

### 2.3.2.5 Levee System Integrity Program

*Replace current wording with the following:*

The Levee System Integrity Program has 7 elements within two distinct components (the Delta and Suisun Marsh).

#### Delta Component:

No change to five elements listed.

#### Suisun Marsh Component:

Develop alternative levee standards for Suisun Marsh than those mandated for Delta under AB 360.

No seismic risk assessment would need to be done prior to implementation of levee modifications.

The Suisun Marsh levee plan would remain unchanged among the proposed alternatives. Overall the benefits of the Suisun Marsh Levee System Integrity Plan are:

Reduction in catastrophic failure of Marsh levees due to high outflow events.

Managed seasonal wetlands would be protected from inundation.

Provides protection for State Water Project infrastructure from catastrophic events.

Increased reliability of maintaining critical wildlife and waterfowl habitats within the Marsh.

Potential concerns of the Levee System Integrity Program include:

#### Delta:

No change to list.

#### Suisun Marsh:

Levee modifications within the Suisun Marsh fall within a U.S. Army Corps of Engineers' permit that restricts levee work to 5,000 linear feet of work per year.

Levee modifications would need to be coordinated in order to avoid conflicts with ERPP objectives and goals established in the Suisun Marsh.

Levee modifications may displace housing and other structures that are located near or on the levees.

Levee modifications will cause the loss of both seasonal and permanent wetlands.

**Table 3-1. Summary of Environmental Consequences of CALFED Program Actions (page 8 of 10)**

*Add the following information after information that is in Table for Delta Levee Program.*

Environmental Resource Category	Environmental Consequences of CALFED Bay-Delta Program Alternatives				
	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	Other Programs
Flood Control Resources	<p><b>Delta:</b> No change to existing wording</p> <p><b>Suisun Marsh:</b>  Flood protection and levees would continue to decline with levee repairs being made on an emergency basis.</p>	<p><b>Delta:</b> No change to existing wording</p> <p><b>Suisun Marsh:</b>  Existing infrastructure and private property would benefit from increased levee protection.</p>	<p><b>Delta:</b> No change to existing wording</p> <p><b>Suisun Marsh:</b>  Existing infrastructure and private property would benefit from increased levee protection.</p>	<p><b>Delta:</b> No change to existing wording</p> <p><b>Suisun Marsh:</b>  Existing infrastructure and private property would benefit from increased levee protection.</p>	<p><b>Delta and Suisun Marsh:</b> No change to existing wording</p>
Water Quality		Water quality would be maintained in the Delta with the modified levees protecting the integrity of tidal and seasonal wetlands.	Water quality would be maintained in the Delta with the modified levees protecting the integrity of tidal and seasonal wetlands.	Water quality would be maintained in the Delta with the modified levees protecting the integrity of tidal and seasonal wetlands.	

Add row to Table for each alternative that incorporates the Suisun Marsh and associated values.

**Table 5-2. Estimated Acreage of important Farmland impacted by program actions.**

Alternative	Region	ERPP			Levees			Storage			Conveyance			Water Quality	Total
		P	S	U	P	S	U	P	S	U	P	S	U		
Alt 1	Suisun Marsh	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt 2	Suisun Marsh	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt 3	Suisun Marsh	0	0	0	0	0	0	0	0	0	0	0	0	0	0

### 5.2.3 Levee System Integrity

*First paragraph this section should remain the same.*

Put the word "Delta" above paragraph that begins with "Levee reconstruction would require..."

*At the end of this section add the following wording.*

#### Suisun Marsh

Levee reconstruction in the Suisun Marsh would need to be done on approximately 122 miles of exterior levees. These levees would need to be modified to standards established after a thorough examination of current levee conditions is accessed. However, if you assume a minimum conditions (12 foot top with a borrow ditch ten feet from interior toe) it is anticipated that at a minimum, approximately 294 acres of existing habitat will be altered. At maximum, approximately 734 acres of habitat will be altered. Most of this habitat will be revegetated naturally, however care will need to be taken to discourage non-native plants from revegetating in areas disturbed by levee rehabilitation.

Please insert the following information in the Table listed below.

**Table 6.1-1. Summary of Environmental Impacts Related to Surface Water Resources (page 3 of 8).**

Impact Issues	Alternative 1			Alternative 2				Alternative 3				
	1A	1B	1C	2A	2B	2D	2E	3A	3B	3E	3H	3I
<b>Bay Region</b>												
<b>Surface Water Supply and Management</b>												
Levee Integrity Program - increased reliability of Suisun Marsh levees would facilitate better control of salinity standards in the marsh.	+	+	+	+	+	+	+	+	+	+	+	+

**Page 6.1-13 - Levee System Integrity**

Add the word Delta before existing paragraphs.

Add the following words to end of existing section.

Suisun Marsh

Minimal sediment loading is expected to occur as a result of levee improvements in the marsh. Construction materials will be drawn from the interior side of the levee and placed to make levee improvements. Improvements to the levee system would benefit the existing management practices in the marsh and prevent the unplanned inundation of seasonal wetlands.

**Page 6.1-49**

Add the following paragraph to the Bay Region Section after Storage and Conveyance.

Bay Region

Levee System Integrity. Channel geometry may be altered slightly when levee improvements are made to the exterior slopes. Borrow material will typically be acquired from the interior portion of the island. Channel depth may increase slightly as levees are standardized to a uniform height and structure. No alteration to channel hydraulics is expected.

**Page 6.1-62**

*Add the following section after Water Quality.*

Bay Region

Levee System Integrity. Levee rehabilitation within the Suisun Marsh is restricted to 5,000 linear feet per year under an existing U.S. Army Corps of Engineers operating permit. The turbidity load is expected to be minimal, since material used to rehabilitate the levee is removed from the interior side of the levee.

**Page 6.3-3**

*Add the following paragraph to the end of the existing section.*

Currently the Suisun Marsh is a combination of managed wetlands and tidally influenced areas. These managed wetlands rely upon the ability to limit the influx of water onto the property to control soil salinity levels. Levee failure, particularly during the leaching cycle, will result in increased soil salinities which adversely affects the plant communities in the managed wetlands.

**Page 6.3-22**

*Add Levee System Integrity paragraph to the Bay Region section after the Water Quality section.*

Levee System Integrity. Within the Suisun Marsh levee improvements would occur on areas that are primarily seasonally managed wetlands. Levee improvements would benefit managed wetlands and prevent the catastrophic failure and unplanned conversion of lands to tidally influenced lands.

**Page 6.4-3**

**Levee System Integrity**

*Add the following sentence after the existing paragraph.*

Within the Suisun Marsh noise levels are expected to increase related to levee construction activities. No change in noise levels is expected as a result of levee modifications.

**Page 6.4-6**

*Add this paragraph after the first paragraph in the Bay Region Section.*

Levee repairs in the Marsh would require that surveys be conducted prior to construction to determine the presence of nesting birds such as clapper rails. All construction activities would be regulated under an existing U.S. Army Corps of Engineers' operating permit.

**Page 6.6-11**

*Add the following paragraph after storage and conveyance section under the Bay Region.*

Levee System Integrity. Levee repairs would cause some reduction in air quality, however these effects would be temporary.

**Page 7.1-39**

*Add the following sentences to the end of the existing Levee System Integrity paragraph in the Bay Region Section.*

Alteration of aquatic habitats will occur as a result of levee maintenance activities, however, these impacts will be relatively minor and temporary. Levee maintenance activities in the Suisun Marsh are regulated under a U.S. Army Corps of Engineers' permit to 5,000 linear feet of construction per year. Levee maintenance activities would need to be coordinated with ERPP targets and goals.

**Page 7.2-29**

*Add the following paragraph before the section on Water Transfers in the Bay Region.*

Levee System Integrity. The temporary loss of habitat would occur on the interior portion of the island as borrow material is retrieved to make levee repairs. In some areas tules and other emergent vegetation would be partially impacted as construction activities occur. These losses would be temporary and would be replaced naturally. Losses to native plant species present in the construction area may occur and can be mitigated. Prior to any construction activities surveys would need to be done for wildlife species, particularly nesting birds such as California clapper rail. Efforts will need to be taken to assure that non-native weeds, such as pepperweed, do not become established in areas disturbed by construction activities.

**Page 8.1-28**

*Add the following sentence to the Bay Region section at the end of the second paragraph in that section.*

No agricultural land loss is anticipate in the Suisun Marsh as a result of levee modification activities. The greatest land loss will be to seasonal wetlands adjacent to the interior portion of the levee.

**Page 8.3-27**

*Add the following paragraph to the Bay Region section after the Water Use Efficiency section.*

Levee System Integrity

Levee repairs would occur primarily on private lands that do not allow for public access. Some levee repairs would occur in areas where public fishing opportunities exist, however these impacts would be minimal and temporary. Some private residence may be impacted by levee repairs. Selected structures may need to be moved or access alternatives developed.

**Page 8.4-3**

*Add the following sentence to the following section 8.4.1 Affected Environment/Existing Conditions, Non-project levees, after "...flood control system."*

Within the Suisun Marsh about 230 miles (95%) of the levees fall within the non-project levee category.

**Page 8.4-17**

*Add the following paragraph to the Bay Region Section after the existing paragraph.*

Suisun Marsh. Under the no action alternative levees within the Suisun Marsh would continue to deteriorate and result in catastrophic floods like those that occurred in early 1998. The failure of levees in the Suisun Marsh occurred as a result of extremely high outflow conditions in conjunction with high incoming tide events. Together these events created conditions that topped levees and threatened housing, State Water Project infrastructure, and both terrestrial and aquatic habitats.

**Page 8.4-23**

*Replace the current wording in the Bay Region Section with the following wording.*

Levee System Integrity. Maintaining a constant levee standard in the Suisun Marsh would insure that private houses, roads, State Water Project

infrastructure, and critical habitat for waterfowl are protected against flood events due to levee failure or over-topping. Levee modifications will not only protect these structures, but it will provide for improved water quality conditions in the western Suisun Marsh.

A system wide evaluation will need to be completed to assess high priority areas and actual cost of levee modifications within the Marsh. These improvements, made now, will reduce the likelihood of future catastrophic events.

**Page 8.9-11**

*Add the following sentence to the end of the Bay Region section.*

**Levee System Integrity**

The visual effects of levee modifications in the Suisun Marsh will be short term with revegetation occurring naturally within the first few months following levee improvements. Effort will need to be taken to prevent the non-native plants from becoming established in areas that are disturbed by levee improvements. It will be necessary for the levee program and ERPP efforts to coordinate activities to prevent levee improvement from being negated by ERPP actions to remove levees and create tidal wetlands.

**Page 8.9-13**

*Add the following bullet to the list of mitigation strategies for visual resources.*

- Areas disturbed by levee improvements will need to be monitored to prevent the reintroduction of non-native plants.

**Page 8.10-5**

*Add the following paragraph to the end of the Levee System Integrity section.*

Within the Suisun Marsh the Levee System Integrity Program could displace some low income residences in areas where the houses are on or near the levees. Although these houses may be displaced, the Suisun Marsh Levee Program would protect critical waterfowl and terrestrial species habitats from catastrophic flooding.

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