

## Module SV-2

# Moderate Levee Protection

## Physical and Structural Features

### Flood Protection and Levee Stabilization

Activities	Benefits
<ul style="list-style-type: none"> <li>• Provide a moderate level of protection and stabilization of Delta levees through levee maintenance and stabilization actions</li> </ul>	<ul style="list-style-type: none"> <li>• Manages vulnerability of Delta land use and infrastructure</li> <li>• Manages vulnerability of Delta water supply to salinity intrusion</li> <li>• Manages vulnerability of Delta ecosystem functions</li> <li>• Provides opportunities for habitat restoration</li> </ul>
<ul style="list-style-type: none"> <li>• Improve flood conveyance capacity of Delta channels through channel maintenance and improvements</li> </ul>	<ul style="list-style-type: none"> <li>• Manages vulnerability of Delta functions</li> <li>• Improves flood conveyance</li> <li>• Provides opportunities for habitat restoration</li> </ul>
Considerations	
<ul style="list-style-type: none"> <li>• Provide flood protection equivalent to Army Corps of Engineers PL 99 standard for these islands:                             <ul style="list-style-type: none"> <li>All critical western islands such as Jersey Island.</li> <li>Islands with important regional infrastructure (e.g., Highway 12) such as Terminous Island</li> <li>Islands with both valuable habitat and important regional infrastructure (e.g., transmission lines) such as Lower Roberts Island.</li> </ul> </li> <li>• Upgrade all other Delta levees to meet at least the Hazard Mitigation Plan (HMP) standards.</li> <li>• Integrate protection and stabilization of levees with Delta habitat restoration activities.</li> <li>• Provide stable funding mechanism for ongoing levee and habitat monitoring, maintenance, and management.</li> <li>• Improvements to channels include dredging for sediment removal in channels with restricted flood capacity.</li> </ul>	

## Institutional and Policy Features

### Management of System Vulnerability

Activities	Benefits
<ul style="list-style-type: none"> <li>• Establish and fund an emergency levee management plan to respond to levee failures</li> </ul>	<ul style="list-style-type: none"> <li>• Provides resources to protect Delta functions through proactive and preventative measures</li> </ul>
<ul style="list-style-type: none"> <li>• Establish landside buffer zones adjacent to levees on islands with deep peat soils</li> </ul>	<ul style="list-style-type: none"> <li>• Provides increase in stability of Delta levees and reliability of Delta functions by reducing subsidence adjacent to levees</li> <li>• Could be used to provide habitat benefit</li> </ul>

**Considerations**

- Determine extent and cost effectiveness of levee management programs and buffer zones.
- Buffer strip approximately 100 to 150 yards wide. Buffer strip could be used as part of subsidence management program.

## **Preliminary Assessment**

### ***Benefits***

**Ecosystem Quality** —

**Water Supply** —

**Water Quality** —

**System Vulnerability** — This module reduces the vulnerability of Delta functions to catastrophic loss. Improvement of levees around all critical western islands protects the island land uses and Delta water supply from salinity intrusion due to island failure. Improvement of levees on other islands protects important regional infrastructure and valuable habitat. Setback levees, stabilizing berms, and landside buffer zones increase levee stability, and reduce flood danger to provide for continued protection of existing Delta functions as an integrated resource system. These efforts also provide opportunities for integrating habitat restoration activities.

### ***Constraints and Concerns***

Delta islands provided basic levels of protection remain vulnerable to failure such as the Summer 1994 inundation of Little Mandeville Island.