



STAFF REPORT OF THE
CENTRAL VALLEY REGIONAL
WATER QUALITY CONTROL BOARD

Amendments to
The Water Quality Control Plan for the Sacramento
River and San Joaquin River Basins
To
Address Selenium Control
In the
San Joaquin River Basin

Final Staff Report

May 2010



CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY



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Amendments to
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Executive Summary

This report provides the foundation for proposed amendments to the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition* (Basin Plan), to modify a compliance time schedule for meeting the selenium objective in Mud Slough (north) and the San Joaquin River between Mud Slough (north) and the Merced River.

Project Description and Need for the Proposed Amendments

The selenium control program described in the Basin Plan includes a prohibition of discharge of agricultural subsurface agricultural drainage unless the discharge is regulated by Waste Discharge Requirements (WDRs) or water quality objectives for selenium are met. The Basin Plan also includes a compliance time schedule establishing 1 October 2010 as the effective date of the prohibition for Mud Slough (north) and the San Joaquin River above the mouth of the Merced River, or effectively the reach of the San Joaquin River between Mud Slough (north) and the confluence with the Merced River.

The Grassland Bypass Project (GBP) is the drainage control project that implements the selenium control program for these water bodies. When the Board adopted a Basin Plan amendment in 1996 addressing agricultural subsurface drainage (the selenium control program) the Board included a compliance time schedule. At the time, there was some uncertainty over the length of time that would be needed to develop a project capable of managing all subsurface agricultural drainage produced in the area. The GBP currently manages drainage through source control efforts such as selective land retirement, irrigation efficiency and channel lining to control seepage; management strategies including drainage blending and re-use; and limited, temporary discharge. These efforts have reduced the amount of discharge substantially since 1996, however some aspects of the GBP remain incomplete or in various stages of planning and implementation. Current projections indicate that agricultural subsurface drainage discharges will persist beyond 1 October 2010, triggering an exceedance of the selenium objective. Therefore, the organizations that implement the GBP, the San Luis and Delta-Mendota Water Authority (Authority) and US Bureau of Reclamation (Bureau) have requested additional time to comply with the prohibition/objective. The proposed Basin Plan amendments serve an administrative need, granting more time to complete the drainage control project without changing selenium control program goals, priorities or water quality objectives.

While the Basin Plan serves as the foundation for the selenium control program in the San Joaquin River Basin, there are other elements to the Board's regulatory efforts. Pursuant to the Basin Plan, waste discharge requirements (WDRs) have been issued to the Grassland Bypass Project to regulate discharges of agricultural subsurface drainage. If the Board amends the control program in the Basin Plan, the WDRs will be updated to reflect the changes. The WDRs will also require compliance with water quality-related mitigation measures identified in the EIR/EIS prepared for the project. Over time, the Board may determine that WDRs must be issued to other dischargers. All WDRs contain a Monitoring and Reporting Program to ensure that time schedules are met and discharges are in compliance with the limits set in the Board order. As part

of the WDRs or pursuant to a separate request, the Board may require dischargers to prepare and submit technical reports related to the discharge. As part of the Basin Plan amendment process, the Board adopts a resolution that may include directions to staff on how to proceed with aspects of this program. Some of the control program elements are discussed in this staff report, but the need for additional revisions may emerge when the WDRs and MRP go through the public review process. If the amendments are approved, work on revising the WDRs and MRP will begin immediately.

The compliance time schedule currently in the Basin Plan includes compliance dates prior to 2010 for other channels and other reaches of the River. The Grassland Area Farmers (GAF), the subset of local agencies within the Authority participating in the GBP, have met the interim milestones of the selenium control program, complying with the prohibition of discharge or meeting the selenium objective in the channels where these requirements are now in effect (see Figures 3, 4 and 6 in Section 1 of this report). Given this history, it is reasonable to expect that if the Board approves the requested time extension by adopting the proposed amendment, the GAF will develop full drainage management capacity in the project area. In this context, “full drainage management capacity” means that, consistent with the Grassland Bypass Project’s dual goals of water quality and environmental protection and maintaining the viability of farming in the area, the dischargers are able to control all agricultural subsurface drainage generated in the drainage area without discharge. The Grassland Area Farmers expect to achieve this by further development of the source control measures and drainage reuse strategies in current use and by treating drainage to remove selenium and/or salt. Expanded source control and reuse alone could potentially increase the Project’s drainage management capacity sufficiently to achieve water quality and environmental goals, but at a cost. If the Board adopts the proposed amendments, dischargers will need to weigh those costs and determine whether drainage treatment is truly feasible for this area; and report their decision to the Board in 2013.

Proposed Basin Plan Amendments

The following excerpts from Basin Plan Chapter IV show how the Basin Plan will appear after the proposed amendments are adopted. Deletions are indicated as strikethrough text (~~deleted text~~) and shaded fields (~~deleted field~~). Additions are shown as underlined text (added text). Italicized text (*notation text*) is included to locate where the modifications will be made in the Basin Plan. All other text changes are shown accurately, however, formatting on the page may change.

Under the Chapter IV heading: “Regional Water Board Prohibitions, Item 6 on page IV-26.00, make the following changes:

- b. The discharge of agricultural subsurface drainage water to Salt Slough and wetland water supply channels identified in Appendix 40 is prohibited after 10 January 1997, unless water quality objectives for selenium are being met. ~~This prohibition may be reconsidered if public or private interests prevent the implementation of a separate conveyance facility for agricultural subsurface drainage.~~

c. The discharge of agricultural subsurface drainage water to the San Joaquin River from Sack Dam to Mud Slough (north) is prohibited after 1 October 2010, unless water quality objectives for selenium are being met. The discharge of agricultural subsurface drainage water to Mud Slough (north) and the San Joaquin River from the Mud Slough confluence to the Merced River is prohibited after 31 December 2019 unless water quality objectives for selenium are being met. This prohibition may be reconsidered if public or private interests prevent the implementation of a separate conveyance facility for agricultural subsurface drainage to the San Joaquin River. The prohibition becomes effective immediately upon Board determination that timely and adequate mitigation, as outlined in the 2010-2019 Agreement for Continued Use of the San Luis Drain¹ has not been provided.

Under the Chapter IV heading: "Agricultural Drainage Discharges in the San Joaquin River Basin" page IV-31.00, make the following changes:

Per the amendment to the Basin Plan for San Joaquin River subsurface agricultural drainage, approved by the State Water Board in Resolution No. 96-078, as amended by Resolution No. R5-2010-0046 and incorporated herein, the following actions will be implemented.

1. In developing control actions for selenium, the Regional Board will utilize a priority system which focuses on a combination of sensitivity of the beneficial use to selenium and the environmental benefit expected from the action.
2. Control actions which result in selenium load reduction are most effective in meeting water quality objectives.
3. With the uncertainty in the effectiveness of each control action, the regulatory program will be conducted as a series of short-term actions that are designed to meet long-term water quality objectives.
4. Best management practices, such as water conservation measures, are applicable to the control of agricultural subsurface drainage.
5. Performance goals will be used to measure progress toward achievement of water quality objectives for selenium. Prohibitions of discharge and waste discharge requirements will be used to control agricultural subsurface drainage discharges containing selenium. Compliance with performance goals and water quality objectives for nonpoint sources will occur no later than the dates specified in Table IV-4 for Mud Slough (north) and the San Joaquin River from Sack Dam the Mud Slough confluence to the Merced River.

¹ United States Department of the Interior, Bureau of Reclamation, Central Valley Project, California and San Luis & Delta-Mendota Water Authority, Los Banos, CA, Agreement for Continued Use of the San Luis Drain for the period January 1, through December 31, 2019.

6. Waste discharge requirements will be used to control agricultural subsurface drainage discharges containing selenium and may be used to control discharges containing other toxic trace elements.

7. Selenium load reduction requirements will be incorporated into waste discharge requirements as effluent limits as necessary to ensure that the selenium water quality objectives in the San Joaquin River downstream of the Merced River inflow is achieved. The Board ~~intends to implement~~ adopted a TMDL for selenium in the San Joaquin River in 2001 after public review.

Table IV-4. Compliance Time Schedule for Meeting the 4-day Average and Monthly Mean Water Quality Objective for Selenium

Selenium Water Quality Objectives (in bold) and Performance Goals (in italics)

Water Body/Water Year Type ¹	1 October 1996	1 October 2002	1 October 2005	1 October 2010	<u>31</u> December 2015	<u>31</u> December 2019
Salt Slough and Wetland Water Supply Channels listed in Appendix 40	2 ug/L monthly mean					
San Joaquin River below the Merced River; Above Normal and Wet Water Year types ¹		<i>5 ug/L monthly mean</i>	5 ug/L 4-day avg.			
San Joaquin River below the Merced River; Critical, Dry, and Below Normal Water Year types		<i>8 ug/L monthly mean</i>	<i>5 ug/L monthly mean</i>	5 ug/L 4-day avg.		
Mud Slough (north) and the San Joaquin River from Saek Dam the Mud Slough confluence to the Merced River				5 ug/L 4-day avg.	<i>15 ug/L monthly mean</i>	5 ug/L 4-day avg.

¹ The water year classification will be established using the best available estimate of the 60-20-20 San Joaquin Valley water year hydrologic classification (as defined in Footnote 17 for Table 3 in the State Water Resources Control Board's *Water Quality Control Plan for the San Francisco Bay/Sacramento San Joaquin Delta Estuary*, May 1995) at the 75% exceedance level using data from the Department of Water Resources Bulletin 120 series. The previous water year's classification will apply until an estimate is made of the current water year.

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Acronyms

AF/Y	Acre feet per year
ARB	Air Resources Board
CDFG	California Department of Fish and Game
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CVP	Central Valley Project
CV-SALTS	Central Valley Salinity Alternatives for Long-Term Sustainability
CWA	Clean Water Act
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ESA	Endangered Species Act
GAF	Grassland Area Farmers
GBP	Grassland Bypass Project
GDA	Grasslands Drainage Area
MES	Mass Emissions Strategy
MRP	Monitoring and Reporting Program
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NPS	Nonpoint Source
PPD	Pollutant Policy Document
SJRIP	San Joaquin River Improvement Project
TMDL	Total Maximum Daily Load
USC	United States Code
USEPA	United States Environmental Protection Agency
WDRs	Waste discharge requirements
WQO	Water Quality Objective

1 INTRODUCTION AND EXISTING CONDITIONS

The purpose of this Staff Report is to provide the rationale and supporting documentation for proposed amendments to the *Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin, 4th ed.* (Basin Plan) to modify a compliance time schedule for meeting the selenium objective in Mud Slough (north) and the San Joaquin River Mud Slough (north) and the Merced River. An environmental analysis was prepared by the Bureau of Reclamation and San Luis and Delta Mendota Water Authority for continued, temporary, controlled use of the San Luis Drain to remove seleniferous agricultural subsurface drain water from the Grassland Drainage Area: the *Grassland Bypass Project 2010-2019 Environmental Impact Statement and Environmental Impact Report* (EIS/EIR). That analysis is relied upon for these proposed amendments. The following sections describe the regulatory context for basin planning, a description of the affected watershed, a brief history of the selenium control program, the need for the proposed amendments to the Basin Plan, the alternatives before the Board, and mitigation for project impacts.

1.1 Regulatory Authority and Mandates for Basin Plan Amendments

California Water Code Section 13240 authorizes the Regional Water Boards to formulate and adopt water quality control plans for all areas within their region. A Basin Plan is the basis for regulatory actions taken for water quality control. The Basin Plan is also used to satisfy parts of Section 303 of the Federal Clean Water Act (CWA) (USEPA, 2002), which requires states to adopt water quality standards. Basin plans are adopted and amended by the Regional Board through a structured process involving full public participation and state environmental review. Basin plan amendments do not become effective until approved by the State Water Resources Control Board (State Water Board) and the Office of Administrative Law (OAL). The proposed Basin Plan Amendments modify a compliance time schedule, which would continue the suspension of the prohibition of agricultural subsurface drainage discharges to Mud Slough (north) and the San Joaquin River between Mud Slough (north) and the mouth of the Merced River through 31 December 2019 unless the discharges are regulated by waste discharge requirements. If the amendments are not adopted, the prohibition becomes effective in these reaches 1 October 2010.

A Basin Plan must consist of the following (Water Code Section 13050):

- beneficial uses to be protected
- water quality objectives (WQOs)
- a program of implementation needed for achieving water quality objectives

This amendment will not alter beneficial use designations or water quality objectives in the affected area, but will extend the implementation period needed for achieving water quality objectives.

1.2 The Grasslands

The Grasslands area has several components. The *Grassland Bypass Project 2010-2019 Environmental Impact Statement and Environmental Impact Report (EIS/EIR)* describes the Grasslands Drainage Area (GDA) in terms of the service areas of the local water providers:

The GDA is located on the western side of the San Joaquin River roughly between Los Banos to the north and Mendota to the south. The GDA consists of Charleston Drainage District, Pacheco Water District, Panoche Drainage District, a portion of the Central California Irrigation District (CCID) known as Camp 13 drainage area, Firebaugh Canal Water District, Broadview Water District (acquired by Westlands Water District following retirement from irrigation), and Widren Water District. The In-Valley drainage reuse area, called the San Joaquin River Water Quality Improvement Project (SJ RIP), is owned and operated by Panoche Drainage District[in cooperation with Firebaugh Canal Water District]¹.

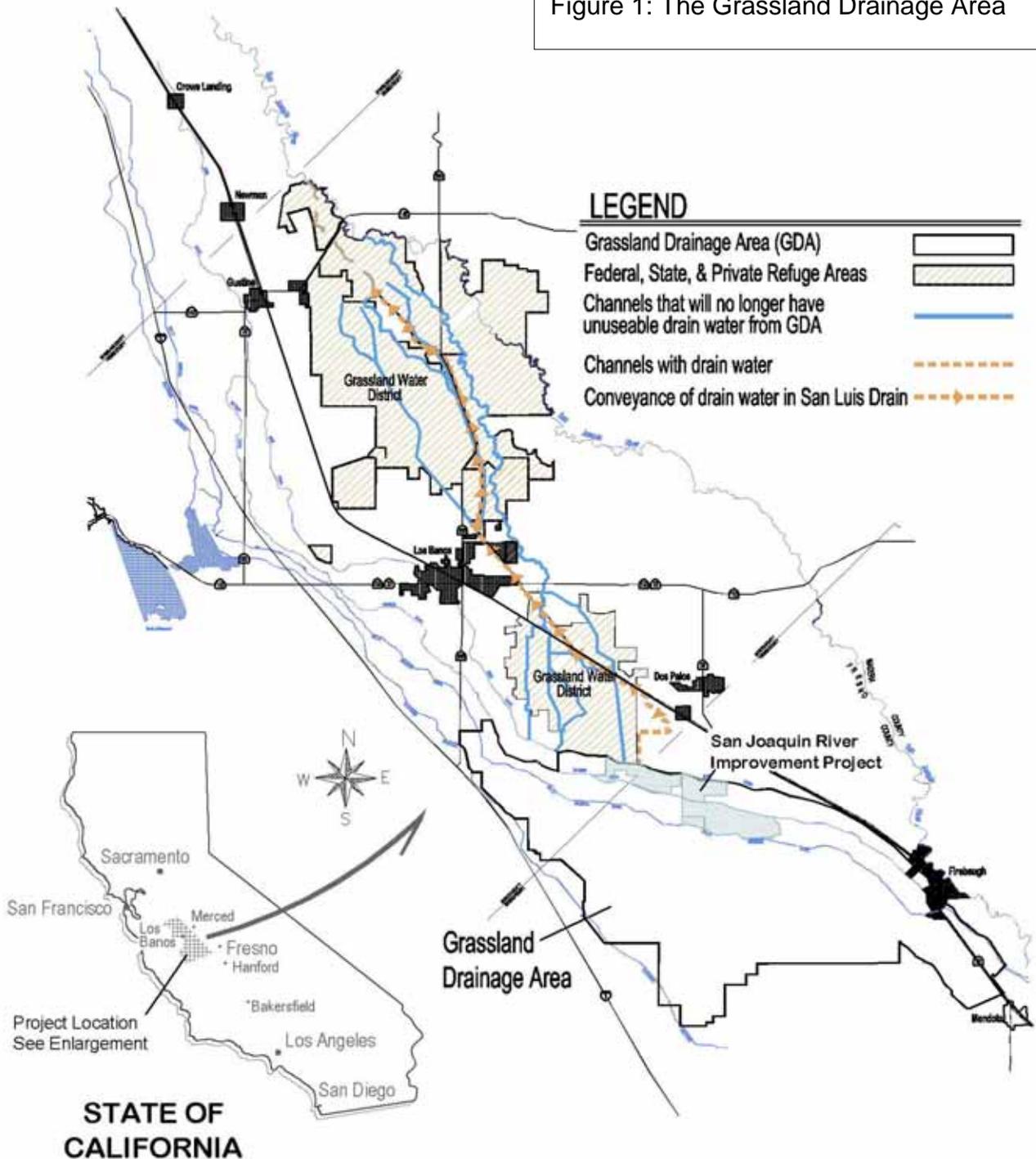
The Basin Plan describes the Grassland Watershed, which encompasses the GDA, in terms of its relevance to agricultural subsurface drainage policies:

The Grassland watershed is a valley floor sub-basin of the San Joaquin River Basin. The portion of the watershed for which agricultural subsurface drainage policies and regulations apply covers an area of approximately 370,000 acres and is bounded on the north by the alluvial fan of Orestimba Creek and by the Tulare Lake Basin to the south. The San Joaquin River forms the eastern boundary and Interstate Highway 5 forms the approximate western boundary. The San Joaquin River forms a wide flood plain in the region of the Grassland watershed. The hydrology of the watershed has been irreversibly altered due to water projects and is presently governed by land uses. These uses are primarily, managed wetlands and agriculture. The wetlands form important waterfowl habitat for migratory waterfowl using the Pacific Flyway. The alluvial fans of the western and southern portions of the watershed contain salts and selenium which can be mobilized through irrigation practices and can impact beneficial uses of surface waters and wetlands if not properly regulated.

Figure 1, taken from the EIR/EIS, displays the Project area.

¹ Clarification received from Joe McGahan, GDA Drainage Coordinator, on 27 April 2010.

Figure 1: The Grassland Drainage Area



1.3 History of the selenium control program

The Central Valley Project (CVP) conveys water to parts of the Central Valley Region including the San Joaquin Valley. From the outset, it was known that to maintain crop production, CVP-irrigated agricultural land on the west side of the San Joaquin Valley (Westside) would require drainage service at some point.

Construction began on the San Luis Drain to carry agricultural drainage to the Delta near Chipps Island. The federal government ceased construction in 1985 at a point near Highways 140 and 165 in Merced County and agricultural subsurface drainage from Westlands Water District, the largest CVP contractor within the San Luis Unit, was intentionally allowed to accumulate in Kesterson Reservoir to provide wetland habitat. This area is near the Grasslands Ecological Area, a wetland complex that is home to state and federal wildlife refuges and several privately operated wetlands. During the 1980's, before construction on the San Luis Drain was resumed, wildlife impacts were observed at Kesterson Reservoir and agricultural drainage discharges were halted. The cause of the impacts was determined to be elevated levels of selenium in the agricultural subsurface drainage.

The Central Valley Water Board (Board) conducted a study of the Region, finding that agricultural subsurface drainage from the Grassland Drainage Area, to the north of Westlands Water District, was also high in selenium. At that time, the Grassland drainage moved through a series of canals and was utilized to augment irrigation and wetland supplies prior to ultimate discharge to the San Joaquin River. The Board adopted an amendment to the Basin Plan in 1988, establishing a selenium control program that focused on improved irrigation efficiency and protecting wetland water supply. In 1992, the USEPA promulgated a 5ug/L selenium water quality criterion on the San Joaquin River and its tributaries.

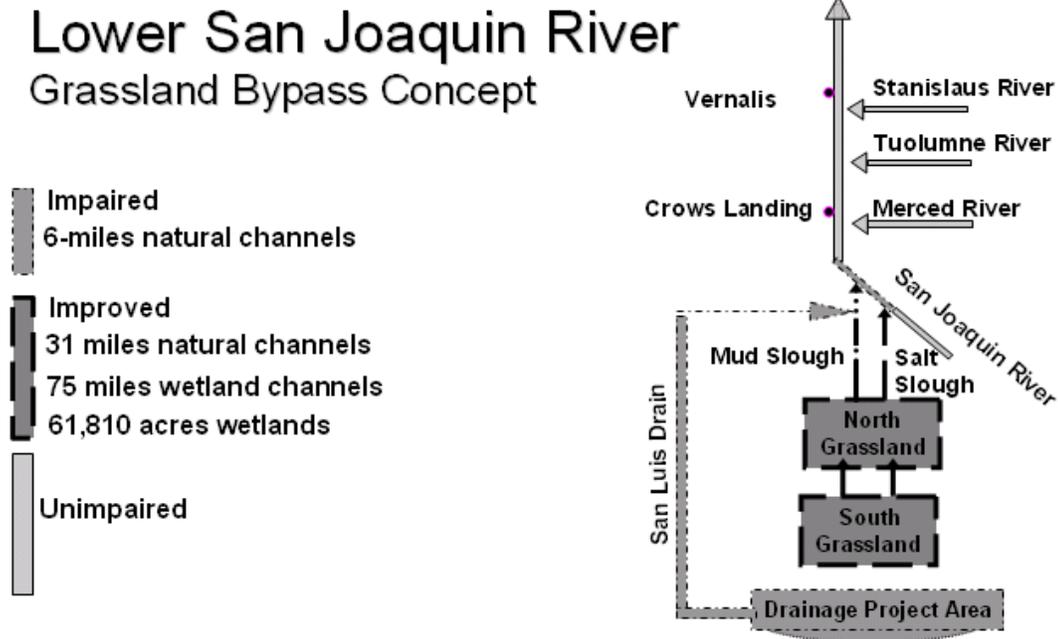
After the 1988 amendment, dischargers in the area reduced the overall selenium loads and attempted to control drainage by using channels to deliver wetland water supplies at some times and convey drainage at others (sometimes referred to as a "flip-flop system") but while water quality in the San Joaquin River improved, the efforts did not result in sufficient reductions in selenium concentrations in the wetland water supply channels. In 1996, the Board adopted a second Basin Plan amendment that provided a framework for the strategy outlined in Figure 2: the Grassland Bypass Project (GBP).

The 1996 amendment included water quality objectives and an implementation plan to regulate agricultural subsurface drainage² in the Grassland Area that included selected prohibitions of discharge. The amendment included a compliance time schedule specifying priorities for meeting objectives: First, wetland supply channels, followed by the San Joaquin River below the Merced River, and finally Mud Slough (north) and the San Joaquin River above the Merced River to Sack Dam. At this writing, only the compliance deadline for Mud Slough (north) and the San Joaquin River upstream of the Merced River remains to be met. Agricultural subsurface drainage is now prohibited in Salt Slough and all wetland water supply channels listed in "Grassland Watershed Wetland Channels for Which Beneficial Uses Have Been Identified" (Appendix 40 of the Basin Plan) unless water quality objectives for selenium are met.

² Agricultural subsurface drainage is sometimes referred to as tile drainage, because drainage is collected in perforated underground pipes or "tile lines".

A Use Agreement between the Bureau of Reclamation and the operators of the GBP, the Grassland Area Farmers or GAF, was put in place to establish conditions under which a portion of the San Luis Drain could be used to discharge selenium from the GBP drainage area. The provisions in the Use Agreement were the result of negotiations between the Bureau, the GAF and other interested parties, including Environmental Defense Fund, wetland operators, and other downstream water users.

Figure 2- GBP Conceptual Model



1.3.1 Implementation of the Selenium Control Program

The GBP, covering an area of approximately 97,000 acres, manages high selenium agricultural subsurface drainage on a regional basis in seven contiguous member districts within the San Luis & Delta-Mendota Water Authority (Authority): Charleston Drainage District, Pacheco Water District, Panoche Drainage District, Broadview Water District, Firebaugh Canal Water District, Widren Water District and Camp 13 Drainage District. This group makes up the Grassland Area Farmers or GAF. Broadview Water District and Widren Water District were purchased by Westlands Water District and are currently not farmed. The major features of the GBP are drainage reduction; drainage collection; drainage blending, drainage reuse,³ and limited, monitored, controlled temporary drainage discharge. A portion of the federally owned San Luis Drain serves as the conveyance structure to move drainage outside of the GBP service area.

From 1996 until the present, the Bureau and Authority have been operating under a Use Agreement that established conditions for utilizing a portion of the San Luis Drain as

³ The drainage reuse area is also known as the San Joaquin River Improvement Project or SJRIP.

part of the GBP. The Bureau and Authority signed an updated Use Agreement in December 2009 (the 2010-2019 Use Agreement) that establishes a detailed set of conditions under which a designated portion of the San Luis Drain will operate. It also serves as the dischargers' plan to comply with water quality objectives, with oversight tasks being shared by multi-agency cooperators serving on the Data Collection and Reporting Team (day-to-day monitoring and reporting issues), the Technical and Policy Review Team (addressing the technical aspects of compliance issues) and the Drainage Oversight Committee (advised by the Technical and Policy Review Team, the Drainage Oversight Committee meets when there is an incident of noncompliance triggering payments into the incentive fee account or when significant Use Agreement issues arise). Participants in the various teams include the Bureau and managers of GAF districts, US Fish and Wildlife Service, California Department of Fish and Game, US Environmental Protection Agency, and the Central Valley Water Board, with US Geological Survey serving in an advisory capacity. The Use Agreement defines the Drainage Oversight Committee as being "composed of agency managers from Reclamation, US Fish and Wildlife Service, US Environmental Protection Agency, California Department of Fish and Game, and the Regional Water Quality Control Board".

The Use Agreement is the product of negotiations between the Bureau and the Authority and negotiations between the dischargers and other stakeholders, and it is subject to environmental review under the National Environmental Policy Act and California Environmental Quality Act (NEPA/CEQA). Features of the Use Agreement such as the negotiated selenium load reductions under the proposed action (which start at the levels required under the current TMDL and ramp down over the term of the extension) will be incorporated into updated waste discharge requirements (WDRs) for the GBP if the amendments are approved.⁴ All Basin Plan amendment action alternatives are contingent on an extension of the Use Agreement because the segment of the San Luis Drain the GAF use today is their only viable option for getting excess drainage out of the basin. The Use Agreement was approved by the Authority and a Notice of Determination was filed with the State Clearinghouse on 12 October 2009. The Bureau signed a Record of Decision for the 2010-2019 Use Agreement on 21 December 2009. Since the Agreement and Basin Plan amendments are closely linked, the same environmental document is being relied upon for both: the *Grassland Bypass Project 2010-2019 Environmental Impact Statement and Environmental Impact Report, August 2009* (EIS/EIR)⁵.

The Use Agreement allows GBP drainage to be collected and routed through a constructed channel to a portion of the San Luis Drain and discharged through a portion of Mud Slough (north) to the San Joaquin River. Some drainage is diverted prior to discharge to a blending facility where it is mixed with supply water delivered to project-area farms, and some is sent to the drainage reuse facility (San Joaquin River

⁴ The existing waste discharge requirements and monitoring and reporting requirements for the Project can be viewed at: www.waterboards.ca.gov/centralvalley/water_issues/grassland_bypass/

⁵ The EIS/EIR and related environmental documents supporting the 2010-2019 Use Agreement can be viewed at: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=3513.

Improvement Project, or SJRIP) where it is used to irrigate salt tolerant crops (primarily Jose Tall Wheatgrass, used for hay) and halophytes prior to discharge. It is likely that the treatment facility would be treating drainage from the reuse facility, although when comments were received on the draft EIS/EIR, the GAF indicated that they were willing to consider treatment at an earlier use stage if that proves to be more economically feasible.⁶

When the GBP began, it was known that a 6-mile stretch of Mud Slough would be impaired for a time in exchange for permanent improvement of the water supply channels serving wetland habitat. The GBP temporarily allows drainage to exit the basin, progressively decreasing loads of selenium while adequate in-basin drainage management facilities are developed.

Before GBP implementation, Salt Slough had carried most of the drainage flows out of the Grassland Drainage Area most of the time, but a number of other wetland water supply channels had also been used intermittently. The prohibition of discharge of agricultural subsurface drainage has been in effect in wetland water supply channels since 10 January 1997.

1.4 Need for the Proposed Amendments

The dischargers have made a great deal of progress improving water quality in wetland supply channels and Salt Slough as well as reducing overall selenium loads (See figures 3, 4, 6 and 7), but have been unable to complete all planned drainage control actions in the GBP within the timeframe established by the 1996 Basin Plan amendment. The drainers are therefore requesting that the Mud Slough (north) and San Joaquin River “above the Merced” compliance schedule be extended to 31 December 2019. The additional time will allow them to seek additional funding, investigate and implement appropriate drainage treatment technologies and continue to implement and expand drainage management improvements while meeting the GBP goals of promoting continuous improvement of San Joaquin River water quality and maintaining the viability of agriculture in the GBP area.

The two main reasons progress has been delayed are the difficulty of finding effective drainage treatment options and the limited availability of funding. The EIS/EIR for the 2001 Use Agreement between the Bureau and Authority anticipated that appropriate drainage treatment technology could be identified within a few years of adoption of the agreement. Several technologies were tested but results have been mixed, with no clear Best Practicable Treatment and Control option emerging. The operators now have more information than they did in 2001, but treatment technology must still be tested and validated as appropriate for the GBP. The GBP operators have spent well over \$40 million in state, federal and private monies to fully develop the Project, and they were midway through spending a \$25 million grant award when the State Department of Finance issued Budget Letter 08-33 halting disbursement of awarded grant funds and forcing the operators to stop work. The work stoppage order came at a point in the

⁶ Joe McGahan, GBP Drainage Coordinator, in response to public comments on the draft EIS/EIR on 10 February 2009.

project when a series of local source control projects had been completed and additional drainage reuse area development had taken place, but before treatment technology could be selected, constructed, tested and employed. The GBP operators are looking for additional funding sources, but they cannot make up for lost time and have a full-scale, fully operational drainage treatment facility in place before 1 October 2010, the compliance deadline currently shown in Table IV-4 of the Basin Plan.

The proposed amendments will allow discharges from the GBP area to continue to impact Mud Slough (north) and the San Joaquin River between the Mud Slough discharge and the confluence with the Merced River for up to an additional nine years, three months, and selenium concentrations will likely remain in the range shown in Figure 5. But the amendments also allow the GAF to continue to provide drainage service to the farmers in the drainage area while the regional drainage management system is brought to full capacity. By 2019 (or earlier), the GAF will be utilizing a more comprehensive suite of drainage service actions including additional source control measures, treating drainage to remove enough selenium to meet water quality objectives and expansion (full implementation) of other projects described in the Westside Regional Drainage Plan. It should be noted that the Use Agreement requires mitigation actions to offset the impacts of ongoing operations during the extension period. The proposed basin plan amendments include a provision that the prohibition of discharge of agricultural subsurface drainage water, as specified in the amendments, becomes effective immediately at any time prior to 31 December 2019 upon Board determination that timely and adequate mitigation as outlined in the Use Agreement is not being implemented.

Figure 3

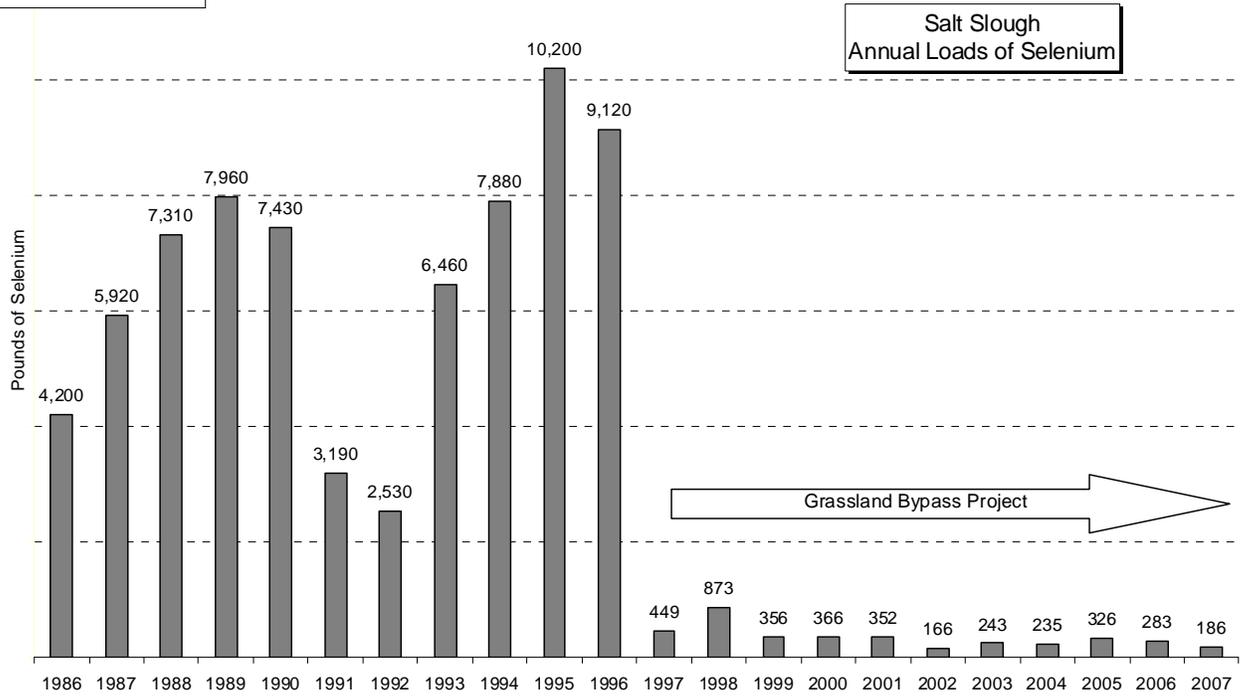


Figure 4

Monthly Averages of Selenium Concentrations in Salt Slough 2000 to 2009

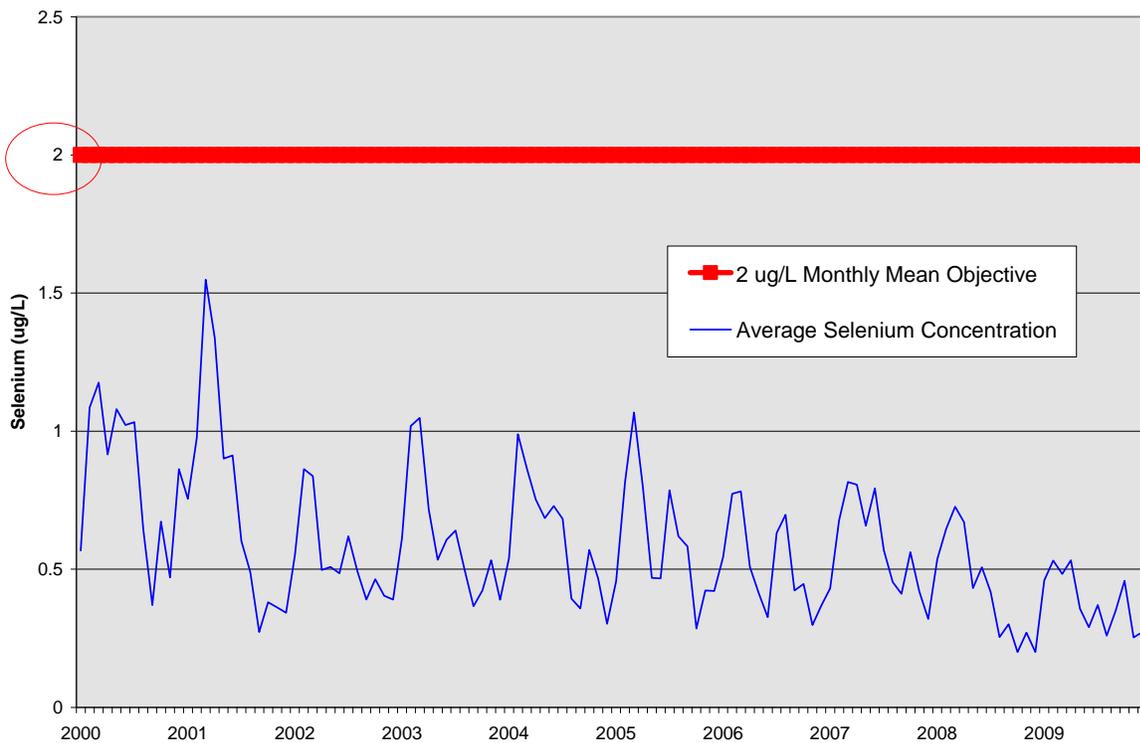


Figure 5

Monthly Averages of Selenium Concentrations in Mud Slough below San Luis Drain 2000 to 2009

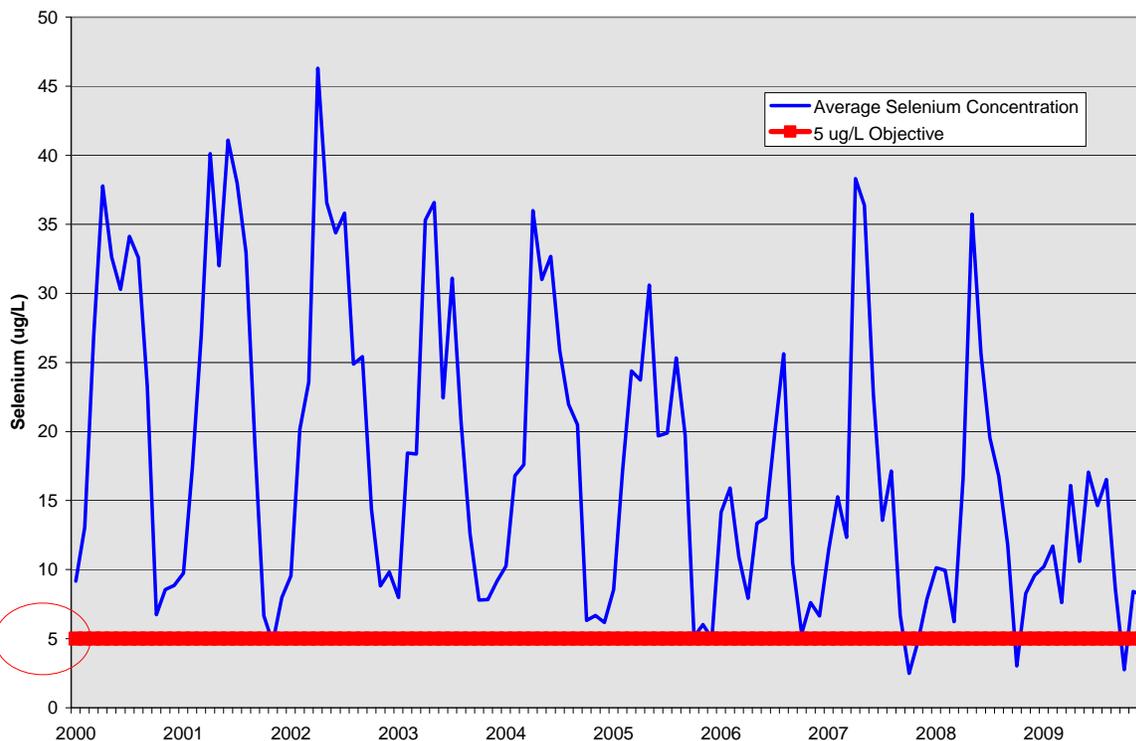
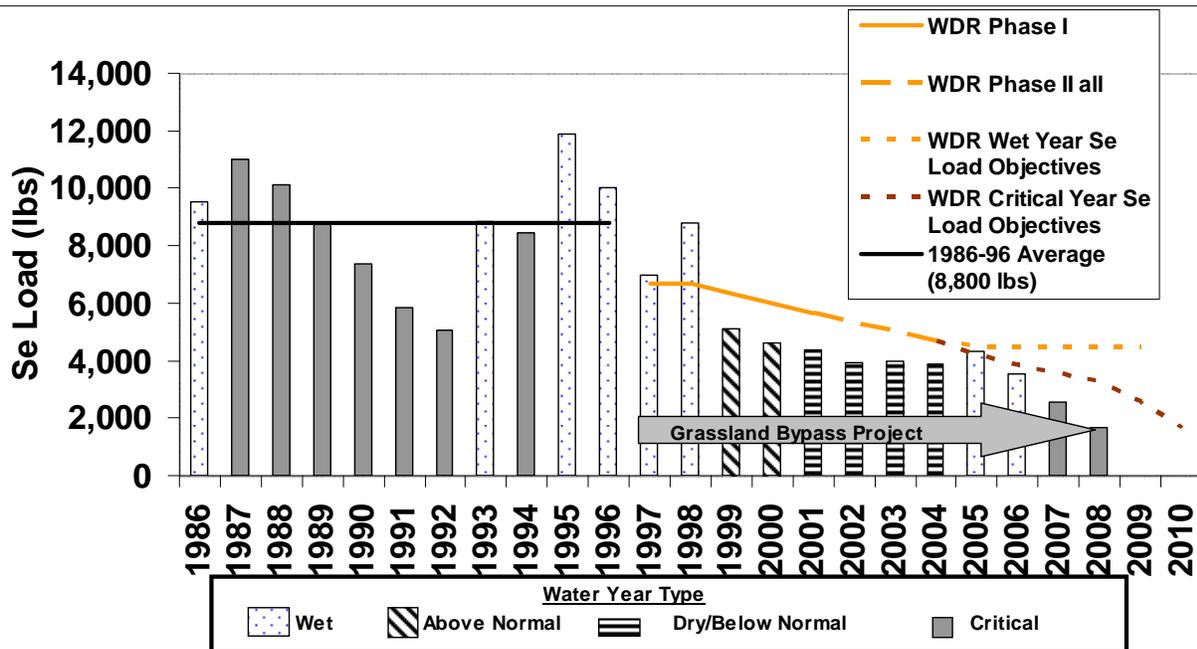


Figure 6: Annual selenium loads discharged from the Grassland Drainage Area since 1986. Plain and dotted lines indicate load limits, varying by water year type starting 2005



2 Alternatives

Regional Water Boards adopt and amend Basin Plans through a structured process involving peer review⁷, public participation, and environmental review. Regional Water Boards must comply with the California Environmental Quality Act (CEQA) (Public Resources Code (PRC) §21000 et seq.) when amending their Basin Plans. The Secretary of Resources has certified the basin planning process as exempt from the CEQA requirement to prepare an environmental impact report or other appropriate environmental document. (PRC 21080.5; California Code of Regulations (CCR), Title 14, §15251(g)). Instead, State Water Board regulations on its exempt regulatory programs require the Regional Water Boards to prepare a written report and an accompanying CEQA Environmental Checklist and Determination with respect to Significant Environmental Impacts (CEQA Checklist). (CCR, Title 23, §3775 et seq.)

The EIS/EIR provides an in-depth characterization of three alternatives: no action (no project), the GAF proposal (Action Alternative 1) and an alternative action, differing from Action Alternative 1 only in terms of load limits utilized in the Use Agreement. Action Alternative 1 requires selenium loads to ramp down at a set rate and the alternative GAF action capped loads at the limits specified in the TMDL for selenium in the San Joaquin River. The Board is required to look at regulatory alternatives and there is no regulatory difference between the action alternatives presented in the EIS/EIR; therefore, this report provides a different action alternative: Action Alternative 2 (Recommended Alternative) for the Board to consider in addition to no action and the action alternative proposed by the GAF.

2.1 No Project Alternative

Under the No Project alternative, the Board would not adopt the Basin Plan amendments and the dischargers would be required to meet the objectives in all channels or comply with the prohibition of discharge by 1 October 2010. The environmental analysis presented in the EIS/EIR assumes that with No Project, development of regional drainage management facilities will cease after currently approved actions have been completed: 6,200 acres rather than 6,900 acres of developed drainage reuse area; no treatment facility or alternate waste concentration and disposal strategy; no long-term regional stormwater plan; and probable de-prioritization or cessation of at least some of the cooperative agreements between districts and agencies now providing regional monitoring, oversight, mitigation and management in the Project area. When drainage no longer enters the San Joaquin River, some parties will lose interest in what happens in the drainage area, as it will no longer affect them. When the federally-owned San Luis Drain is no longer in use, Bureau personnel and resources may be redirected to other priorities. But if discharges are halted before the regional drainage management system has the capacity to handle all drainage without discharging, local districts and/or individual irrigators could also

⁷ Peer review is required for science-based changes. The proposed amendments do not revisit a water quality objective, policy, implementation strategy or other scientific underpinning of the selenium control program. The amendments are administrative, not science-based changes.

choose to stop supporting the regional effort since it will be insufficient to fully serve their drainage needs.

In 2009 the drainage area generated approximately 24,000 acre feet of drainage after source control and recycling, with the reuse area currently capable of managing approximately 11,000 acre feet generated in a system now capable of managing AF/year). In order to comply with the selenium objective or prohibition of discharge, excess drainage would have to be held and managed within the drainage area, which, with an incomplete drainage management system, will likely result in the underlying shallow groundwater rising closer to the soil surface. The first groundwater in this area is very high in salt and selenium, and these constituents will move upward into the root zone, carrying salts that will be evapo-concentrated if farmers continue to irrigate without drainage service. Thousands of acres in Westlands Water District to the south of the GBP have become salinized and can no longer be farmed profitably due to lack of drainage service in areas having similar saline shallow groundwater conditions. In addition to the impacts to cropland in low-lying areas, rising groundwater could potentially seep into open ditches and surface water channels in the drainage service area, creating exposure hazards in areas now protected through the monitoring and management of the regional drainage management system.

On 9 December 2009 California Water Impact Network (CWIN) submitted a letter to the Department of the Interior requesting reconsideration of an earlier request to extend the Use Agreement for two years rather than the proposed nine years, three months. CWIN cited a recent report from US Fish and Wildlife Service indicating that salmonids may be more sensitive to selenium than other fish species.⁸ If use of the San Luis Drain were extended by two years only, the expenditure of State resources needed to amend the Basin Plan would not be justified. The same end result--cessation of discharge by 31 December 2011--could be accomplished by not amending the Basin Plan and issuing a Cease and Desist Order (CDO), which requires dischargers to halt their discharge in accordance with a compliance time schedule. If the Board sought immediate compliance with the prohibition, a CDO would likely take close to two years to fully implement. Therefore, a two year time extension is not considered an action alternative. A related non-action alternative would be to issue a CDO consistent with the time schedule in the current Use Agreement. This non-action alternative would not require Basin Plan amendments but would have the same intent as the action alternatives: the Board would require that the discharge decrease over time. However, if the prohibition is in effect, Section VII-C of the Use Agreement is triggered and the Use Agreement is immediately terminated. The environmental consequences of a CDO without modification of the termination provisions referenced above would ultimately be the same as No Project.

⁸ As noted in section 1.3.1, US Fish and Wildlife Service & the Bureau serve on the Grassland Bypass Project's Data Collection and Reporting Team, Technical and Policy Review Team and Drainage Oversight Committee. The Bureau is the lead agency working on restoring salmon habitat in the San Joaquin River. US EPA has been attempting to develop a selenium criterion based on fish tissue rather than water column concentrations, but little progress has been made. However for this region, the GBP can utilize the DCRT, TPRT and DOC as appropriate forums for discussion of the level of protection afforded by the current selenium objective.

2.2 Action Alternative 1

Under Action Alternative 1 (the GAF's proposal), the Board would amend the Basin Plan to extend the compliance date for meeting the selenium objective in Mud Slough (north) and the San Joaquin River above the Merced River to 31 December 2019. The dischargers (Bureau and Authority) would seek modifications to their WDRs consistent with an extended time schedule and as described in the new Use Agreement, where selenium load limits decrease from 2010 levels to near zero in 2019. The Basin Plan would be amended to prohibit discharge of agricultural subsurface drainage after 2019 unless water quality objectives for selenium are met.

Figure 7 shows the selenium load limits in the 2001 Use Agreement contrasted with actual selenium loads discharged from 1986 (before GBP implementation) through 2008. The loads are calculated to meet selenium water quality objectives in the channels named in the Basin Plan in accordance with the time schedule in the implementation chapter (chapter IV, Table IV-4). Figure 7 shows load limits in the 2001 Use Agreement with the new limits over the term of the proposed Basin Plan amendments.⁹

⁹ Figure 7 was provided by Joe McGahan, Drainage Coordinator for the Grassland Area Farmers.

Figure 7

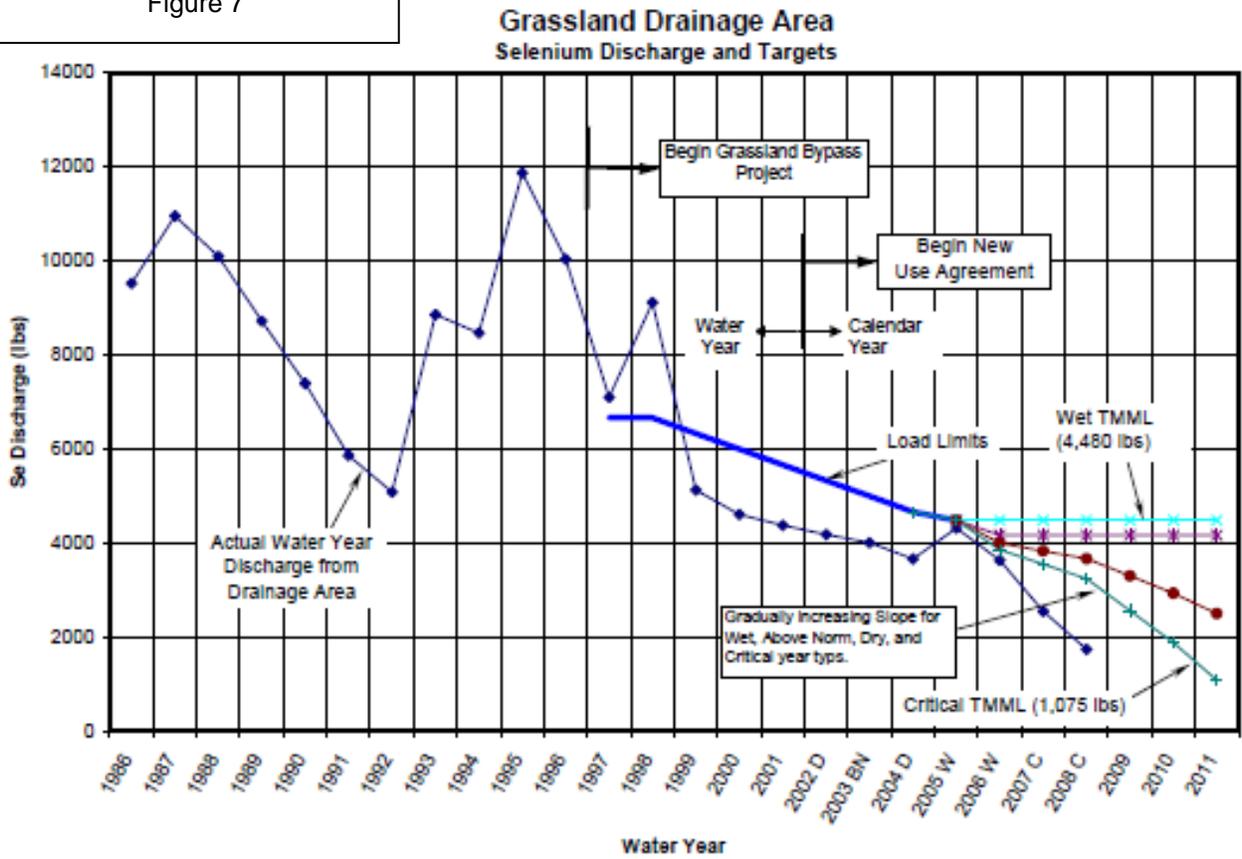
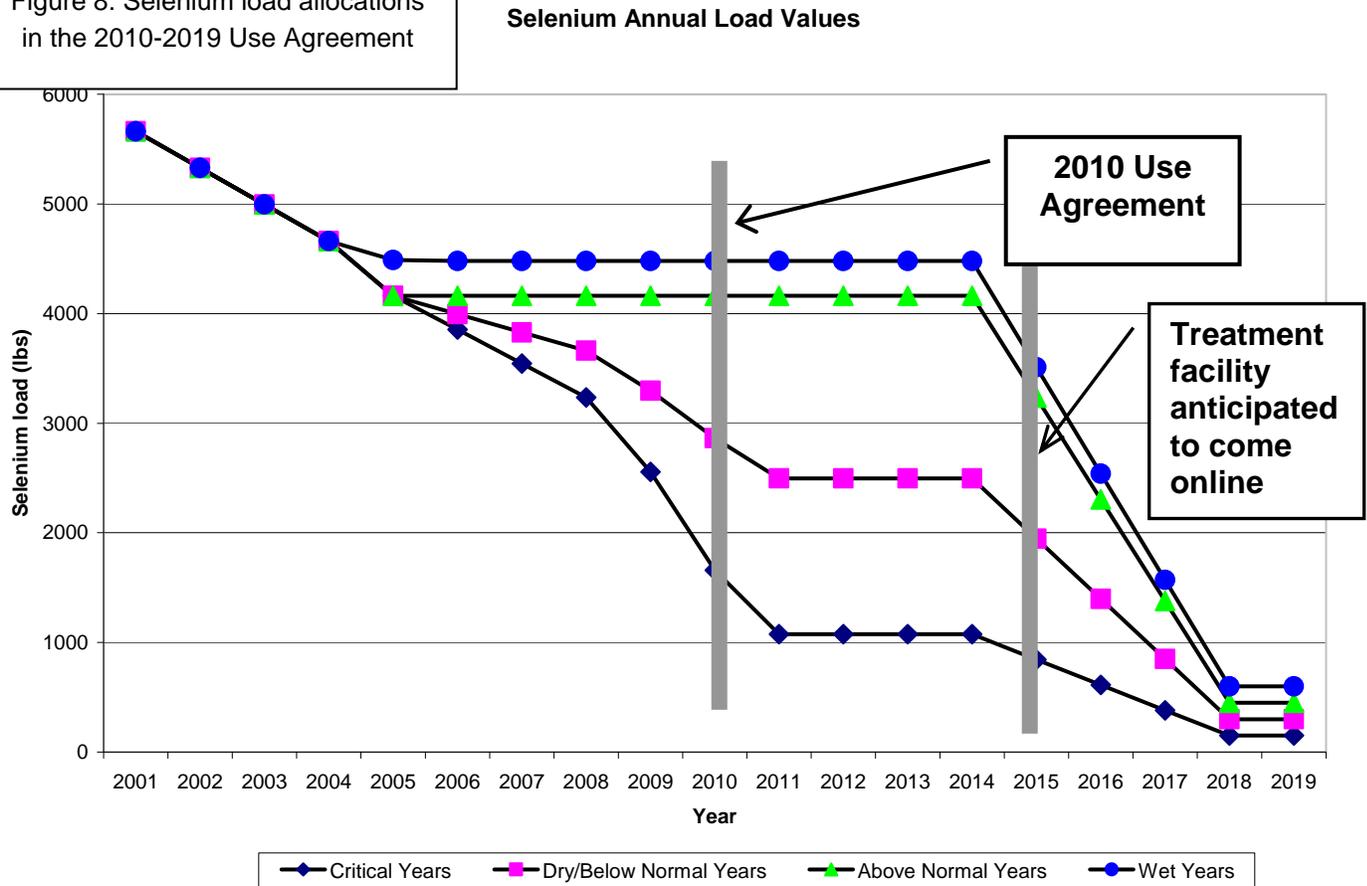


Figure 8: Selenium load allocations in the 2010-2019 Use Agreement



The new agreement is very similar to the previous (2001-2009) Use Agreement, however selenium load limits ramp down from current levels (varying by water year type), drop sharply as the GBP reaches full build-out and diminish to allow the equivalent of one month's current selenium discharge in the final year (see Figure 8).¹⁰ Salt load limits also decrease over time. The Use Agreement establishes incentive fees which will be incurred if selenium or salt load limits are exceeded, and a supplemental mitigation fee that will be paid for every pound of selenium discharged after 2015. The GAF recognize that the Board has historically favored compliance at the earliest feasible time and they have expressed their intent to avoid mitigation fees by ceasing to discharge agricultural subsurface drainage prior to the 2019 deadline if possible, but they are also concerned that adverse weather, state and federal funding issues or other complications experienced in the GBP's past may recur before they can complete build-out of the regional drainage management system. Therefore, they are requesting what they believe is sufficient time to develop full drainage management capacity in the area, making allowances should unusual but not unprecedented circumstances further delay completion of some tasks.

Action Alternative 1 calls for expansion and development of the drainage reuse area from its present size to up to 6,900 acres. As of December 2009, 6,200 acres had been purchased and 4,300 acres of the reuse area had been at least partially developed. Action Alternative 1 calls for drainage treatment, which has been tested in the past with mixed results.

The EIS/EIR details the conditions under which the discharge will be allowed, including:

- Continuation and expansion of existing practices to meet water quality objectives and/or prevent drainage discharges in channels where the objective currently applies
- Continued build-out of drainage source control, drainage management and drainage treatment and disposal facilities
- Continued GBP monitoring
- Continued GBP oversight and accountability through a regional drainage management entity

2.3 Action Alternative 2: Recommended Alternative

The Recommended Alternative (Action Alternative 2) is Action Alternative 1 with additions that will aid timely compliance with water quality objectives and facilitate performance-tracking through the term of the project.

¹⁰ Figure 8 was taken from the EIR/EIS to show Use Agreement load targets that begin at the load allocations established in the selenium TMDL for the San Joaquin River and ramp down through the term of the proposed extension.

Term

The term of the extension requested by the GAF is reasonable given the unexpected events that have occurred since the project's onset to delay full project implementation, including floods (1996, 1997 and 2005) and the present budgetary crisis, which has frozen state grant funds awarded to the GAF to build and operate a pilot drainage treatment facility. The GAF may be able to achieve compliance sooner (and should be encouraged to do so) but a 2019 compliance date will ensure sufficient time to not only complete construction and implementation of all elements of the project but also to evaluate performance and economic feasibility of the still-untested full scale drainage treatment facility anticipated to come online roughly midway through the proposed term of the time extension.

The proposed 9-year, 3-month term will also provide the dischargers with the time needed to develop and test a long-term, stormwater-only management strategy for the area. While the project is intended to manage all agricultural subsurface drainage discharges through the term of the 2010-2019 Use Agreement, stormwater continues to be a wild card, as high rainfall creates local flooding that is beyond the control of the farmers, and, localized rain events can saturate soils, resulting in flood flows that follow the natural slope of the land, potentially causing ponding, breaking into canals and/or entering wetland supply channels. The project is located downgradient of a flashy stream system (Panoche/Silver Creek) and flood flows occasionally move through this area on their way to the San Joaquin River. Floods are infrequent, but when they occur (as happened in the first two years of the Project. See figures 3 and 7), the floodwaters can carry selenium in excess of water quality objectives and/or load limits. The GAF and the Bureau have focused most of their efforts on controlling agricultural subsurface drainage, but the 2010 Use Agreement acknowledges that a more robust stormwater plan will need to be negotiated and ready for implementation before the end of the term of the proposed amendments.

Performance Goals

The GAF proposal addresses the need to reduce discharges to meet the objective or comply with the prohibition. They have expressed their intention to cease the discharge of agricultural subsurface drainage as quickly as feasible, and their Agreement for Use of the San Luis Drain (Use Agreement) stipulates that they will pay a mitigation fee for every attributable pound of selenium discharged after 2015. The proposal does not, however, include performance milestones; so staff recommends that the amendments include an interim water quality performance goal to encourage compliance with the selenium objective as rapidly as possible. Performance goals serve as measures of how far a project has progressed toward meeting an objective. As noted in section 1.3.1, the WDRs for the discharge will be updated to reflect the load limits negotiated in the 2010 Use Agreement. Although reduced selenium loads will benefit the San Joaquin River and Delta, elevated selenium concentrations can have negative impacts on Mud Slough (north), as shown in figure 10 in the next section. A 2015 concentration-based Performance Goal would mark the mid-point of the term of the proposed time extension. The proposed performance goal (15 ug/L selenium monthly mean in Mud Slough (north) cannot be met if the dischargers continue to discharge untreated agricultural subsurface drainage; but since the proposed 2015 goal is a monthly average calculated to be

consistent with Use Agreement selenium load targets, some minor operational adjustments could be accommodated. In order to meet this goal, the GAF must either have a fully operational, technically viable treatment system in place or be managing their excess drainage through some other approach, such as preferentially reusing the drainage highest in selenium in the reuse area and discharging only drainage with more moderate concentrations.

If a technically viable treatment system is found, the Grassland Area Farmers will still need to verify that it is economically feasible to operate the system and manage its waste stream. Economic feasibility and local acceptance of the technology should be determined concurrent with technical feasibility. If the feasibility of treatment is still in question by 2012, the January 2013 Long-Term Drainage Management Plan Update (annual report) should identify the alternate and/or supplemental drainage management strategies that will be investigated and employed to meet the objective by 31 December 2019.

Reporting

The GAF anticipate building a drainage treatment facility that will come online midway through the proposed nine year term, but acknowledge that agricultural subsurface drainage treatment has not been attempted on this scale in this part of the state and that there is considerable uncertainty regarding its technical and economic feasibility. As a way of keeping the focus on long-term water quality protection and not simply on technological success or failure, Action Alternative 2 anticipates that the project's Monitoring and Reporting Program (MRP) will be updated to include annual written and verbal reports to the Board on the progress, performance and feasibility of the treatment facility and its acceptance or lack of acceptance within the community utilizing and paying for it; or, if treatment proves to be infeasible, reports on the alternate strategy that will result in compliance with the selenium objective or prohibition of discharge. If treatment is determined to be technically infeasible, the Executive Officer should be informed no later than January 2013 as to the alternate strategy or strategies the GAF will pursue to achieve compliance. If the feasibility of treatment remains uncertain by 2012, the 2013 annual report should include an implementation schedule showing when and under which conditions each alternate strategy would be used. The Board is not prescribing how the dischargers achieve compliance but the GAF should be prepared to provide a reasonable roadmap to achieve compliance should the treatment option prove inadequate as a stand-alone means of dealing with excess drainage.

The MRP will also be modified to require the GAF to report on the status of their updated Storm Event Management Plan. Written reports would be incorporated into the annual updates to the Long-term Drainage Management Plan that the GAF now provide. Verbal updates, given at the first opportune Board meeting of each calendar year¹¹ will supplement the written annual updates, when necessary. The Use Agreement calls for similar progress reports to the Use Agreement Drainage Oversight Committee starting 2013. Staff recommends that the expanded annual reports to the

¹¹ If the agenda for the first Board meeting of the year is too full, staff will schedule the update for a subsequent meeting. Verbal presentations are for the convenience of the Board and the Board may allow the dischargers to skip one or more verbal updates.

Board begin upon adoption of the amendments (first report due January 2011) and continue through the term of the proposed time extension (31 December 2019).

Long-term salt management planning

While not part of the amendments, Action Alternative 2 anticipates additional adjustments to the MRP to further refine the approach of Action Alternative 1 by requiring the dischargers to remain active in the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) effort to develop a comprehensive regional salinity and nitrate management plan for the Central Valley region, which will be incorporated into the relevant Basin Plans. The GBP is focused on selenium control but the beneficial byproduct of managing drainage-borne selenium is that as selenium loads decrease, salt loads also decrease. The lessons learned in the Grasslands drainage management area will be helpful for salt managers in other parts of the region; particularly those whose salt issues are complicated by the presence of constituents like selenium, arsenic, molybdenum and boron. Staff recommends that the Board condition adoption of the amendments on the dischargers' willingness to continue to participate in CV-SALTS and provide their expertise and resources to the shared work of collaborative basin planning for salt management.

3 Environmental Analysis

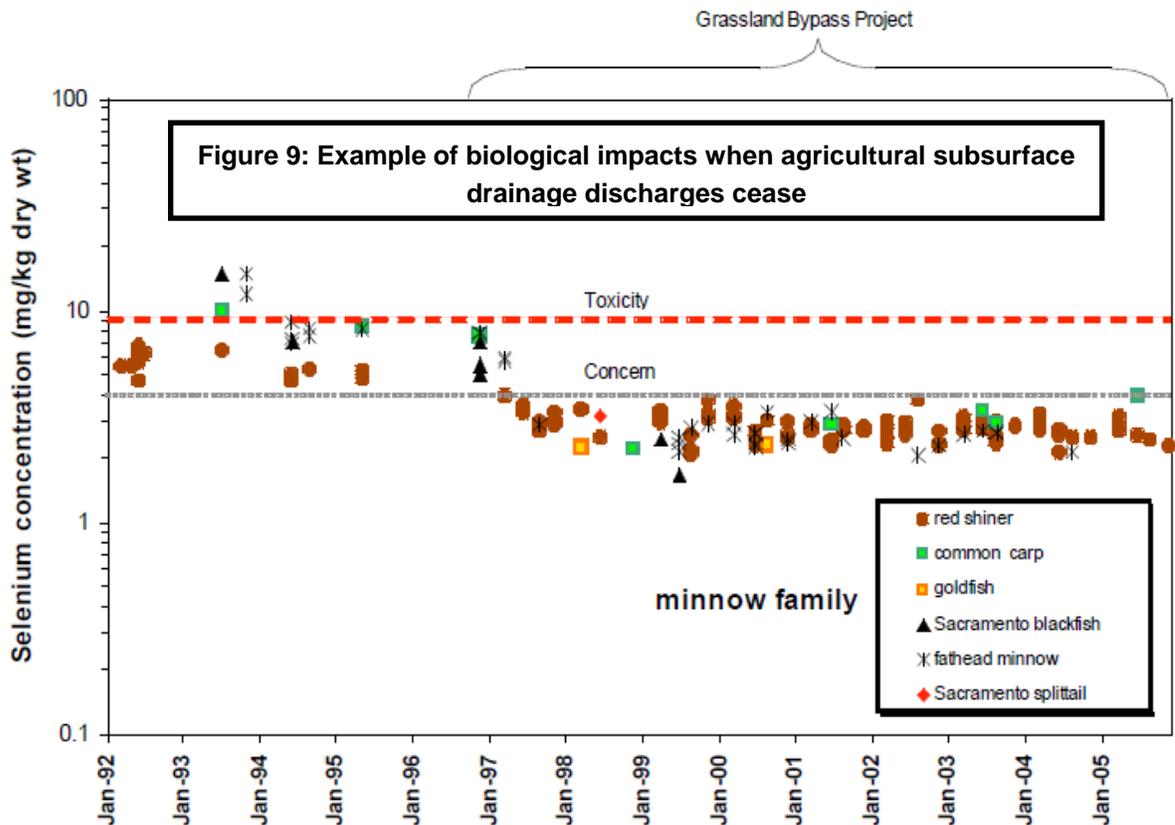
The Bureau and Authority commissioned an EIS/EIR for the project, which the Authority adopted 8 October 2009. The study identifies the impacts of taking no action (the No Project Alternative), which would require farmers to manage all agricultural subsurface drainage within the project area boundaries even though the regional drainage management system is not yet capable of dealing with all drainage anticipated to be generated; taking the proposed action, where agricultural subsurface drainage continues to be discharged from the Project Area for up to an additional 9 years, 3 months past October 2010 but discharges are required to decrease over time; and a similar alternative where discharge continues for the same term as the proposed alternative but the selenium load allocation is capped at current levels. It is anticipated that the discharge would decrease over time, but the alternative project described in the EIS/EIR includes no interim project goals for selenium.

The environmental impacts of the proposed Basin Plan amendments would be identical to those disclosed in the EIS/EIR for the proposed alternative. The selenium objective would not be met in Mud Slough (north) and the San Joaquin River above the Merced River for some periods during the term of the extension, so the impact of the amendments is a continued risk of toxicity to wetland wildlife species utilizing Mud Slough and the affected stretch of the San Joaquin River. Figures 9 and 10, taken from the Grassland Bypass Project Report 2004-2005, illustrate impacts that can be anticipated if the proposed amendments are adopted¹². Wildlife utilizing Salt Slough and

¹² These figures were selected because they represent a large number of samples, providing a clear contrast between channels where the prohibition of discharge is currently in effect and where it is not. The complete report includes information on concentrations of selenium and other constituents in biota upstream and downstream of the GBP discharge.

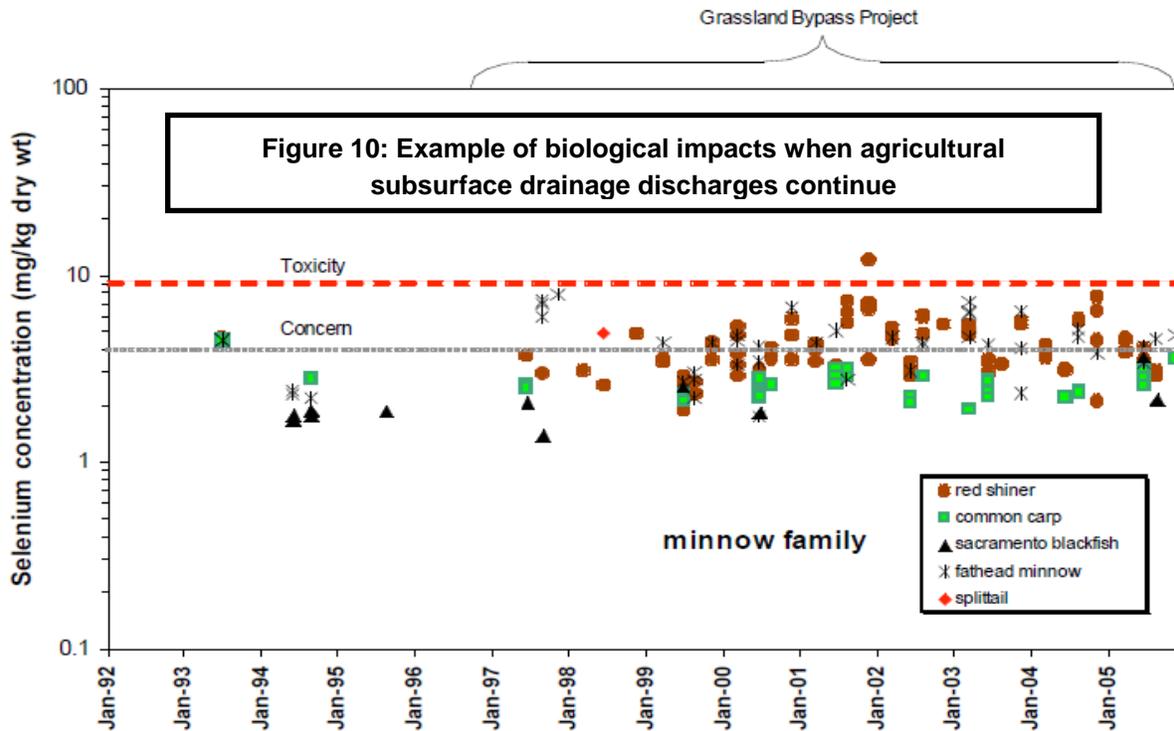
the Basin Plan Appendix 40 wetland water supply channels where the discharge of agricultural subsurface drainage is prohibited will continue to show improvement over pre-project conditions (Figure 9). As depicted in Figure 10, wildlife utilizing Mud Slough (north) will continue to exhibit selenium concentrations that could exceed thresholds of concern over the extended term that selenium-laden agricultural subsurface drainage is discharged to the channel; therefore, mitigation for these impacts is necessary and has been incorporated into the project. The GAF will provide the nearby wetland refuge operators with reliable fresh water supplies¹³ to develop and expand “clean” alternative habitat to maintain and increase healthy populations of wetland wildlife in the area. The mitigation strategy is incorporated in the requirements of the Use Agreement between the Bureau and Authority. Compliance with Use Agreement requirements is overseen by the multi-agency Data Collection and Reporting Team, Technical and Policy Review Team and the Drainage Oversight Committee. Appendix A to the EIS/EIR provides full details.

Figure 2C. Selenium in minnows in Salt Slough (Site F)



¹³ Additional mitigation actions are required by the Use Agreement if certain conditions develop or deadlines are not met, but provision of water for alternative habitat development is a required mitigation action for impacts to Mud Slough under all conditions of continued use of the San Luis Drain.

Figure 3C. Selenium in minnows in Mud Slough above the San Luis Drain discharge (Site C)



The EIS/EIR notes that under the No Project alternative, the multi-agency agreements and drainage management organizational structure could dissolve since there would no longer be any need for a Use Agreement (San Luis Drain would no longer be used as a drainage conveyance channel). Responsibility for waste management could fall on individual landowners rather than the regional Drainage Authority currently managing the project. If regional cooperation dissolves, individual landowners will probably not stop irrigating the high-value crops now grown in the area. Without drainage, the seleniferous shallow groundwater will rise closer to the surface in downgradient areas, as it has in Westlands Water District, south of the Grasslands Drainage Basin. This would increase the potential for seepage to impact local surface water channels and open drains; a condition that the GBP now avoids through careful regional monitoring and management. Without regional cooperation, development of an effective, long-term regional stormwater management plan is unlikely.

The Basin Plan requires the Bureau and Authority to continue to meet the selenium objectives in the San Joaquin River downstream of the Merced River and in the wetland water supply channels identified in Appendix 40, so while the EIS/EIR analyzed impacts for the full reach of the project area, the proposed Basin Plan amendments would result in no change in the project’s ability to meet the objectives in reaches where the prohibition/objective is already in effect. Overall, long-term and cumulative impacts of the proposed alternative are anticipated to be more environmentally favorable than the No Project Alternative due to the continuation of the current framework for multiple agency coordination.

Precipitation and irrigation water mobilize soluble salts. Since salts occur naturally in the soils and groundwater in the project area, and fertilizer and soil amendments used in agriculture also contribute salt, an unavoidable consequence of water application is salt movement. The 2004 Technical TMDL report supporting the basin plan amendments for control of salt and boron discharges into the lower San Joaquin River identified the Grassland drainage area as contributing 36% of the salt load discharged to the San Joaquin River. Without a means of balancing salt imports with exports, soil and groundwater will become more saline over time. This situation occurs in many parts of the state, but the Central Valley Salinity Alternatives for Long Term Sustainability Initiative (CV-SALTS) is attempting to find a sustainable solution to this and other existing and emerging salt issues. The Bureau and Authority are participating in CV-SALTS' effort to develop a plan to manage salts and nitrate in this basin and throughout the region.

TABLE 1: SUMMARY OF EFFECTS

<p>No Project/No Action</p>	<ul style="list-style-type: none"> • Immediate reduction of drainage-borne selenium in Mud Slough (north) and SJR. (Mitigation requirements disappear with cessation of discharge) • Potential loss of cooperating parties before full drainage management capability is achieved • Potentially an immediate need for the Board to restructure the regulatory approach now implementing the selenium control program. Additional resources would likely be needed to enforce the prohibition and begin drafting individual orders to address drainage management actions. • Increased potential for impacts to resources now protected by the monitoring and management of the regional drainage management project (wildlife and farmland). • No long-term stormwater plan • Drainage area soil and water salinity problems increase rapidly
<p>Action alternatives</p>	<ul style="list-style-type: none"> • Continued but diminishing selenium exposure to biota in Mud Slough (north) and San Joaquin River above the Merced River • Mitigation actions (reliable fresh water supply) will allow expansion and development of alternative habitat to foster healthy populations of wetland wildlife species impacted by selenium in the affected reaches • Continued but diminishing discharge of agricultural subsurface drainage downstream (salt, boron and selenium). The discharge would need to continue to meet selenium water quality objectives in the lower San Joaquin River (below the Merced) and wetland water supply channels listed in Basin Plan Appendix 40.

Action alternatives (continued)	<ul style="list-style-type: none"> • Development of a long-term regional stormwater management plan • Drainage area soil and water salinity problems increase at a slower rate while long-term solutions are sought
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4 Mitigation Measures

The proposed Basin Plan amendments are an administrative change that could potentially have environmental consequences as described in the EIS/EIR and in Section 3 of this report. Failure to adopt the amendments will also have environmental consequences as previously described.

A number of mitigation actions are described in the EIS/EIR for impacts stemming from sediment management, operation of the drainage reuse area and addressing impacts to special status species; however some of these actions, such as impact avoidance measures utilized in the drainage reuse area mitigate impacts from current and ongoing operations, and the Board’s choice to adopt or not adopt the proposed Basin Plan amendments will have no bearing on how or if these actions are carried out, although it could affect how quickly the sediment management plan must be implemented.

Mitigation actions for continued use of Mud Slough (north) as a receiving water for discharges of agricultural subsurface drainage are described in the Use Agreement and summarized below:

Baseline mitigation while the Use Agreement is in effect:

- The GAF will provide fresh water to ponds in state wetland areas
- The GAF will create year-round wetlands on federal refuge lands at a site to be determined later. (Discussions are ongoing between USFWS and the Bureau)

Supplemental mitigation while the Use Agreement is in effect:

- The GAF establish a Mitigation Project Fund
- The GAF pay a fee per pound of attributable selenium discharge

The purpose of each mitigation measure listed above is to offset toxic impacts to wetland species in the affected area by creating nearby alternate habitat that will support healthy populations of impacted species. The proposed amendments condition the time extension on timely and adequate implementation of the mitigation actions described in the Use Agreement. If the Board determines at any point prior to 31 December 2019 that timely and adequate mitigation as outlined in the Use Agreement has not been provided, the prohibition of discharge of agricultural subsurface drainage water, as specified in the amendments, would become effective immediately.

In addition to these measures, staff recommends that the Board condition adoption of the Basin Plan amendments on the continued participation of the dischargers (Authority and Bureau) in CV-SALTS, the initiative to develop a regional salinity and nitrate management plan for the Central Valley and Delta regions, as mitigation for the impacts of irrigation and drainage management and the salt displacement impacts on surface water and groundwater in the Project area stemming from these activities.

5 Consistency with Existing Laws, Plans and Policies

Any proposed changes to the Regional Water Board Basin Plans must be consistent with existing Federal and State laws and regulations including adopted State and Regional Water Board policies. CWC §13146 requires that, in carrying out activities that affect water quality, all state agencies, departments, boards and offices comply with state policy for water quality control unless otherwise directed or authorized by statute, in which case they shall indicate to the State Water Board in writing their authority for not complying with such policy. This chapter summarizes existing Federal and State laws and policies that are relevant to the proposed time extension described by the proposed Basin Plan amendments.

The EIS/EIR identifies the federal, state and local requirements applicable to the GBP, as shown below:

Federal requirements pertinent to the GBP are:

- National Environmental Policy Act (NEPA)
- Endangered Species Act
- Fish and Wildlife Coordination Act
- Migratory Bird Treaty Act
- Executive Order 12898 (Environmental Justice)
- Indian Trust Assets
- Executive Order 13007 (Indian Sacred Sites)
- National Historic Preservation Act
- Executive Order 11988 (Floodplain Management)
- Executive Order 11990 (Wetlands Protection)
- Wild and Scenic Rivers Act
- Clean Water Act of 1977
- Memorandum on Farmland Preservation and the Farmland Protection Policy Act
- Federal Agriculture Improvement and Reform Act of 1996
- 36 CFR 800 (consultation with State Historic Preservation Officer)

State requirements pertinent to the GBP are:

- California Environmental Quality Act (CEQA)
- California Endangered Species Act
- Delta Protection Act of 1959
- Porter-Cologne Act
- Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary

The project must also comply with all local ordinances, codes and laws; and be consistent with the General Plans for Stanislaus, Merced and Fresno counties. The proposed Basin Plan amendments allow additional time to complete operations already determined to be consistent with these General Plans for a project that is already subject to state, federal and local ordinances, codes and laws.

5.1 Antidegradation Analysis

Both USEPA (40 CFR §131.12) and the State of California (State Water Board Resolution 68-16) have adopted antidegradation policies as part of their approach to regulating water quality. The Central Valley Water Board must ensure that its actions do not violate the federal or State antidegradation policies. This section of the Staff Report analyzes whether approval of the proposed amendments would be consistent with the federal and State antidegradation policies.

5.1.1 Federal Antidegradation Policy

The Federal Antidegradation Policy (40 CFR §131.12) states:

“(a) The State shall develop and adopt a statewide antidegradation policy and identify the methods for implementing such policy pursuant to this subpart. The antidegradation policy and implementation methods shall, at a minimum, be consistent with the following:

(1) Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.

(2) Where the quality of the waters exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully. Further, the State shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control.

(3) Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and

waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

(4) In those cases where potential water quality impairment associated with a thermal discharge is involved, the antidegradation policy and implementing method shall be consistent with section 316 of the Act.”

The proposed Basin Plan amendments provide additional time to develop sufficient capacity in the area’s drainage management system to appropriately manage all agricultural subsurface drainage generated in the Project area. The existing beneficial uses of Mud Slough (north) are irrigation (limited by naturally occurring salt and boron); stock watering; contact and non-contact recreation; warm freshwater habitat; spawning and wildlife habitat. Adopting the amendment will not change attainability of these uses relative to current conditions, but will result in a temporary continuation of the potential impairment to warm freshwater habitat, spawning and wildlife habitat now occurring relative to no project. With the amendments, water quality in Mud Slough (north) will remain vulnerable to degradation for up to an additional nine years, three months beyond 1 October 2010.

Without the amendments, with incomplete control over agricultural subsurface drainage, drainage conditions will worsen and salty, seleniferous groundwater will rise closer to the surface. Crop land will become damaged (less productive) and although discharge of agricultural subsurface drainage (tile drainage) will continue to be prohibited in wetland water supply channels, there will be an increased selenium exposure risk to wildlife from groundwater seepage to deep drains and conveyance channels. The cooperative drainage management organization (GAF) could dissolve; and with it, the economic support for the regional drainage management system and the mitigation commitments agreed to by the GAF and downstream wetland interests. If the GAF dissolves, the Board will need to develop effective regulatory relationships (probably through WDRs) with each discharger in the drainage area; and as our office learned through the Irrigated Lands Regulatory Program, developing orders for a large number of dischargers in even a relatively small watershed like the Grassland Basin can take years. Amending the Basin Plan will allow the Board to continue to regulate a single, controlled discharge that is required to diminish over time to meet selenium water quality objectives no later than 31 December 2019.

Amending the Basin Plan allows discharge of agricultural subsurface drainage on a controlled, limited basis. The temporary degradation of Mud Slough (north) is allowable under the federal anti-degradation policy because the permanent diversion of drainage away from Salt Slough and the wetland water supply channels listed in Appendix 40, as afforded by the regional drainage management project, has long-term environmental benefits to the wildlife utilizing this portion of the Pacific Flyway and the Grasslands Ecological Area, and the farm-based economy of the area.

5.1.2 State Antidegradation Policy

Antidegradation provisions of State Water Board Resolution No. 68-16 (“Statement of Policy with Respect to Maintaining High Quality Waters in California”) state, in part:

“(1) Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies.

(2) Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.”

Existing water quality in Mud Slough (north) is poor today and the amendments will result in the continued presence of seleniferous agricultural subsurface drainage in the channel. Continued discharge constitutes an increase in waste volume over conditions without the amendments. However, the impacts to wildlife and the local farming economy noted in sections 3 and 5.1.1 of this report can also be anticipated if the amendments are not adopted.

The proposed Basin Plan amendments provide additional time to develop sufficient capacity in the area’s drainage management system to appropriately manage all agricultural subsurface drainage generated in the Project area; and complete control of regional drainage will have the benefits described in section 3. The discharge is simultaneously causing an increase in water quality in a more environmentally sensitive area from which the discharge is being diverted: namely, the wetland water supply channels listed in Appendix 40 and Salt Slough. Therefore, the maximum benefit to the people of the State is best served by temporarily allowing water quality in Mud Slough (north) to be degraded in a controlled manner while full regional drainage management capability is developed.

5.2 Consistency with Federal and State Laws

Federal agencies have adopted regulations implementing federal laws to which Central Valley Water Board actions must conform. The following Federal laws are relevant to the proposed Basin Plan amendments:

- Antidegradation Policy (40 CFR §131.12)
- Clean Water Act
- Federal & State Endangered Species Acts (50 CFR et seq., California Fish and Game Code §2050-2116 et seq.)

These laws and their relevance to the proposed water quality objectives and implementation plan are described in the following sections.

5.2.1 Clean Water Act of 1977

The Clean Water Act (Public Law 95-217), through implementation by the U.S. Environmental Protection Agency (USEPA), seeks to restore and maintain the chemical, physical, and biological integrity on the nation's waters (EIS/EIR). As shown in Figures 3-6, the GBP has successfully restored water quality in Salt Slough and the wetland water supply channels listed in Appendix 40, and has made significant progress in reducing selenium loading in the San Joaquin River. The proposed amendments will not change the water quality objectives that now protect these waterways. The amendments simply allow additional time for the objective to be met in Mud Slough [north] and the San Joaquin River above the Merced in a manner the dischargers find feasible.

5.2.2 Requirements for Avoiding Wetland Loss

Under CWA Section 404 and the Rivers and Harbors Act of 1899 Section 10, alteration of waterways, including wetlands, that affect navigable waters requires a permit from the Federal government and assurance that impacts will be avoided or mitigated. The U.S. Army Corps of Engineers operates the 404 permit program with a goal of achieving "no net loss" of wetlands. For projects proposing unavoidable impacts on wetlands, compensatory mitigation in the form of replacing the lost aquatic functions is generally required. Under authority of CWA Section 401, the State also reviews projects affecting water bodies. The proposed Basin Plan amendments will not alter existing water quality objectives in wetland water supply channels listed in the Basin Plan's Appendix 40. Since Mud Slough (north) will continue to receive drainage through the term of the project mitigation has been incorporated to address impacts to Mud Slough, which includes provision of fresh water supplies to the nearby federal and state wetland refuges.

5.2.3 Federal & State Endangered Species Act

The Federal Endangered Species Act of 1973 (50 CFR *et seq.*) was established to identify, protect and recover imperiled species and the ecosystems upon which they depend. It is administered by the Interior Department's U.S. Fish and Wildlife Service (USFWS) and the Department of Commerce's National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS). The USFWS has primary responsibility for terrestrial and freshwater organisms, while the NMFS has primary responsibility for marine species such as salmon and whales. In addition, the State of California enacted the California Endangered Species Act (California Fish and Game Code, Sections 2050-2116 *et seq.*), which is administered by the California Department of Fish and Game and similarly maintains State lists of rare, threatened and endangered species.

5.2.3.1 Federal Endangered Species Act

The EIS/EIR describes the federal Endangered Species Act as follows:

"The Federal Endangered Species Act (ESA) most recently amended in 1988 (16 United States Code 1536), establishes a national program for the conservation

of threatened and endangered species of fish, wildlife, and plants and the preservation of the ecosystems upon which they depend. Section 7(a) of the ESA requires Federal agencies to consult with the U.S. Fish and Wildlife Service (Service) and/or National Marine Fisheries Service (NMFS) on any activities that may affect any species listed as threatened or endangered (16 USC 35 §1531 et seq.).”

Reclamation submitted a Biological Assessment to the Service and NMFS, addressing the potential impacts of the proposed federal action on species listed and critical habitat designated under the federal Endangered Species Act. The Service and NMFS prepared a Biological Opinion. The Biological Opinion and Record of Decision were issued in December 2009, along with a letter from National Marine Fisheries Service (Section 7 consultation).

The Biological Opinion concluded:

After reviewing the current status of the species considered in this opinion, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that continuation of the GBP and execution of the third Use Agreement for use of the SLD, as described, is not likely to jeopardize the continued existence of the giant garter snake and the San Joaquin kit fox..

National Marine Fisheries service found:

Because the proposed action includes specific measures to avoid adverse affects to the habitat that supports Chinook salmon, NMFS has determined that the proposed action will not adversely affect the EFH (essential fish habitat) of Chinook salmon.

The Record of Decision announces:

Reclamation's decision is to execute the 2010 Use Agreement in order to implement the Preferred Alternative identified in Section 2.2 of the FEIS/EIR. The decision includes implementation of the mitigation measures listed in Section 15 of the FEIS/EIR and the reasonable and prudent measures and terms and conditions in the 2009 Biological Opinion from the U. S. Fish and Wildlife Service (FWS). These measures are required to implement the Preferred Alternative.

These documents are posted on the Bureau's website:

http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=3513.

5.2.3.2 California Endangered Species Act

The EIS/EIR describes the California Endangered Species Act as follows:

“The California Endangered Species Act (CESA) provides for the protection and conservation of threatened and endangered species and their habitats. It is very similar to the ESA. In general, CESA:

- Authorizes determination and listing of species as endangered or threatened.
- Prohibits the take, possession, purchase, or sale of endangered, threatened, or candidate species.

- Provides authority for state agencies to purchase habitat for endangered and threatened species.
- Directs the California Department of Fish and Game (CDFG) to work closely with the Service and NMFS, to participate to the greatest extent practicable in Federal consultations, and to adopt the Federal biological opinion whenever possible.”

CDFG has been working closely with the Bureau and Authority to craft the 2010-2019 Use Agreement’s wildlife monitoring and protection and impact mitigation requirements.

5.3 Greenhouse Gases and Climate Change

This passage is taken from the EIS/EIR: “The Global Warming Solutions Act of 2006 (AB 32) requires that CEQA documents contain a quantitative assessment of greenhouse gas emissions caused directly or indirectly by the project, an evaluation of the significance of project-related emission from a cumulative perspective, and provisions for mitigation of significant project effects. Although AB 32 directs the Air Resources Control Board (ARB) to develop appropriate regulations and establish a mandatory reporting system to track and monitor global warming emission levels, the ARB has not yet been able to comply with these directives. The State Attorney General’s Office reviews EIRs to determine their adequacy.

Climate change refers to long-term fluctuations in temperature, precipitation, wind and other elements of the Earth’s climate system. The United Nations has defined climate change as ‘a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.’ Currently, there are no specific requirements in place for NEPA or CEQA documents relative to climate change.”

The proposed Basin Plan Amendments would allow continuation of agricultural and drainage management actions as currently practiced. The amendments would not directly trigger an increase in greenhouse gas emissions; however, if a treatment facility is constructed, there would likely be an increase in greenhouse gas production. The amendments provide time for a treatment facility to be built and tested, but an environmental analysis of the impacts of construction and operation of an as-yet-theoretical treatment facility is beyond the scope of the analysis needed for these amendments.

5.4 Consistency with State Water Board Policies

The State Water Board is authorized to adopt state policy for water quality control (CWC §13140). State Water Board water quality control plans supersede any regional water quality control plans for the same waters to the extent of any conflict (CWC §13170). The following are the State Water Board policies that pertain to this project:

- Statement of Policy with Respect to Maintaining High Quality of Water in California (Antidegradation Implementation Policy) (Resolution No. 68-16)
- Sources of Drinking Water Policy (Resolution No. 88-63)
- Pollutant Policy Document (Resolution No. 90-67)

- Nonpoint Source Management Plan & the Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program (Resolution No. 99-114 and 2004-0030)
- Water Quality Enforcement Policy (Resolution No. 2002-0040)
- Water Quality Control Policy for Addressing Impaired Waters: Regulatory Structure and Options (Resolution No. 2005-0050)

These policies and their relevance to the proposed water quality objectives and implementation plan are described in the following sections.

5.4.1 Resolution No. 68-16: Statement of Policy with Respect to Maintaining High Quality of Water in California (Antidegradation Implementation Policy)

The Antidegradation Implementation Policy was described in section 5.1 above. The proposed Basin Plan amendments are consistent with both the federal and state antidegradation policies.

5.4.2 Resolution No. 88-63: Sources of Drinking Water Policy

This policy states that all waters of the state are to be protected as existing or potential sources of municipal and domestic supply water (MUN). The proposed Basin Plan amendments are consistent with this policy because they do not change or fail to protect a MUN beneficial use.

5.4.3 Resolution No. 90-67: Pollutant Policy Document

This policy requires, in part, that the Central Valley and San Francisco Bay Water Boards use the Pollutant Policy Document (PPD) as a guide to update portions of their Basin Plans. The PPD requires that the Central Valley Water Board develop a Mass Emissions Strategy (MES) for limiting loads of pollutants from entering the Sacramento-San Joaquin Delta. The purpose of the MES is to control the accumulation in sediments and the bioaccumulation of pollutant substances in the tissues of aquatic organisms in accordance with the statutory requirements of the state Porter-Cologne Water Quality Act and the Federal CWA.

Selenium can potentially bioaccumulate in tissues of aquatic organisms but the proposed amendments do not alter any water quality standard or beneficial use designation. As previously noted, mitigation for anticipated impacts to organisms utilizing Mud Slough (north) and the San Joaquin River above the Merced has been incorporated into the Use Agreement for the extended term of the project.

5.4.4 Resolution No. 99-114 & Resolution No. 2004-0030: Nonpoint Source Management Plan & the Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program

In December 1999, the State Water Board adopted the Plan for California's Nonpoint Source (NPS) Pollution Control Program (NPS Program Plan) and in May 2004, the State Water Board adopted the Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program (NPS Policy). The NPS Policy explains how State and Regional Water Boards will use their planning and waste discharge regulation

authority under the Porter-Cologne Act to implement and enforce the NPS Program Plan. The NPS Policy requires all nonpoint source discharges to be regulated under WDRs, waivers of WDRs, a Basin Plan prohibition, or some combination of these administrative tools. The NPS Policy also describes the key elements that must be included in a nonpoint source implementation program.

The selenium control program utilizes a combination of a prohibition of discharge, water quality objectives and WDRs, and the administrative change to the program through the proposed Basin Plan amendments will not change this.

5.4.5 Resolution No. 2002-0040: Water Quality Enforcement Policy

The State Water Board adopted this policy to ensure enforcement actions are consistent, predictable, and fair. A revised policy, adopted by the State Water Board 17 November 2009, is currently undergoing review by the Office of Administrative Law. The policy describes tools that the State and Regional Water Boards may use to determine the following: type of enforcement order applicable, compliance with enforcement orders by applying methods consistently, and type of enforcement actions appropriate for each type of violation. The State and Regional Water Boards have authority to take a variety of enforcement actions under the Porter-Cologne Water Quality Control Act. These actions can be taken to enforce the WDRs adopted pursuant to the Basin Plan.

5.4.6 Resolution No. 2005-0050: Water Quality Control Policy for Addressing Impaired Waters: Regulatory Structure and Options

The State Water Board's Impaired Waters Policy incorporates the following: CWA Section 303(d) identification of waters that do not meet applicable water quality standards and prioritization for TMDL development; CWC Section 13191.3(a) requirements to prepare guidelines to be used by the Regional Water Boards in listing, delisting, developing, and implementing TMDLs pursuant to CWA Section 303(d) of 33 USC Section 1313(d); and CWC section 13191.3 (b) requirements that State Water Board considers consensus recommendations adopted by the 2000 Public Advisory Group when preparing guidelines.

The Impaired Waters Policy includes the following statements:

- A. "If the water body is neither impaired nor threatened, the appropriate regulatory response is to delist the water body.
- B. If the failure to attain standards is due to the fact that the applicable standards are not appropriate to natural conditions, an appropriate regulatory response is to correct the standards.
- C. The State Water Board and Regional Water Boards are responsible for the quality of all waters of the state, irrespective of the cause of the impairment. In addition, a TMDL must be calculated for impairments caused by certain EPA designated pollutants.

D. Whether or not a TMDL calculation is required as described above, impaired waters will be corrected (and implementation plans crafted) using existing regulatory tools.

1) If the solution to an impairment will require multiple actions of the Regional Water Board that affect multiple persons, the solution must be implemented through a Basin Plan amendment or other regulation.

2) If the solution to an impairment can be implemented with a single vote of the Regional Water Board, it may be implemented by that vote.

3) If a solution to an impairment is being implemented by a regulatory action of another state, regional, local, or federal agency, and the Regional Water Board finds that the solution will actually correct the impairment, the Regional Water Board may certify that the regulatory action will correct the impairment and if applicable, implement the assumptions of the TMDL, in lieu of adopting a redundant program.

4) If a solution to an impairment is being implemented by a non-regulatory action of another entity, and the Regional Water Board finds that the solution will actually correct the impairment, the Regional Water Board may certify that the non-regulatory action will correct the impairment and if applicable, implement the assumptions of the TMDL, in lieu of adopting a redundant program.”

TMDLs have been adopted to address selenium in subsurface agricultural drainage discharges, and the selenium control program implements these TMDLs (see 1999, 2000, and 2001). The proposed Basin Plan amendments provide additional time for the Grassland Bypass Project to develop full capacity to manage subsurface agricultural drainage discharges so they are consistent with the adopted TMDLs.

5.5 Consistency with Central Valley Regional Water Quality Board Policies

The following are the Central Valley Water Board policies pertinent to the proposed amendments:

- Controllable Factors Policy
- Water Quality Limited Segment Policy
- Antidegradation Implementation Policy
- Watershed Policy

These policies and their relevance to the proposed water quality objectives and implementation plan are described in the following sections.

5.5.1 Controllable Factors Policy

On page IV-15.00 of the Basin Plan, the Central Valley Water Board’s Controllable Factors Policy states:

“Controllable water quality factors are not allowed to cause further degradation of water quality in instances where other factors have already resulted in water quality objective being exceeded. Controllable water quality factors are those actions, conditions, or circumstances resulting from human activities that may influence the quality of the waters of the State, that are subject to the authority of the State Water Board or Central Valley Water Board, and that may be reasonably controlled.”

The proposed Basin Plan amendments are consistent with the Controllable Factors Policy because the discharge addressed in the amendments is and will continue to be managed to achieve compliance with existing water quality objectives in the segments where the prohibition of discharge/ selenium water quality objective is already in effect, and aims to meet the objective in Mud Slough (north) and the San Joaquin River above the Merced River in a limited time span consistent with GBP and local goals of maintaining the viability of farming in the area.

5.5.2 Water Quality Limited Segment Policy

On page IV-15.00 of the Basin Plan, the Central Valley Water Board’s Water Quality Limited Segment Policy states:

“Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment.”

The proposed Basin Plan Amendments do not alter existing annual or monthly pollutant load allocations. The amendments will, however, allow discharges in excess of the selenium objective to occur for a limited time in order that the drainage management system can be completed while still providing drainage service to the agricultural operations in the Project area. Load limits in the Basin Plan will be unaffected by the proposed amendments.

5.5.3 Antidegradation Implementation Policy

Consistency of the proposed Basin Plan amendments with the federal and state antidegradation policies is discussed in Section 5.1.

5.5.4 Watershed Policy

On page IV-21.00 of the Basin Plan, the Central Valley Water Board’s Watershed Policy states:

“The Regional Water Board supports implementing a watershed based approach to addressing water quality problems. The State and Regional Water Boards are in the process of developing a proposal for integrating a watershed approach into the Board's programs. The benefits to implementing a watershed based program would include gaining participation of stakeholders and focusing efforts on the most important problems and those sources contributing most significantly to those problems.”

The proposed Basin Plan amendments allow the Bureau and Authority additional time to fully develop the regional drainage management system in the Grasslands subbasin. The GBP has broad local stakeholder support, evidenced in over a decade of continuous water quality improvement (see Figures 3 and 4) the amendments are therefore consistent with the Watershed Policy.

SELECTED REFERENCES

Section 19 of the EIS/EIR lists materials used to prepare the environmental study. This staff report utilized the following materials, some of which also appear in the EIS/EIR reference list:

Selenium Control Program documents and links

California Regional Water Quality Control Board, Central Valley Region, [Resolution No. 96-147](#) Amending the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins to Address the Control of Agricultural Subsurface Drainage, (1996 Basin Plan amendment)

California Regional Water Quality Control Board, Central Valley Region, Order No. 5-01-234 (2001 WDRs for GBP),
www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/fresno/5-01-234.pdf

California Regional Water Quality Control Board, Central Valley Region, Revised Monitoring and Reporting Program No. 5-01-234 (2005 MRP for GBP),
www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/fresno/5-01-234-mrp-rev2.pdf

California Regional Water Quality Control Board, Central Valley Region, Total Maximum Daily Load for Selenium in the Lower San Joaquin River, Aug 2001,
http://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/central_valley_projects/san_joaquin_se/se_tmdl_rpt.pdf

California Regional Water Quality Control Board, Central Valley Region, Selenium TMDL for Grassland Marshes, April 2000,
http://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/central_valley_projects/grasslands_se/grasslands_se_tmdl.pdf

California Regional Water Quality Control Board, Central Valley Region, Selenium TMDL for Salt Slough, 1999,
http://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/central_valley_projects/salt_slough_se/salt_slough_se_tmdl.pdf

Grassland Area Farmers and San Luis & Delta-Mendota Water Authority, August 1997, GBP Storm Event Management Plan,
www.waterboards.ca.gov/centralvalley/water_issues/grassland_bypass/storm_event_plan.pdf

Grassland Bypass Project, 2010-2019 Environmental Impact Statement / Environmental Impact Report, December 2008; Biological Opinion and Record of Decision,
www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=3513

Grassland Bypass Project/Selenium Control Program webpage
http://www.waterboards.ca.gov/centralvalley/water_issues/grassland_bypass/

Grassland Bypass Project Annual, Monthly and Quarterly Reports
<http://www.sfei.org/grassland/reports/gbppdfs.htm>

Grassland Bypass Project monitoring sites and provisional data:
www.waterboards.ca.gov/centralvalley/water_issues/water_quality_studies/surface_water_ambient_monitoring/sjr_swamp.shtml

San Joaquin River Water Quality Improvement Project (SJRIP) Natural Resources Project Inventory information sheet,
www.ice.ucdavis.edu/nrpi/project.asp?ProjectPK=10009

CEQA

California Environmental Quality Act, general information page,
www.ceres.ca.gov/ceqa/

California Environmental Quality Act, Greenhouse Gas Emissions information page,
www.opr.ca.gov/index.php?a=ceqa/

Other

California Regional Water Quality Control Board, Central Valley Region, *Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Salt and Boron Discharges into the Lower San Joaquin River*,
http://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/central_valley_projects/vernalissaltboron/index.shtml

Central Valley Salinity Alternatives for Long-Term Sustainability information pages,
www.waterboards.ca.gov/centralvalley/water_issues/salinity (the Board's site for technical information on salinity management and archives of the first two years of the CV-SALTS initiative); and www.cvsalinity.org (ongoing stakeholder committee work and Central Valley Salinity Coalition news)

Westside Regional Drainage Plan, May 2003,
www.waterboards.ca.gov/centralvalley/water_issues/salinity/programs_policies_reports/westside_regional_drainage_plan_may2003.pdf

Environmental Checklist

I. Background

Project Title: Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins to address selenium control in the San Joaquin River Basin

Contact Person: Gail Cismowski

Project Description: The project (Basin Plan amendments) allows irrigators in the Grassland subarea additional time to complete the regional drainage management system to gain full control of agricultural subsurface drainage discharges and develop a long-term stormwater-only management plan.

II. Environmental Impacts

The environmental factors checked below could be potentially affected by this project. See the checklist on the following pages for more details.

- | | | |
|--|---|--|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology/Soils |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards & Hazardous Materials | <input checked="" type="checkbox"/> Hydrology/Water Quality |
| <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise |
| <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Transportation/Traffic | <input type="checkbox"/> Utilities/Service Systems | <input checked="" type="checkbox"/> Mandatory Findings of Significance |

1. AESTHETICS. Would the project:

a) Have a substantial adverse effect on a scenic vista?				X
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?				X
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?				X

The project (a time extension) allows continuation of agricultural management practices currently carried out in the area. The project will cause no change to the aesthetic value of the affected area.

2. AGRICULTURAL AND FOREST RESOURCES. In determining whether impacts to agricultural resources are significant environmental impacts, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping & Monitoring Program of the California Resources Agency, to non-agricultural uses?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined by Public Resources Code section 4526)?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X
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The Basin Plan amendments will have an overall beneficial impact on the agricultural resources in the project area, allowing the dischargers additional time to complete projects that will ultimately maintain groundwater elevations and soil salinity concentrations at levels conducive with continued crop production. This is consistent with the General Plans of the affected counties. Adoption of the proposed Basin Plan amendments will not have an adverse impact on agricultural resources.

3. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?				X
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?				X
c) Expose sensitive receptors to substantial pollutant concentrations?				X
d) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?				X
e) Create objectionable odors affecting a substantial number of people?				X

The project (a time extension) will effect no change to agricultural management practices currently carried out in the area. The project will have no impact to the air resources of the affected area relative to no action or existing conditions.

4. BIOLOGICAL RESOURCES. Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the DFG or USFWS?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the DFG or USFWS?		X		
c) Have a substantial adverse effect on federally-protected wetlands as defined by Section 404 of the federal Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption or other means?		X		
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory corridors, or impede the use of native wildlife nursery sites?				X
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

The Basin Plan amendments will have a less than significant impact on wildlife, including special status species with the incorporated mitigation. Water quality objectives for the wetland water supply channels, Salt Slough and the San Joaquin River below the Merced River set to protect biological resources remain in effect. Mitigation for impacts to Mud Slough biota have been negotiated with California Department of Fish and Game and US Fish and Wildlife, and include development of mitigation habitat and a fresh (non-seleniferous) water supply; and supplemental mitigation whereby the Grassland Area Farmers will pay a fee per pound of attributable selenium discharge into an account set aside for habitat enhancements if drainage discharge persists past a negotiated deadline.

The Basin Plan amendments will not impact wildlife movement or impede the use of native wildlife nursery sites, nor will it trigger any changes to the practices currently used to minimize and mitigate wildlife exposure in the drainage reuse

area and drainage conveyance channels. If adequate and timely mitigation is not provided in accordance with the 2010-2019 "Agreement for Continued Use of the San Luis Drain", the Board can immediately institute the prohibition of discharge. The amendments will not conflict with local policies or ordinances or an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.

5. CULTURAL RESOURCES. Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?				X
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X
d) Disturb any human remains, including those interred outside of formal cemeteries?				X

The amendments will trigger no land disturbance or other new activity which might change agricultural or wildlife management practices currently carried out in the area. No historical resources, paleontological resources, unique geologic features or human remains have been found in the area.

6. GEOLOGY and SOILS. Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				X
i) Rupture of a known earthquake fault, as delineated in the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines & Geology Special Publication 42.				X
ii) Strong seismic ground shaking?				X
iii) Seismic-related ground failure, including liquefaction?				X

iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?				X
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?				X
d) Be located on expansive soils, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				X
e) Have soils incapable of adequately supporting the use of septic tanks or alternate wastewater disposal systems where sewers are not available for the disposal of wastewater?				X

The amendments will have no impact on geologic resources. The proposed time extension will trigger no change to agricultural management practices currently carried out in the area, which includes on-farm tailwater recycling: a practice that minimizes loss of topsoil and soil erosion. Soil stability will be unaffected and there is no building construction or septic or wastewater disposal system associated with the amendments.

7. GREENHOUSE GAS EMISSIONS -- Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?				X
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?				X

If the dischargers choose to construct a drainage treatment facility during the term of the proposed time extension, there would likely be an increase in energy use, which could potentially result in additional greenhouse gas emissions, which might or might not exceed some threshold of significance; however, such a facility would be subject to its own environmental study.

8. HAZARDS and HAZARDOUS MATERIALS. Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				X
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b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?				X
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school?				X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or to the environment?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X

Selenium waste is classed as hazardous waste if it meets or exceeds > 1000 ppb Se. As a point of reference, selenium concentrations in agricultural subsurface drainage at the terminus of the San Luis Drain are typically between 10 - 70 ppb. There is a possibility that sediments in the San Luis Drain will be found to exceed the threshold for hazardous waste classification for selenium, but the amendments will not affect the requirements already in place for monitoring, reporting, permitting, removal, management and acceptable disposal of hazardous waste in general or San Luis Drain sediments in particular.

The amendments will not trigger changes to the existing system of roads and conveyance channels so it would have no impact on emergency response or emergency evacuation, nor would it increase fire danger to humans, structures or the environment.

9. HYDROLOGY and WATER QUALITY. Would the project:

a) Violate any water quality standards or waste discharge requirements?		X		
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?				X
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?				X
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?				X
f) Otherwise substantially degrade water quality?				X
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				X
i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?				X

j) Inundation by seiche, tsunami, or mudflow?				X
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The proposed time extension will allow a limited amount of drainage to continue to be discharged from the project area while the dischargers complete development of drainage management projects; potentially resulting in violation of the selenium water quality objective in Mud Slough (north) and the San Joaquin River above the Merced River. However, relative to current conditions, water quality will continue to improve. The amendments will not alter existing selenium objectives or the prohibition of discharge already in effect for the wetland water supply channels, Salt Slough and the San Joaquin River below the Merced River. The amendments will result in a temporally- and spatially-limited impact to a single slough and river reach that will be offset by the avoidance of likely adverse impacts to project area water and soil resources.

The amendments will not result in changes in land use, so it is likely that groundwater will continue to be salinized in the irrigated area. Irrigation in arid climates allows soluble salts to move through the soil profile and into groundwater; therefore, groundwater quality changes are to be expected under land used for irrigated agriculture. Continuation of irrigated agriculture in the Project area is consistent with the project goal of maintaining the viability of farming in the area, and the relevant county general plans aimed at agricultural land preservation; but at this time, there is no clear solution to correcting groundwater quality changes stemming from irrigation activities. A long-term strategy for managing salinity in surface water and groundwater on a regional basis is being developed through the Board's CV-SALTS program (Central Valley Salinity Alternatives for Long Term Sustainability). Several selenium control program stakeholders including the San Joaquin Valley Drainage Authority, the Bureau of Reclamation, the Grassland Bypass Project oversight agencies and others in the basin participate in this effort.

10. LAND USE AND PLANNING. Would the project:

a) Physically divide an established community?				X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				X
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				X

The amendments gives area farmers time to continue to farm in a manner consistent with wildlife protection in the nearby wetland areas while continuing to develop full drainage management capacity. It has no impact on land use and planning.

11. MINERAL RESOURCES. Would the project:

a) Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the State?				X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?				X

The time extension will trigger no change to the availability any mineral resource in the area.

12. NOISE. Would the project result in:

a) Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?				X
b) Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?				X
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				X
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing in or working in the project area to excessive noise levels?				X

f) For a project within the vicinity of a private airstrip, would the project expose people residing in or working in the project area to excessive noise levels?				X
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The time extension will trigger no change to the noise levels in the area.

13. POPULATION AND HOUSING. Would the project:

a) Induce substantial population growth in an area either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

The time extension will trigger no change to population growth or housing opportunities in the area. By granting additional time to area farmers gain complete control over drainage management, the amendments could potentially have a stabilizing effect on the local farming population through avoidance of the adverse economic effects of lost farm productivity due to a rising water table (the No Project alternative).

14. PUBLIC SERVICES. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service rations, response times or other performance objectives for any of the public services:

a) Fire protection?				X
b) Police protection?				X
c) Schools?				X
d) Parks?				X
e) Other public facilities?				X

The time extension will trigger no change to the public services available in the area.

15. RECREATION. Would the project:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?				X

The amendments gives area farmers time to continue to farm in a manner consistent with wildlife protection in the nearby wetland areas while continuing to develop full drainage management capacity. The mitigation actions negotiated with the wetland managers for continued use of Mud Slough (north) could expand recreational opportunities in the area (primarily wildlife viewing and duck hunting) but this expansion will not have an adverse physical effect on the environment.

16. TRANSPORTATION / TRAFFIC. Would the project:

a) Exceed the capacity of the existing circulation system, based on an applicable measure of effectiveness (as designated in a general plan policy, ordinance, etc.), taking into account all relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				X
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?				X
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X

e) Result in inadequate emergency access?				X
f) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				X

The time extension will trigger no change to land or air traffic, emergency access, parking capacity, or alternative transportation.

17. UTILITIES AND SERVICE SYSTEMS. Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?				X
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?				X
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				X
g) Comply with federal, state, and local statutes and regulations related to solid waste?				X

The amendments will allow the dischargers additional time to develop full control of agricultural subsurface drainage while continuing current agricultural activities. The dischargers will be allowed to continue to discharge untreated agricultural subsurface drainage from the project area to Mud Slough (north) for up to an additional nine years, three months. The project includes continued reliance on the GBP Storm Event Plan to deal with high rainfall events. The project operators

acknowledge that the Plan will need to be updated before the 2010 Use Agreement between the San Luis & Delta-Mendota Water Authority and the US Bureau of Reclamation for use of the San Luis Drain terminates, and the amendments allow sufficient time for development of a regional stormwater-only management plan.

The time extension will have no impact on the availability of water supplies and the project does not generate municipal wastewater or solid waste.

18. MANDATORY FINDINGS OF SIGNIFICANCE.

<p>a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?</p>			<p>x</p>	
<p>b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)</p>			<p>x</p>	
<p>c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?</p>				<p>x</p>

The amendments will allow degradation in the six-mile stretch of Mud Slough (north) and the San Joaquin River above the Merced River that will continue to receive drainage water to continue for up to an additional nine years, three months longer than under the No Project Alternative; however aggregated impacts to wildlife and agricultural beneficial uses in the Project area will be considerably less than those anticipated without a time extension. Agricultural subsurface drainage volumes will decrease yearly while the dischargers are increasing the project's drainage management capacity. Mitigation for project impacts (described in detail in Appendix L to the 2010 Use Agreement) include provision of a reliable fresh water supply to create 95.3 acres of wetland habitat and creation of 31.6 acres of wetland marsh habitat on USFWS lands. Supplemental mitigation consisting of a fee per pound of discharged selenium will be implemented beginning in 2015. Beyond the continued impacts to Mud Slough and the limited river segment, the amendments will result in no change that could

be considered a mandatory finding of significance, but the dischargers have agreed to participate in the CV-SALTS initiative as it develops a regional salt and nitrate management plan, since a large part of the region's long-standing salt concerns are closely tied to drainage management.

