implement sediment-related BMPs.

Reconnection of the Eastside Drainage Ditch

All of the EIR alternatives will include re-connecting the Eastside Drainage ditch with Francis Creek near the WWTP. This connection existed historically, but has been lost due to a sediment plug. The Eastside Drainage carries seasonal runoff from the eastside of the City of Ferndale. Currently, the Eastside drainage is plugged with sediment near the WWTP causing winter runoff to flow into adjacent pastures, dairy barns and residential areas and impacting water quality. Equipment will excavate 500' of new channel to reconnect the Eastside Drainage ditch to Francis Creek. This action will also improve dilution at the outfall of the WWTP, which will improve water quality.

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Relocation of Lower Francis Creek

All of the EIR alternatives include relocating the lower 2000' of Francis Creek to a historical confluence with the Salt River. The existing channel was constructed in the past to maximize grazing lands and to put the channel closer to the outfall of the WWTP. This required that the channel have a 90 degree turn at the WWTP. During peak flows, the channel breaks through the berm at the 90 degree turn and floods adjacent pastures. A new channel will be excavated just to the north of the existing channel to eliminate the 90 degree turn, allow room for the creation of an inset depositional floodplain and to create a more stable channel location that more closely approximates historic conditions. During winter flows, water quality is degraded when lower Francis Creek breaks through the berm and floods pastures because flows are reduced or eliminated at the outfall of the WWTP. This action will improve water quality by creating a more stable channel configuration that more approximates the historic channel location.

Ongoing Maintenance of the Lower Salt River Channel

The success of the Project depends, in part, on maintaining an open low flow channel and floodplain. The floodplain in all alternatives will be re-established as riverine, emergent and seasonal wetland habitat populated by sedges, grasses and forbes and devoid of shrubs and trees. Floodplains will be designed so that annual high flows will spill onto the floodplain, velocities will be slower than in the channel, and sediment will deposit on the floodplain instead of in the channel. Conversely, the excavated channel will concentrate flows, have higher water velocities, and will facilitate sediment transport rather than deposition.

An open floodplain adjacent to the excavated channel would help minimize the need for future maintenance of the channel through its function as a sediment deposition zone. All alternatives, because they include restoration on Riverside Ranch, will extend tidal influence upstream possibly to Dillon Road or beyond, which would help maintain the desired plant community and channel configuration. However, vegetative conditions on the floodplain will be monitored annually by the RCD and maintained if needed through intermittent cattle grazing or periodic mowing. If cattle grazing is used, temporary fencing would be installed to protect the low flow channel.

Due to high sediment loads coming from the Wildcat tributaries, it is expected that the low flow channel and/or floodplain excavated under all alternatives will need periodic excavation. The potential need for maintenance varies by alternative and will be described in detail in the EIR. Alternatives 3, 4 and 5 are designed to minimize the need for excavation through incorporation of a depositional floodplain and restoration of tidal flushing. However, due to the large amount of sediment coming down from the Wildcat tributaries, it is expected that equipment will have to re-excavate the channel periodically using the same methodologies and equipment described in the EIR. In the future, equipment will be able to access the channel through the open floodplain and will

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be able to move along the length of the channel on the floodplain, without having to remove shrubs or trees and without disturbing the low flow channel. Channel maintenance would occur during summer or early fall months when the inset floodplain is dry to minimize disturbance.

Program Level Analysis for Restoration of Williams Creek Flows

Awaiting Description

POTENTIAL DISCRETIONARY ACTIONS AND APPROVALS:

The following actions and approvals are anticipated to be required:

Potentially Required Agency Approvals and Actions:

- U. S. Army Corps of Engineers Section 10 permit of the Rivers and Harbor Act and Section 404 permit of the Federal Clean Water Act;
- Federal and State Endangered Species Act Consultations;
- California Department of Fish and Game Streambed Alteration Agreements(s), Section 1601 of the CDFG code;
- California State Regional Water Quality Control Board 401 Certification and/or Discharge Permit (s);
- County of Humboldt grading permit;
- State Coastal Development Permit.

Responsible, cooperating, and trustee agencies are requested to review and refine this list of required actions and approvals.

ISSUE ANALYSIS (ENVIRONMENTAL CONSEQUENCES)

For each issue listed below, the EIR will include a discussion of the parameters used in evaluating impacts; potential impacts from the various alternatives; recommended mitigation, indicating the effectiveness of mitigation measures proposed to be implemented and what, if any, additional measures would be required to reduce the impacts to below a level of significance. Impact analysis will include a discussion of direct and indirect impacts, short and long-term impacts, cumulative impacts, and unavoidable impacts. In addition, the impact discussion will also identify any areas of known controversy. Finally, the EIR will identify any unavoidable adverse impacts that would result from project implementation.

The list of issues presented below are preliminary both in scope and number. Additional issues may be identified during the scoping process.

Aesthetics Issues: *The various project components will change the aesthetic character of the project sites. This change could be viewed either positively or negatively.*

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The EIR will:

- Describe and present photographs of the existing project's aesthetic conditions.
- Compare the scenic and visual resources of the project sites in their existing condition with short-term conditions during implementation, and long-term conditions for predicted stages of restoration.

Air Quality Issues. *The proposed project components could have short-term air quality impacts due to fugitive dust, which could contain hazardous contaminants, from earthmoving, dredging, and other operations during implementation.*

The EIR will:

- Identify and discuss short-term construction dust impacts, as well as necessary mitigation measures to reduce these impacts to a less than significant level.
- Assess the project's operational (traffic) air quality impacts, including contribution to cumulative air quality impacts, based on the anticipated levels of activity.
- Address the project's conformity with applicable air quality plans, exposure of sensitive receptors to criteria air pollutants, and odors, as well as Federal Clean Air Act conformity.

Agricultural Resources. *Channel restoration in lower Salt River will occur on lands not currently usable for agricultural operations, and minimally on lands that are seasonally used. Estuary restoration on Riverside Ranch will reduce existing agricultural operations due to removal of tide gates and increase in salt marsh and wetland habitat. A portion of the Riverside Ranch will be maintained for livestock grazing. Loss of prime agricultural soils, if any, could be a significant impact.*

The EIR will:

- Assess project effects on loss of agricultural resources including any prime agricultural soils and Williamson Act issues.

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BIOLOGICAL RESOURCES

Wetland Biological Resources. *The project will convert existing riverine, willow scrub, and seasonal wetlands/pastures to open water, tidal slough and salt marsh as well as riverine wetlands, permanent wetlands and forested riparian. This change in habitat could be significant.*

The EIR will:

- Identify and describe existing wetland and upland habitats on the site.
- Evaluate how project alternatives are likely to differ in producing different amounts and configurations of wetland and aquatic habitats over time, and how they vary in the way they relate to adjacent habitats.
- Consider potential differences in restored marsh form, function, and biological diversity among alternatives over time. The discussion will emphasize key biological resources with special public and agency interest, such as rare or endangered species, dominant species and communities, pest species (invasive nonnative wetland plants, nonnative predators, etc.).
- Address potential project effects on existing non-tidal wetlands on site, and tidal wetland and other aquatic habitats in the site vicinity.

Aquatic Biological Resources. *Native fish benefits are a major objective of the Salt River Restoration Project. Historically, the Salt River provided migration and rearing habitat for Chinook salmon, coho salmon, steelhead and cutthroat trout. Currently, adults and juveniles may only migrate during peak flood flows due to sedimentation in the channel that forms a complete barrier under moderate and low flows. All of the proposed alternatives improve or restore fish passage and rearing habitat.*

The EIR will:

- Describe existing fish habitat in the project area.
- Review available information to evaluate beneficial and detrimental ecological conditions for salmonids and other native species.
- Analyze the most important issues related to the potential effects of tidal marsh restoration on native and nonnative fish populations
- Address many of the main uncertainties of the project and underlying assumptions about the benefits of restoration for native fish, so that non-technical public will be able to evaluate and contrast alternatives in terms of potential effects on fish resources.

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- Consider effects on recreational and commercial fisheries as well as non-game fish resources.
- Consider short-term impacts on fish from construction activities.

Terrestrial Biological Resources. *Existing upland biological resources will be adversely affected by development of the project. The restoration alternatives will restore terrestrial habitats historically present on the site, including terrestrial habitats that will persist after riverine and riparian wetlands are restored, and artificially reclaimed “uplands” (diked, drained historic agricultural lands) that currently support some terrestrial (and wetland) biological resources.*

The EIR will:

- Describe existing upland terrestrial biological habitats and sensitive species.
- Evaluate the loss of terrestrial habitats from project development.
- Evaluate potential future interactions between restored wetlands and persistent, managed terrestrial habitats, and the effects of restoration alternatives on reclaimed terrestrial habitat.

Cultural Resources. *The project site includes potentially historic structures, sites and landscapes, some of which will be substantially altered or removed by the project. The site also may contain prehistoric cultural resources that may be affected by project development.*

The EIR will:

- Review available information, including the existing archaeological site resources report on the existence of cultural resources on the site and available studies on file at the **Northwest Information Center, Sonoma State University** to determine if any previous cultural resources have been identified in the project area.
- Prepare an architectural history analysis of potential historic structures.
- Evaluate the project area as a potential historic landscape as per the evaluation criteria in National Register Bulletin 30 Guidelines for Evaluating and Documenting Rural Historic Landscapes.
- Document potential historic structures and landscape features (on California Department of Park and Recreation 523 forms).
- Identify appropriate mitigation measures to address the possibility of encountering previously unknown cultural resources during construction, public access, or adaptive management activities, as well as effects of moving, altering, or demolishing any historic

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structures on the site or altering potentially significant landscape features.

Geology and Soils. *Geologic issues include potential erosion during and after construction due to proposed grading, dredging, channel reconfiguration, levee reconfiguration, and armoring. Geologic review of the project area will determine whether the Project would expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving the rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure including liquefaction and landslides. Geotechnical considerations will arise relative to existing levee stability and to any newly constructed levees on Riverside Ranch.*

The EIR will:

- describe the site's geologic conditions/hazards based on existing information and geologic/geotechnical/hydrologic reports for the site and nearby past projects.
- Summarize the implications of these conditions with respect to project outcomes, and identify appropriate mitigation measures.

Hazards and Hazardous Materials. *This section of the EIR will address site contamination issues. Portions of the project area may be contaminated from being in proximity to a wastewater treatment plant. Currently, the project area holds surface runoff well into the spring due to lack of drainage. The proposed restoration would improve these conditions. However, the change in health risks associated with standing water and mosquitoes will be analyzed.*

The EIR will:

- Discuss and summarize the existing Environmental Site Assessments' findings on soil contamination and other potential hazards at the site, and contact the Regional Water Quality Control Board and the Humboldt County Health Services Department Hazardous Materials Programs, if appropriate.
- Appropriate spill prevention measures will be identified as well as emergency contacts including the National Pollution Response Team, the Office of Spill Prevention and Response, the State Water Resources Control Board North Coast Region and Humboldt Office of Emergency Response.
- Review and summarize the City of Ferndale data on potential soil contamination of areas near the wastewater treatment plant.
- Identify potential impacts to project workers and recreation users due to soil contamination and other potential hazards at the project site, and describe necessary mitigation measures. No additional studies on

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hazardous materials are proposed.

- Contact the Humboldt County Division of Environmental health Vector Control Officer to identify the severity of mosquito health risks associated with existing and proposed wetlands, and potential mitigation measures.

Hydrology and Water Quality. *The project could affect water quality through release of contaminants and sediment from construction activities. The project could also alter hydrodynamic processes, which control local salinity levels. The project also could increase turbidity during and after construction, adversely affecting water quality. In addition, flows in the lower Salt River and into Riverside Ranch are likely to change with the increased tidal prism following restoration; these increased flows could affect water quality, erosion along these waterways, and fisheries use of these waterways.*

The project also could result in a groundwater seepage problem on off-site properties after levees are breached on Riverside Ranch. Potential flood hazards issues also exist.

The EIR will:

- Describe existing water quality conditions including those associated with spills from the Ferndale WWTP.
- Review available project data to evaluate potential effects on salinity levels and identify mitigation measures as appropriate.
- Review the Kamman Hydrology & Engineering, Inc. hydrodynamic studies and, based on those studies, evaluate the ability of the restored tidal wetlands to achieve the degree of tidal circulation and exchange along with the appropriate geomorphology necessary to provide the habitats of interest on the project site.
- Evaluate the potential water quality effects of excavating a new channel versus retaining the lower Salt River in its current configuration, based upon available studies, modeling results, design documents, and related information from other wetland restoration projects, and develop conceptual mitigations as necessary.
- Review and summarize existing water quality and hydrology studies and identify any potential impacts based on that information.
- Describe levee seepage and groundwater elevation issues (based on existing studies) and summarize potential flood hazards associated with the project.

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Land Use/Planning. *The project may conflict with the County of Humboldt land use plans and policies, and with adjacent land uses.*

The EIR will:

- Describe nearby land uses in the project area, assess project impacts on nearby existing and planned land uses, and identify any potential land use conflicts.
- Review and summarize applicable goals and policies in the County's General Plan, and assess the project's consistency with General Plan goals and policies, land use designations, and Zoning Ordinances including conformity with height and density limits and parking requirements.

Noise. *The project will result in temporary noise impacts from construction.*

The EIR will:

- Review the existing applicable noise standards to determine the appropriate noise descriptors.
- Describe existing onsite noise levels.
- Compare the future noise levels with existing noise levels to determine if the project would cause a significant increase.
- Evaluate the potential for temporary noise impacts from construction, including any construction noise impacts to noise-sensitive biotic species.

Public Services. *The proposed project would not increase demand on local police and fire protection services. It is not anticipated to generate significant impacts on other public facilities.*

The EIR will:

- Contact the City of Ferndale Fire Department and Police Department to identify any concerns or constraints associated with provision of fire and police protection.

Recreation. *The project will result in benefits to local tourism and recreation due to increased aquatic and riparian habitat function, which is expected to increase fish and wildlife species, which in turn may increase tourism to the area. Public access for wildlife viewing is available on nearby County roads. The Project is not expected to increase public access.*

The EIR will:

- Analyze potential recreation benefits to the public as a result of the project and identify mitigation measures if significant impacts are identified.

Transportation/Traffic. *The proposed restoration will increase traffic to the area, potentially affecting levels of service on local streets.*

The EIR will:

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- Review and organize the existing documentation available regarding the existing and future transportation conditions and summarize existing transportation conditions and trends.
- Describe existing roadway facilities, bicycle/pedestrian facilities, and transit services, and discuss the existing traffic volumes and level of service in the project study area. In addition, any current plans to improve transportation facilities and services will be summarized, and potential traffic impacts associated with any currently planned developments will be described.
- Address potential traffic and parking impacts from the restoration project, including construction traffic impacts.
- Qualitatively assess project impacts on transit services, pedestrian activity, and bicycle activity in the study area.
- If appropriate, develop a series of potential mitigation measures for analysis. These mitigations may range from roadway improvements to bicycle/pedestrian facilities.

Utilities/Service Systems. *Construction and operation of the project may affect water, wastewater, and other utility services.*

The EIR will:

- Contact the City of Ferndale and applicable utility districts to identify possible constraints and to identify any significant impacts and required mitigation measures. Impacts on storm drainage will be summarized.
- Discuss maintaining sufficient access to PG&E's overhead transmission lines.
- Identify the project and alternatives' effects on operations of the Ferndale WWTP.