

## POLICIES AND RECOMMENDATIONS

These policies and recommendations are based on the Council's core strategies for reducing flood risks in the Delta, which are:

- Improve emergency preparedness and response
- Finance and implement flood management activities
- Prioritize flood management investment
- Improve residential flood protection
- Protect and expand floodways, floodplains, and bypasses
- Integrate Delta levees and ecosystem function
- Limit liability

Reducing flood risks also relies on locating urban development in the Delta's cities where levees are stronger, as discussed in Chapter 5, and retaining rural lands for agriculture, so that development in the most floodprone areas is minimized.

### Improve Emergency Preparedness and Response

To effectively and reliably reduce risks to people, property, and State interests in the Delta, a multifaceted strategy of coordinated emergency preparedness, appropriate land use planning, and prioritized investment in flood protection infrastructure is necessary (Water Code sections 85305(a) and 85306). Federal, State, and local governments—and Californians—must be prepared for a variety of emergency situations.

The recommendations prepared by the Sacramento-San Joaquin Delta Multi-Hazard Coordination Task Force will likely play an important role in planning efforts for the Delta, and will be considered by the Council for incorporation in future updates of the Delta Plan.

#### Problem Statement

*Levee failures and flooding can and will place human life and property in danger, and can have potentially significant implications for the State's water supply and infrastructure, and the health of the Delta ecosystem. Appropriate emergency*

*preparedness and response planning and implementation activities need to be initiated.*

#### Policies

No policies with regulatory effect are included in this section.

#### Recommendations

##### RR R1. Implement Emergency Preparedness and Response

The following actions should be taken **by January 1, 2014**, to promote effective emergency preparedness and response in the Delta:

- *Responsible local, State, and federal agencies with emergency response authority should consider and implement the recommendations of the Sacramento-San Joaquin Delta Multi-Hazard Coordination Task Force (Water Code section 12994.5). Such actions should support the development of a regional response system for the Delta.*
- ~~*In consultation with local agencies, the California Department of Water Resources should expand its emergency stockpiles to make them regional in nature and usable by a larger number of agencies in accordance with California Department of Water Resources' plans and procedures. The California Department of Water Resources, as a part of this plan, should evaluate the potential of creating stored material sites by "over-reinforcing" west Delta Levees.*~~
- *Materials should be stockpiled in appropriate locations to make post-disaster repairs of breaches in levees along the water supply reliability corridor identified in the Delta Plan's Figure 7-6, the western islands important to protection of water quality, and other levees, to complement improvement of levees as provided in RR P1.*

- *Local levee-maintaining agencies should consider developing their own emergency action plans, and stockpiling rock and flood-fighting materials. California Department of Water Resources should work with local levee-maintaining agencies to ensure the adequacy of the emergency action plans by levee-maintaining agencies as well as to ensure that sufficient stockpiling of rock and flood-fighting materials are available in the Delta in order to respond to and quickly and effectively recover from major flood or earthquake disasters.*
- *State and local agencies, and regulated utilities that own and/or operate infrastructure in the Delta should prepare coordinated emergency response plans to protect the infrastructure from long-term outages resulting from failures of the Delta levees. The emergency procedures should consider methods that also would protect Delta land use and ecosystem.*
- *The Army Corps of Engineers should revise the guidelines for its Rehabilitation and Inspection Program (PL 84-99) to fully account for the economic value of reliable water supplies and transportation services when considering whether benefits of the post-disaster repair of Delta levees exceeds the repair costs. To facilitate this consideration, priority should be given to research to quantify the economic value of reliable water supplies and transportation services protected by the Delta's levees, including consideration of the levees' contributions to the protection of water quality, water supply infrastructure, and the conveyance of water for export through levee-lined Delta channels.*

## Finance and Implement Local Flood Management Activities

The responsibility for securing funding for Delta levee maintenance, repairs, and improvements lies with the numerous local levee-maintaining agencies (primarily reclamation districts). Funding is generated through property assessments of local landowners and also is provided by the State under programs administered by DWR (the Delta Levees Special Flood Control

Projects and Delta Levees Maintenance Subventions programs). These programs provide State matching funds for addressing Delta flood risk; however, many other entities that benefit from flood risk management are not assessed, nor do they contribute to maintenance and upkeep of Delta levees, including owners of regional infrastructure that crosses the Delta. The duty of providing for Delta flood risk management should be borne by all entities benefitting from these actions, and an equitable methodology of defining and apportioning assessments should be developed and implemented.

Local levee-maintaining agencies have managed the financing and ongoing maintenance, rehabilitation, and repair of Delta levees, and have improved the levels of levee integrity, reducing overall Delta flood risk. Although financial assistance has been provided by the State over several decades, these programs have most recently been funded exclusively through State general obligation bond financing, which faces an uncertain future. The development of an alternative funding mechanism and authority would provide for a more stable, long-term funding approach in which local participation by all beneficiaries of flood risk management is more broadly incorporated. Propositions 218 (1996) and 26 (2010) raised the approval thresholds for new fees and taxes; these thresholds may make it more difficult for a proposed regional assessment district to gain revenue authority.

The establishment of a regional flood risk management district with fee assessment authority could address a variety of Delta flood risk-related activities, including levee maintenance and improvements; regional flood management planning; flood facilities inspections; data collection; risk notification; and emergency preparedness planning, response, and mitigation. Establishing a more centralized and responsive entity could provide a mechanism for addressing issues at the individual district level and for the Delta region overall for the long term.

### Problem Statement

*No mechanism exists for ensuring that costs of levee maintenance are borne by all beneficiaries. Current financing of levee operations and maintenance is not well coordinated, and future funding sources are uncertain. Financing of local levee operations, maintenance, emergency preparedness and response, and related data collection and reporting efforts would benefit from greater coordination and integration.*

## Policies

No policies with regulatory effect are included in this section.

## Recommendations

### RR R2. Finance Local Flood Management Activities

#### **NEED DPC LANGUAGE 9/21**

The Legislature should create a Delta Flood Risk Management Assessment District with fee assessment authority (including over State infrastructure) to provide adequate flood control protection and emergency response for the regional benefit of all beneficiaries, including landowners, infrastructure owners, and other entities that benefit from the maintenance and improvement of Delta levees, such as water users who rely on the levees to protect water quality.

This district should be authorized to:

- Identify and assess all beneficiaries of Delta flood protection facilities.
- Develop, fund, and implement a regional plan of flood management for both project and nonproject levees of the Delta, including the maintenance and improvement of levees, in cooperation with the existing reclamation districts, cities, counties, and owners of infrastructure and other interests protected by the levees.
- Require local levee-maintaining agencies to conduct annual levee inspections per the California Department of Water Resources subventions program guidelines, and update levee improvement plans every 5 years.
- Participate in the collection of data and information necessary for the prioritization of State investments in Delta levees consistent with RR P1.
- Notify residents and landowners of flood risk,

personal safety information, and available systems for obtaining emergency information before and during a disaster on an annual basis.

- Potentially implement the recommendations of the Sacramento-San Joaquin Delta Multi-Hazard Coordination Task Force (Water Code section 12994.5) in conjunction with local, State, and federal agencies, and maintain the resulting regional response system and components and procedures on behalf of SEMS jurisdictions (reclamation district, city, county, and State) that would jointly implement the regional system in response to a disaster event.
- Identify and assess critical water supply corridor levee operations, maintenance, and improvements.

### RR R~~(xx)~~3. Require Adequate Levee Inspections

In implementing Water Code 12987, the Central Valley Flood Protection Board should update its guidelines for the Delta Levees Maintenance Subventions Program to require local levee maintaining agencies participating in the program to annually inspect their Delta levees in accordance with DWR's guidelines for Local Agency Project and Nonproject Levee Maintenance Inspection (March 2016). Costs of inspections should be reimbursable through the Subventions Program.

### RR P~~(xx)~~R4. Acquire Easements to Reduce Subsidence

Improvements of levees in areas depicted in Figure 1 funded through the Delta Levees Special Projects Program shall include an easement over private property along the levee that will allow for the control and reversal of subsidence, unless the Department of Water Resources determines in writing that such an easement is infeasible or not desirable to maintain structural stability of the levee. The width of the easement shall be determined by the local maintaining agency's engineer, considering depth of peat, other site conditions, levee geometry and foundation conditions, and engineering judgement. The easement shall (1) restrict the use of the land to open-space uses, nontillable crops, the propagation of wildlife habitat, and other compatible uses, (2) provide full access to the local agency for levee maintenance and improvement purposes, and (3) allow the owner to retain reasonable rights of ingress and egress as

well as reasonable rights of access to the waterways for water supply and drainage. The local agency cost of acquiring the easements should be reimbursable through the applicable state levee funding program. Where easements are donated by local levee maintaining agencies or their landowners, the easements' value should be considered as contributing to the local cost share for the levee project.

#### **RR R(xx). Encourage Participation in the Corps of Engineers PL 84-99 Program**

If eligibility criteria for the Army Corps of Engineers Rehabilitation and Inspection Program (PL 84-99) are revised to better reflect Delta conditions and economic values, the Central Valley Flood Protection Board should revise its guidelines for the Delta Levees Maintenance Subventions Program so that participation in the PL 84-99 program becomes a precondition of eligibility for levee maintenance funding.

#### **RR R(xx)5. New State Funding for Non-structural Risk Reduction**

A hazard mitigation program, funded by the State, should be established to make grants to local governments and flood management agencies to support emergency preparedness actions, such as evacuation planning or repositioning of flood fight materials, and non-structural flood hazard mitigation actions, such as flood-proofing of public or private buildings or the purchase and removal of flood-prone structures.

#### **RR R(xx)6. Update Delta Levees Subvention Program's Cost-sharing Provisions**

- a) Update the Delta Levees Maintenance Subventions Program Deductible Provision. The Legislature should amend the Water Code section 12986(a)-(b) to adjust the current \$1000 per mile deductible amount to account for inflation since the provision was enacted in 1973. The deductible amount should be reevaluated periodically to reflect current inflation.

- b) Simplify Consideration of Local Levee Maintaining

Agencies' Ability to Pay for Levee Maintenance and Improvement. The Central Valley Flood Protection Board should revise its guidelines for the Delta Levees Maintenance Subventions Program to provide a simplified approach to the consideration of a local levee agency's ability to pay for the cost of levee maintenance or improvement, as required by Water Code 12986(a)(3).

#### **DP P3-R(XX). Provide Public Access on Appropriately-Located Delta Levees**

When using state funding to improve levees in the Delta that border urban areas and unincorporated Delta towns or intersect with state highways, the levee designs and associated land purchases should support public access, including bank fishing or pedestrian and bicycling trails, unless it is determined by the levee maintaining agency(LMA) that access is inconsistent with the LMA's flood protection duties or the protection of Delta agriculture and natural resources. Funds for the acquisition of interests in land dedicated to public access should be from sources other than State levee funding programs, as public access is a public benefit unrelated to flood risk management. Entities accepting responsibility for maintenance and liability of these public access areas, whether a public agency, non-profit organization or private entity, should be identified and acknowledge their intention to accept this responsibility prior to the acquisition of the interest in land. When improving levees with state funding, easements for public access, including bank fishing or trails for recreational hiking and bicycling, as appropriate, shall be obtained within urban areas and unincorporated Delta towns and adjoining the rights of way of State highways, except that easements shall not be obtained where, after an opportunity for meaningful public comments, it is determined that access is inconsistent with public safety or the protection of fragile Delta resources. Costs of acquisition shall be eligible for State funding, consistent with the cost share requirements and other provisions of the funding program. Dedicated accessways shall not be required to be opened to public use until a public agency or private association agrees to accept responsibility for maintenance and liability of the access way.

#### **RR R3R7. Fund Actions to Protect Infrastructure from Flooding and Other Natural Disasters**

- *The California Public Utilities Commission should immediately commence formal hearings to impose a reasonable fee for flood and disaster prevention on regulated privately owned utilities with facilities located in the Delta. Publicly owned utilities should also be encouraged to develop similar fees. The California Public Utilities Commission, in consultation with the Delta Stewardship Council, the California Department of Water Resources, and the Delta Protection Commission, should allocate these funds among State and local emergency response and flood protection entities in the Delta. If a new regional flood management agency is established by law, a portion of the local share would be allocated to that agency.*
- *The California Public Utilities Commission should direct all regulated public utilities in their jurisdiction to immediately take steps to protect their facilities in the Delta from the consequences of a catastrophic failure of levees in the Delta, to minimize the impact on the State's economy.*
- *The Governor, by Executive Order, should direct State agencies with projects or infrastructure in the Delta to set aside a reasonable amount of funding to pay for flood protection and disaster prevention. The local share of these funds should be allocated as described above.*

### **Prioritize Flood Management Investment**

~~A method is needed for prioritizing State funds for use in operating, maintaining, and improving Delta levees with a systemwide approach. Although the State has expended millions of dollars since the early 1970s on Delta levees, almost half of the Delta's acreage is not protected by levees that meet the HMP guidance today.~~

~~Efforts by landowners, reclamation districts, and other parties using local resources to perform levee upgrades, beyond the standards that may be funded by the State, are encouraged and would be consistent with the goal of reducing Delta flood risk. The Delta Reform Act provides that activities of the Council in determining priorities for State investments in Delta levees do not increase the State's liability for flood protection in the Delta or its~~

~~watershed.~~

Over the past four decades, Delta levees have been improved, principally paid for by the State and partially by reclamation districts. Delta Levees Maintenance Subventions program have helped improve levee maintenance on many islands. The record of declining flooding damage and testimony to the Council reflect these improvements. Additional strategies also need to be fully evaluated.

The Council's policy is to reduce flood risk in the Delta in a cost effective manner that meets A-meaningful State policy seeks to reduce flood risk in the Delta in ways that are achievable and cost effective. Simultaneously a rational flood protection policy must also serve the two coequal goals of California law: "...a more reliable water supply for California and protecting, restoring and enhancing the Delta ecosystem", achieved in a manner that protects and enhances the "unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place" (Public Resources Code section 29702)."

The Delta Reform Act of 2009 charges the Council to attempt to reduce risks to people, property, and State interests in the Delta (Water Code section 85305) by promoting: (1) Effective emergency preparedness, (2) Appropriate land use, and (3) Strategic levee investments. The Council is required to recommend in the Delta Plan priorities for investments in levee operation, maintenance, and improvements in the Delta, in consultation with the Central Valley Flood Protection Board (Water Code section 85306).

### **Problem Statement**

The Delta Reform Act (Water Code section 85306) requires the Delta Plan to recommend priorities for State investments in Delta levees, including project and nonproject levees. Currently, no comprehensive method exists to prioritize State investments in Delta levee operations, maintenance, and improvement projects. Without a prioritization methodology, the apportionment of public resources into levees may not occur in a manner that reflects a broader, long-term approach.

### **Policies**

**RR P1. Prioritization of State Investments in Delta**

**Levees and Risk Reduction**

- a) Pursuant to Water Code section 85306, Key priorities for interim funding include emergency preparedness, response, and recovery as described in paragraph (1), as well as Delta levees funding as described in paragraph (2).
- b) Delta Emergency Preparedness, Response, and Recovery: Develop and implement appropriate emergency preparedness, response, and recovery strategies, including those developed by the Delta Multi-Hazard Task Force pursuant to Water Code section 12994.5.
  - 1) The priorities shown in the following table are meant to guide budget and funding allocation strategies for levee improvements. The goals for funding priorities are all important, and it is expected that over time, the California Department of Water Resources must balance achievement of those goals. Except on islands planned for ecosystem restoration, improvement of nonproject Delta levees to the Hazard Mitigation Plan (HMP) standard may be funded without justification of the benefits. Improvements to a standard above HMP, such as that set by the U.S. Army Corps of Engineers under Public Law 84-99, may be funded as befits the benefits to be provided, consistent with the California Department of Water Resources' current practices and any future adopted investment strategy.

(a) The priorities listed below shall guide State discretionary investments in the improvement and major rehabilitation of Delta levees. As DWR selects levee improvement projects for funding through its levee funding programs, it should fund projects at the very high priority islands or tracts, subject to its consideration of the benefits, costs, engineering considerations, and other factors, before approving projects at high priority or other priority tracts. If available funds are sufficient to fully fund levee improvements at the very high priority tracts, then funds for improvements or major rehabilitation of levees on high priority islands and tracts may be provided, and after

those projects have been fully funded, then projects at other priority islands and tracts may be funded. Funding for maintenance of levees will continue to be available throughout the Delta where authorized by Water Code section 12980 et. seq.

The Department of Water Resources shall certify projects' consistency with this regulatory policy when its funding decisions are made and shall report annually to the Council about its decisions to award State funds for Delta levee improvements, including the location of each funded improvement, the priority of the affected islands or tract, the improvements funded, including the relevant levee improvement type, habitat mitigation or enhancement features, estimated reduction in levee fragility, expected reduction in annual fatalities and damages, State funds awarded, and local or federal matching funds.

**Priorities for State Investment in Delta Integrated Flood Management Categories of Benefit Analysis**

Goals	Localized Flood Protection	Levee Network	Wetlands Conservation
1	Protect existing urban and adjacent upland areas by providing 200-year flood protection.	Protect water quality and water supply conveyance in the Delta, especially in parallel project freshwater aqueducts and primary channels that carry wastewater through the Delta.	Protect existing and provide for a net increase in channel-energy habitat.
2	Protect small communities and critical infrastructure of statewide importance from the outside of urban centers.	Protect freshwater conveyance in and through the Delta to a level consistent with the State Plan of Flood Control for project levees.	Protect existing and provide for net enhancement of floodplain habitat.
3	Protect agriculture and local fishing landscapes.	Protect cultural, historic, aesthetic, and recreational resources (Delta as Place).	Protect existing and provide for net enhancement of wetlands.

(b) For purposes of Water Code section 85057.5(a)(3) and section 5001(j)(1)(E) of this Chapter, this policy covers a proposed action that involves discretionary State investments in Delta flood risk management, including levee operations, maintenance, and improvements. Nothing in this policy establishes or otherwise changes existing levee standards.

23 CCR Section 5012

NOTE: Authority cited: Section 85210(i), Water Code.

Reference: Sections 85020, 85300, 85305, and 85306, Water Code.

## Recommendations

### RR-R4. Actions for the Prioritization of State Investments in Delta Levees

*The Delta Stewardship Council, in consultation with the California Department of Water Resources, the Central Valley Flood Protection Board, the Delta Protection Commission, local agencies, and the California Water Commission, should develop funding priorities for State investments in Delta levees by January 1, 2015. These priorities shall be consistent with the provisions of the Delta Reform Act in promoting effective, prioritized strategic State investments in levee operations, maintenance, and improvements in the Delta for both levees that are a part of the State Plan of Flood Control and nonproject levees. Upon completion, these priorities shall be considered for incorporation into the Delta Plan.*

*The priorities should identify guiding principles, constraints, recommended cost share allocations, and strategic considerations to guide Delta flood risk reduction investments, supported by, at a minimum, the following actions to be conducted by the California Department of Water Resources, consistent with available funding:*

- *An assessment of existing Delta levee conditions. This should include the development of a Delta levee conditions map based on sound data inputs, including, but not limited to:*
- *Geometric levee assessment*
- *Flow and updated stage-frequency analysis*
- *An island-by-island economics-based risk analysis. This analysis should consider, but not be limited to, values related to protecting:*
- *Island residents/life safety*
- *Property*
- *Value of Delta islands' economic output, including agriculture*
- *State water supply*
- *Critical local, State, federal, and private infrastructure, including aqueducts, state highways, electricity transmission lines, gas/petroleum pipelines, gas fields, railroads, and*

*deep water shipping channels*

- *Delta water quality*
- *Existing ecosystem values and ecosystem restoration opportunities*
- *Recreation*
- *Systemwide integrity*

*An ongoing assessment of Delta levee conditions. This should include a process for updating Delta levee assessment information on a routine basis. This methodology should provide the basis for the prioritization of State investments in Delta levees. It should include, but not be limited to, the public reporting of the following items:*

- *Tiered ranking of Delta islands, based on economics-based risk analysis values*
- *Delta levee conditions status report, including a levee conditions map*
- *Inventory of Delta infrastructure assets*

## Improve Residential Flood Protection

To reduce the risk to lives, property, and State interests in the Delta, additional standards are needed to address new residential development. Sea level rise, subsidence, and new residential development combine to potentially put many more lives at risk. The policies in this section are designed to reduce risk while preserving the Delta's unique character and agricultural way of life. These policies should be construed as those required to provide the minimum level of flood protection, and should not be viewed as encouraging development in floodprone Delta areas. Flood insurance, and awareness of local emergency preparedness and response policies is strongly encouraged for all who live in floodprone areas of the Delta.

Consistent with existing law, urban development in the Primary Zone should remain prohibited. Urban development in the Secondary Zone should be confined to existing urban spheres of influence where the 200-year design standard will be fully implemented by 2025. The 2007 flood risk management legislation (SB 5) contained provisions affecting city and county responsibilities relating to local planning requirements, such as general plans, development agreements, zoning ordinances, tentative maps, and other actions (Government Code sections 65865.5, 65962, and 66474.5).

Future land use decisions should not permit or encourage construction of significant numbers of new residences in the nonurban Delta. For the legacy communities in the Delta, structures developed in these areas are required to meet the legal standard of a 100-year minimum level of flood protection. However, developing and maintaining adequate flood protection remains difficult.

### Problem Statement

*Continued residential development without adequate flood protection increases risk to lives, property, and State interests in the Delta. Flood risks are expected to grow in light of anticipated climate change effects related to peak flows and sea level rise.*

### Recommendation

#### **RR R(8)(8). Maintain Lower Risk Uses of Flood-Prone Rural Lands**

*Agricultural and natural resource land uses and recreational marinas, resorts, or parks are the most appropriate uses for floodprone rural lands and should be maintained, consistent with the regulatory policy Locate New Development Wisely (DP P1).*

### Policies

*The appendices referred to in the policy language below are included in Appendix B of the Delta Plan.*

#### **RR P2. Require Flood Protection for Residential Development in Rural Areas**

- a) *New residential development of five or more parcels shall be protected through floodproofing to a level 12 inches above the 100-year base flood elevation, plus sufficient additional elevation to protect against a 55-inch rise in sea level at the Golden Gate, unless the development is located within:*
- 1) *Areas that city or county general plans, as of May 16, 2013, designate for development in*

*cities or their spheres of influence;*

- 2) *Areas within Contra Costa County's 2006 voter-approved urban limit line, except Bethel Island;*
  - 3) *Areas within the Mountain House General Plan Community Boundary in San Joaquin County; or*
  - 4) *The unincorporated Delta towns of Clarksburg, Courtland, Hood, Locke, Ryde, and Walnut Grove, as shown in Appendix 7.*
- b) *For purposes of Water Code section 85057.5(a)(3) and section 5001(j)(1)(E) of this Chapter, this policy covers a proposed action that involves new residential development of five or more parcels that is not located within the areas described in subsection (a).*

23 CCR Section 5013

NOTE: Authority cited: Section 85210(i), Water Code.

Reference: Sections 85020, 85300, 85305, and 85306, Water Code.

### Protect and Expand Floodways, Floodplains, and Bypasses

Local land use policies guiding development in floodways are not consistent across Delta counties. Floodways have not been established for many of the channels in the Delta by FEMA or by the CVFPB. In light of these inconsistencies, the Delta Plan addresses these issues and highlights the need for the protection of floodplains and floodways consistent with improved flood protection. Over the next 100 years, Delta floodways may expand and deepen because of sea level rise and changing precipitation patterns. Development in existing or potential future designated floodplain or bypass locations in the Delta or upstream of the Delta can permanently eliminate the availability of these areas for future floodplain usage. It is important to identify floodplain areas now for immediate protection and eventual integration into the flood protection system.

### Problem Statement

*The carrying capacity of the existing flood control system is diminished by encroachments into floodways, critical floodplains, and existing floodplain or bypass locations in the Delta. Local land*

*use policies guiding development in floodways are not consistent across Delta counties. The existing system is already at suboptimal capacity. Expected changes in sea level rise and runoff patterns due to climate change are expected to exacerbate the problem.*

## Policies

### RR P3. Protect Floodways

- a) *No encroachment shall be allowed or constructed in a floodway, unless it can be demonstrated by appropriate analysis that the encroachment will not unduly impede the free flow of water in the floodway or jeopardize public safety.*
- b) *For purposes of Water Code section 85057.5(a)(3) and section 5001(j)(1)(E) of this Chapter, this policy covers a proposed action that would encroach in a floodway that is not either a designated floodway or regulated stream.*

23 CCR Section 5014

NOTE: Authority cited: Section 85210(i), Water Code.  
Reference: Sections 85020, 85300, 85302, and 85305, Water Code.

### RR P4. Floodplain Protection

- a) *No encroachment shall be allowed or constructed in any of the following floodplains unless it can be demonstrated by appropriate analysis that the encroachment will not have a significant adverse impact on floodplain values and functions:*
  - 1) *The Yolo Bypass within the Delta;*
  - 2) *The Cosumnes River-Mokelumne River Confluence, as defined by the North Delta Flood Control and Ecosystem Restoration Project (McCormack-Williamson), or as modified in the future by the California Department of Water Resources or the U.S. Army Corps of Engineers (California Department of Water Resources 2010); and*
  - 3) *The Lower San Joaquin River Floodplain Bypass area, located on the Lower San*

*Joaquin River upstream of Stockton immediately southwest of Paradise Cut on lands both upstream and downstream of the Interstate 5 crossing. This area is described in the Lower San Joaquin River Floodplain Bypass Proposal, submitted to the California Department of Water Resources by the partnership of the South Delta Water Agency, the River Islands Development Company, Reclamation District 2062, San Joaquin Resource Conservation District, American Rivers, the American Lands Conservancy, and the Natural Resources Defense Council, March 2011. This area may be modified in the future through the completion of this project.*

- b) *For purposes of Water Code section 85057.5(a)(3) and section 5001(j)(1)(E) of this Chapter, this policy covers a proposed action that would encroach in any of the floodplain areas described in subsection (a).*
- c) *This policy is not intended to exempt any activities in any of the areas described in subsection (a) from applicable regulations and requirements of the Central Valley Flood Protection Board.*

23 CCR Section 5015

NOTE: Authority cited: Section 85210(i), Water Code.  
Reference: Sections 85020, 85300, 85302, and 85305, Water Code.

## Recommendations

### RR R5R9. Fund and Implement San Joaquin River Flood Bypass

*The Legislature should fund the California Department of Water Resources and the Central Valley Flood Protection Board to evaluate and implement a bypass and floodway on the San Joaquin River near Paradise Cut that would reduce flood stage on the mainstem San Joaquin River adjacent to the urban and urbanizing communities of Stockton, Lathrop, and Manteca in accordance with Water Code section 9613(c).*

### RR R6R10. Continue Delta Dredging Studies

*The current efforts to maintain navigable waters in the*

*Sacramento River Deep Water Ship Channel and Stockton Deep Water Ship Channel, led by the U.S. Army Corps of Engineers and described in the Delta Dredged Sediment Long-Term Management Strategy (USACE 2007, Appendix K), should be continued in a manner that supports the Delta Plan and the coequal goals. Appropriate dredging throughout other areas in the Delta for maintenance purposes, or that would increase flood conveyance and provide potential material for levee maintenance or subsidence reversal should be implemented in a manner that supports the Delta Plan and coequal goals. Coordinated use of dredged material in levee improvement, subsidence reversal, or wetland restoration is encouraged.*

#### **RR R7R11. Designate Additional Floodways**

*The Central Valley Flood Protection Board should evaluate whether additional areas both within and upstream of the Delta should be designated as floodways. These efforts should consider the anticipated effects of climate change in its evaluation of these areas.*

### **Integrate Delta Levees and Ecosystem Function**

Setback levees can provide additional levee system stability, more complex land-water interface structure, and shaded riverine aquatic habitat that benefit ecosystem function in appropriate settings. They can also provide flood control benefits in those areas of the Delta not subject to strong tidal influences where channel capacity improvements can actually increase flood-carrying capacity. Not all locations are amenable or useful for setback levee placement. Each site should be investigated for its potential to provide ecological benefits consistent with levee integrity.

#### **Problem Statement**

*Criteria for the development and implementation of setback levees in the Delta have not yet been developed by relevant agencies. These criteria are*

*needed to provide appropriate guidance when considering setback levee siting and design. Currently, agencies have no consistent method for determining the appropriateness of setback levee incorporation as they relate to habitat enhancement and flood control benefit.*

### **Policies and Recommendations**

**Policies and recommendations regarding the integration of Delta levees and habitat functions will be considered as part of an amendment to the Delta Plan's Ecosystem Restoration chapter.**

#### **RR R8. Develop Setback Levee Criteria**

*The California Department of Water Resources, in conjunction with the Central Valley Flood Protection Board, the California Department of Fish and Game, and the Delta Conservancy, should develop criteria to define locations for future setback levees in the Delta and Delta watershed.*

### **Limit State Liability**

The Delta Reform Act requires that the Delta Plan attempt to reduce risks to people, property, and State interests in the Delta by, among other things, recommending priorities for State investments in levee operation, maintenance, and improvements in the Delta, including project and nonproject levees (Water Code sections 85305, 85306, and 85307). The law expressly states that these provisions do not affect the liability of the State for flood protection in the Delta or its watershed (Water Code section 85032(j)).

Consequently, no action taken by a State agency as required or recommended by, or otherwise in furtherance of, this Delta Plan shall affect State flood protection liability in the Delta or its watershed. Therefore, the Legislature should consider requiring an adequate level of flood insurance for residences, businesses, and industries in floodprone areas.

#### **Problem Statement**

*As the risks of levee failure and corresponding damage increase, California courts have generally exposed public*

agencies and the State, specifically, to significant financial liability for flood damages. DWR's 2005 white paper recommends one way that the State should reduce its liability is to require houses and businesses to have flood insurance (DWR 2005).

## Policies

No policies with regulatory effect are included in this section.

## Recommendations

### RR R9R12. Require Flood Insurance

The Legislature should require an adequate level of flood insurance for residences, businesses, and industries in floodprone areas.

### RR R10R13. Limit State Liability

The Legislature should consider statutory and/or constitutional changes that would address the State's potential flood liability, including giving State agencies the same level of immunity with regard to flood liability as federal agencies have under federal law.

### RR R11R14. Improve National Flood Insurance Program Community Rating System (CRS) Program Ranking

Delta communities should improve their current National Flood Insurance Program Community Rating System (CRS) ranking through the implementation of risk reduction management practices, when feasible, in order to receive additional discounts on flood insurance premium rates.

## Timeline for Implementing Policies and Recommendations

Figure 7-8 lists out a timeline for implementing the policies and recommendations described in the previous section. The timeline emphasizes near-term and intermediate-term actions.

## Timeline for Implementing Policies and Recommendations

TIMELINE		CHAPTER 7: Risk Reduction	
ACTION (REFERENCE #)	LEAD AGENCY	NEAR TERM 2012-2017	INTERMEDIATE TERM 2017-2035
POLICIES	Prohibition of State Investment in Delta levees and risk reduction (RR #1)	State DWR, DWR	•
	Require flood protection for residential development in urban areas (RR #2)	State DWR, DWR	•
	Prohibit industry (RR #3)	DWR	•
	Prohibit industry (RR #4)	DWR	•
	Implement emergency procedures and response (RR #5)	Local, State, and federal agencies	•
RECOMMENDATIONS	Finance flood management practices (RR #2)	Legislature, DWR	•
	Flood actions to protect infrastructure, levees, bridges and other assets (RR #3)	DWR	•
	Actions for the repair, operation, and maintenance of Delta levees (RR #4)	State DWR, DWR	•
	Flood action to protect infrastructure, levees, bridges and other assets (RR #5)	Legislature, DWR, DWR	•
	Continue Delta flood management practices (RR #6)	USACE	•
	Design and construction of Delta levees (RR #7)	DWR	•
	Develop and maintain levees (RR #8)	DWR	•
	Require flood insurance (RR #9)	Legislature	•
	Limit State liability (RR #10)	Legislature	•
	Agency Key: DWR: Delta Water Resources Division; DWR: Delta Protection Commission; RUC: California Public Utilities Commission; DWRFS: Delta Water/Flood Protection Board; DWR: California Department of Water Resources; USACE: U.S. Army Corps of Engineers		

Figure 7-8

## Issues for Future Evaluation and Coordination

The following list of issues should be considered in future updates of the Delta Plan. These and other issues will need to be considered as additional information and materials become available. The various activities called for in this Delta Plan, as well as issues that arise from other planning efforts, such as the Central Valley Flood Protection Plan, will be considered. Additional areas of interest and concern related to flood risk in the Delta may deserve consideration in the development of future Delta Plan updates, including:

- Reoperation of Upstream Reservoirs and Peak Flow Attenuation:** Reservoir operations upstream of the Delta can have substantial impacts on flood flows through the Delta; therefore, operation procedures among government agencies should be well coordinated and, where possible, focused more on flexibility to prevent flooding in the Delta. Water Code section 85309 directs DWR to develop a proposal to coordinate flood and water supply operations with appropriate State and federal agencies, and this shall be considered by the Council for future inclusion in the Delta Plan.
- Utility Corridor Consolidation:** An attempt to consolidate infrastructure into "utility corridors" as facilities are added and upgraded over time should be further investigated to determine whether this can allow for better management of flood risk consequences to these critical assets.

- **State Highways and Sea Level Rise:** The Council will consult with Caltrans regarding the potential effects of climate change and sea level rise on the three state highways that cross the Delta (Water Code section 85307 (c)).

### Science and Information Needs

The Delta system and its influencing factors are not static; therefore, research is needed to better understand dynamic issues such as climate change, seismicity, sea level rise, subsidence, and other areas. Continuing investigations into the science, engineering, and economic aspects of the Delta are critical to adaptively managing for expected and unexpected changes, and can provide decision makers and stakeholders with key information for future planning and decision making. Specifically, additional information will be needed in the following areas:

- The interaction between Delta levees and ecosystem function
- Sea level rise: impacts on, and incorporation into, flood risk reduction standards
- Climate change: effects of altered hydrology on levee system integrity
- Effects of seismicity on levee integrity
- Updated flood stage-probability functions
- Potential for subsidence reversal and carbon sequestration from growing native marsh plants
- Understanding the impacts on Delta flood management from upstream flood management infrastructure operations, including reservoir operations
- Technologies for assessing levee integrity

Efforts to address these needs and others that arise during Delta Plan implementation should be undertaken in a systematic fashion so that information developed and lessons learned can be incorporated into future Delta Plan updates.