

**State of California**  
**Delta Stewardship Council**  
**California Code of Regulations, Title 23. Water Division 6. Delta**  
**Stewardship Council**  
**Chapter 2. Consistency with Regulatory Policies Contained in the Delta**  
**Plan**  
**Article 1. Definitions Section 5001. Definitions**  
**and**  
**Article 3. Consistency with the Regulatory Policies Contained in the Delta**  
**Plan Section 5012. Prioritization of State Investments in Delta Levees and**  
**Risk Reduction**

**Initial Statement of Reasons**

**Summary of Proposal**

The Delta Stewardship Council (Council) proposes to amend California Code of Regulations, Title 23, section 5012 (“Section 5012”) *Prioritization of State Investments in Delta Levees and Risk Reduction* to incorporate the Delta Levees Investment Strategy (DLIS). The Council also proposes to amend California Code of Regulations, Title 23, section 5001 (“Section 5001”) *Definitions* to add definitions for terms used in Section 5012.

**Background and Authority**

This proposed rulemaking action implements, interprets, and makes specific certain provisions of the Sacramento-San Joaquin Delta Reform Act of 2009 (Delta Reform Act) (Wat. Code, § 85000 *et seq.*). The Delta Reform Act requires the Council to adopt and implement a legally enforceable long-term management plan for the Sacramento-San Joaquin Delta (Delta) to further the “coequal goals” for the Delta of “providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem” to “be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place.” (Wat. Code, §§ 85001(c) and 85300(a); the coequal goals are set forth in Wat. Code, § 85054.) The Delta Plan also furthers the State of California (State) policies specified in Water Code sections 85020 through 85023 of the Delta Reform Act, which include: providing for the sustainable management of the Delta ecosystem, a more reliable water supply for the State, and protecting and enhancing the quality of water supply from the Delta, as well as reducing risks to people, property, and State interests through appropriate land use and flood protection. State interests in the Delta include the economic and social well-being of Californians, environmental protection, use and

conservation of resources, public access and recreation, habitat restoration and enhancement, water quality, and flood protection.<sup>1</sup>

Pursuant to the Delta Reform Act, the Council adopted the Delta Plan as a comprehensive, long-term management plan for the Delta. The Delta Plan provides guidance and recommendations to State and local agencies on actions they may take to further the coequal goals for the Delta and implement the subgoals and strategies for the Delta set forth in the Delta Reform Act. (Wat. Code, §§ 85059 and 85300.) The Delta Plan also includes regulatory policies with which State and local public agencies are required to comply. (Wat. Code, § 85210(i).) The Reform Act grants the Council regulatory and appellate authority over certain actions that take place in whole or in part in the Delta and Suisun Marsh, which are referred to as “covered actions”; State and local agencies are required to demonstrate consistency with the applicable regulatory policies (which are incorporated into the Delta Plan) when carrying out, approving, or funding a covered action. (Wat. Code, §§ 85022(a) and 85057.5.)

The Delta Reform Act also requires the Delta Plan to attempt to reduce risks to people, property, and State interests in the Delta by promoting effective emergency preparedness, appropriate land uses, and strategic levee investments (Wat. Code, § 85305(a)) and to recommend priorities for State investments in levee operation, maintenance, and improvements in the Delta, including both project levees (which are a part of the State Plan of Flood Control) and nonproject levees (which are not a part of the State Plan of Flood Control). (Wat. Code, § 85306.)

Water Code section 85210(i) authorizes the Council to adopt regulations or guidelines as needed to carry out its powers and duties; Water Code section 85210(h) grants the Council the power “to request reports from state, federal, and local governmental agencies on issues related to the implementation of the Delta Plan”; Water Code section 85306 authorizes the Council, in consultation with the Central Valley Flood Protection Board (CVFPB), to recommend priorities for state investments in levee operation, maintenance, and improvements in the Delta. This action is proposed to implement, interpret, and make specific one or more of the following: sections, 85020, 85022, 85054, 85057.5, 85225, 85300, 85305, 85306, 85307, and 85309 of the Water Code.

## **Problem Description for the Proposed Regulatory Amendments**

The proposed amendments to Section 5001 and Section 5012 address the Delta Reform Act requirement, set forth in Water Code section 85306, for the Council to recommend priorities for State investments in Delta levee operation, maintenance, and improvements to reduce the likelihood and consequences of levee failures, and to protect people, property, and State interests, while advancing the coequal goals of improving water supply reliability, restoring the Delta ecosystem, and protecting and enhancing the values of the Delta as an evolving place.

The Delta is the largest estuary on the west coast of the Americas and is the hub of the State's major water supply systems. The Delta is home to about 500,000 people and

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<sup>1</sup> Delta Stewardship Council (Council). *The Delta Plan: Ensuring a reliable water supply for California, a healthy Delta ecosystem, and a place of enduring value.* May 2013.

comprises approximately 1,300 square miles of low-lying, flood-prone lands bound by 1,100 miles of levees. Before the Delta was modified by levees and other human structures, the natural flows of the San Joaquin and Sacramento rivers overflowed the Delta's low-lying islands and floodplains for long periods each spring. Today, flooding of the Delta's complex labyrinth of islands and waterways is prevented by levees.

The Suisun Marsh, located immediately downstream from the Delta and north of Grizzly Bay, is the largest contiguous brackish wetland on the west coast of North America. The Suisun Marsh is a critical part of the San Francisco Bay-Delta estuary ecosystem encompassing 116,000 acres, including 52,000 acres of managed wetlands, 30,000 acres of bays and sloughs, 27,700 acres of uplands, and 6,300 acres of tidal wetlands. Suisun Marsh includes about 230 miles of levees that reduce flood risk and help manage flows for wetlands, but only about 80 miles of these levees protect Delta water quality and terrestrial and aquatic habitat of statewide importance.<sup>2</sup>

The Delta and Suisun Marsh levees reduce flood risk to people, property, water supply, the Delta ecosystem, and infrastructure of statewide importance. However, levee failure (such as a levee breach) can cause catastrophic flooding, and can potentially cause injury or loss of life, disrupt water supplies, and possibly damage property, infrastructure, and environmental resources of importance to the entire State. Though levee maintenance and improvements over the past three decades have reduced the frequency of levee failures, the State does not have a comprehensive method to prioritize its investments in operations, maintenance, and improvement projects for levees in the Delta and Suisun Marsh. Without a prioritization methodology, the apportionment of public resources into levees may not occur in a manner that reflects a broader, long-term approach.<sup>3</sup>

Water Code section 85306 requires that the Council, in consultation with the CVFPB, recommend priorities for State investments in levee operations, maintenance, and improvements in the Delta, including project levees constructed and maintained under the State Plan of Flood Control (see Wat. Code, § 9602(c)) and non-project levees that are constructed and maintained by local agencies.

### *Existing Regulations*

The existing Section 5001 defines words and phrases used in the Delta Plan policies and associated regulations and the Delta Reform Act. These definitions are necessary to clarify the meaning of terms used in the regulations.

The Council adopted Section 5012,<sup>4</sup> incorporated into the 2013 Delta Plan,<sup>5</sup> to implement Water Code section 85306 and guide discretionary State investments prior to the completion and adoption of the updated priorities developed pursuant to Water Code section 85306 (which are included in this amendment). However, establishing priorities for State investment in Delta levees during the Delta Plan's development

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<sup>2</sup> Council. *Delta Levees Investment Strategy. Final Report.* July 2017. p. 1.

<sup>3</sup> Council. *The Delta Plan: Ensuring a reliable water supply for California, a healthy Delta ecosystem, and a place of enduring value.* May 2013. p. 271

<sup>4</sup> Section 5012 is also referred to in the Delta Plan as Risk Reduction Policy 1 or RR P1.

<sup>5</sup> Council. *The Delta Plan: Ensuring a reliable water supply for California, a healthy Delta ecosystem, and a place of enduring value.* May 2013.

required extensive discussions with State agencies, levee maintaining districts, stakeholders and members of the public, as well as additional time due to the complexity of the Delta's flood control systems. The Council's approach was to develop a prioritization methodology based on sound scientific and engineering principles, incorporating appropriate economic and hydrologic data.

Consequently, the 2013 Delta Plan and Section 5012 outlined a process to prioritize State investments in levee operation, maintenance, and improvements in the Delta and set forth "interim" priorities for State investment in Delta flood risk management while longer-term guidelines were being established. Section 5012 set the interim priorities as follows:

(a) Prior to the completion and adoption of the updated priorities developed pursuant to Water Code section 85306, the interim priorities listed below shall, where applicable and to the extent permitted by law, guide discretionary State investments in Delta flood risk management. 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).

- (1) 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.<sup>6</sup>
- (2) Delta Levees Funding: The priorities shown in the 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 (DWR) 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 DWR's current practices and any future adopted investment strategy.

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<sup>6</sup> Water Code section 12994.5 was repealed by Senate Bill 1443 (Stats. 2010, c.293, §1.)

**Categories of Benefit Analysis Table**

Goals	Localized Flood Protection	Levee Network	Ecosystem Conservation
1	Protect existing urban and adjacent urbanizing areas by providing 200-year flood protection.	Protect water quality and water supply conveyance in the Delta, especially levees that protect freshwater aqueducts and the primary channels that carry fresh water through the Delta.	Protect existing and provide for a net increase in channel-margin habitat.
2	Protect small communities and critical infrastructure of statewide importance (located outside of urban areas).	Protect flood water 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 working landscapes.	Protect cultural, historic, aesthetic, and recreational resources (Delta as Place).	Protect existing and provide for net enhancement of wetlands.

Source: California Code of Regulations, Title 23. Waters; Division 6. Delta Stewardship Council; Chapter 2. Consistency with Regulatory Policies Contained in the Delta Plan; Article 3. Consistency with the Regulatory Policies Contained in the Delta Plan.

Note: Authority cited: Section 85210(i), Water Code. Reference: Sections 85020, 85300, 85305 and 85306, Water Code.

(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.

In addition to the interim priorities set forth in Section 5012, the Delta Plan indicated that as long-term priorities for State investments in levee operation, maintenance, and improvements are developed, State funds for Delta levee projects should focus on the following actions:

- Provide a 200-year level of flood protection for existing urban and adjacent urbanizing areas. (Wat. Code, §9600 *et seq.*)
- Improve the levees that protect aqueducts crossing the Delta and the freshwater pathway to Clifton Court Forebay to improve the reliability of these water supplies.
- Improve other Delta levees not specifically planned for ecosystem restoration to the FEMA HMP guidance level to ensure that the Delta’s reclamation districts (RD) are eligible for public funding for emergency flood fighting, emergency repair, permanent restoration, and/or replacement of eligible damaged nonproject levees.
- Continue to fund and implement the Delta Levees Maintenance Subventions Program to maintain Delta levees.<sup>7</sup>

Application of the interim priorities set forth in Section 5012 allowed for the development of a more coordinated, effective approach to reducing Delta flood risk and prioritizing

<sup>7</sup> Council. 2013. *The Delta Plan: Ensuring a reliable water supply for California, a healthy Delta ecosystem, and a place of enduring value.* May 2013. p. 263.

both immediate and long-term State investments, while taking future actions that may be proposed through other planning efforts into account.

### ***Approach to Funding Prioritization for State Investments in Delta Levees***

In addition to outlining a process to prioritize State investments in levee operation, maintenance, and improvements in the Delta while longer-term guidelines were being established, the Delta Plan also recommended that the Council, in consultation with the DWR, the CVFPB, the Delta Protection Commission, local agencies, and the California Water Commission, implement Water Code section 85306 by developing funding priorities for State investments in Delta levees. The 2013 Delta Plan described a framework for the DLIS to assess Delta flood risk and included recommendations to: assess existing Delta levee conditions; develop an economics-based risk analysis for each Delta tract and island; conduct ongoing Delta flood risk analyses in an open manner for the public; and develop an updated understanding of Delta hydrology.<sup>8</sup>

In 2014, the Council began formulating a comprehensive analysis of State interests and risks in the Delta. The analysis began with the development of the document: *State Investment in Delta Levees: Key Issues*,<sup>9</sup> which summarizes relevant statutes and key issues to consider in developing updated priorities for State investment in Delta levees. Following a March 11, 2015 Council workshop with nationally recognized flood management experts, Council staff drafted the *Delta Flood Management Investment Principles*, a document which outlined 12 principles to guide the development of State flood investments.<sup>10</sup> These principles are:

1. The goals of State law and the Delta Plan—and, therefore, the DLIS—are to better protect life, property, and the State’s coequal goals for the Delta.
2. State funding should not assist further urbanization of flood-prone Delta land.
3. Expenditures should reduce risk. Reducing the probability of flood damage, for example, by improving levees or creating floodways, and lowering the consequences of flooding with actions like evacuation planning or floodproofing are both important.
4. State flood management investment to protect urban areas is the first priority.
5. Water conveyance and diversion infrastructure is a high priority.
6. State funds must enhance the ecosystem even if projects cost more to the State and to reclamation districts. A programmatic approach that locates ecosystem enhancements where they provide high benefits is preferable.
7. Consider systemwide needs. Specific recommendations of the Delta Plan and the State Plan of Flood Control should be considered. These include the proposed Paradise Cut Bypass recommended in the Delta Plan, and other specified non-project levees.

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<sup>8</sup> Council. 2013. *The Delta Plan: Ensuring a reliable water supply for California, a healthy Delta ecosystem, and a place of enduring value*. May 2013. pp. 262-263.

<sup>9</sup> Council. 2015. *State Investments in Delta Levees. Key Issues for Updating Priorities*. January 2015

<sup>10</sup> Council. 2015. *Delta Flood Management Investment Strategy Principles Approved as Interim Guidance on July 24, and August 27, 2015*.

8. Impacts to the Delta's unique values should be taken into account. These include the Delta's farmlands, historic communities, and natural and cultural resources.
9. State investments in the Delta's flood management system must consider post-flood recovery responses by local, state, and federal agencies and the efficacy and likelihood of financial assistance after flood damage.
10. Owners of non-project levees seeking State funding have the burden to prove that they protect many people and/or assets or help achieve the coequal goals.
11. The DLIS should be based on the Delta Plan principle that beneficiaries pay. The State share of levee improvements should reflect the State interests at stake. Levee maintenance is primarily the responsibility of local reclamation districts and their property owners, not the State. The State should also take into account the ability of local agencies to pay.
12. The State should create a Delta Flood Risk Management Assessment District with the authority to charge all beneficiaries.

In addition to the independent peer review panel, the Council deployed an extensive public engagement process for the development of its methodology for DLIS. Council staff hosted over 70 workshops and public meetings with Delta residents, reclamation district engineers, water supply and ecosystem interests, and other Delta stakeholders. Overall, the development of the DLIS was discussed at over 44 Council meetings.<sup>11</sup> In 2016, in response to the independent peer review panel's recommendations, the Council adopted the report *Risk Analysis Methodology: Delta Levees Investment Strategy*.<sup>12</sup>

The DLIS combines risk analysis, economics, engineering, and decision-making techniques to identify funding priorities and assemble a comprehensive investment strategy for Delta levees. The DLIS is based on a methodology that quantifies risk by considering the threats to Delta levees and the assets protected by these levees. Specifically, risk is the probability that an adverse event (such as a flood or earthquake) will occur, multiplied by the consequences of that event:

$$\text{Risk} = \text{Probability} * \text{Consequences}$$

Building on the results of previous Delta levee planning efforts, Council staff collected and used existing data and information from numerous sources to evaluate risks to State interests in the Delta. State interests in the Delta are defined by risk to public safety; property and infrastructure; water supply reliability; the Delta ecosystem; and the unique attributes of the Delta as an evolving place.<sup>13</sup>

This methodology formed the foundation for the Council to develop a Decision Support Tool (DST) to enable the Council and stakeholders to review and update the data and analysis that form the basis of the risk evaluation. The DST supports deliberations by

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<sup>11</sup> Additional information about the strategy development can be found at <http://deltacouncil.ca.gov> or is available by request by contacting Erin Mullin ([erin.mullin@deltacouncil.ca.gov](mailto:erin.mullin@deltacouncil.ca.gov)).

<sup>12</sup> Council. 2016. *Delta Levees Investment Strategy. Risk Analysis Methodology*. Revised August 2016.

<sup>13</sup> Ibid. Page 10.

summarizing information about baseline and future risks, aggregating and displaying risks to State interests.

The DLIS team, with information provided by the DST, identified the islands and tracts that represent at least 80 percent of the total risk to people, property, habitat and water supply. The islands and tracts with the highest risk to State interests were identified as the following:

- People – 11 islands or tracts with expected annual fatalities (EAF) greater than 0.24 lives per year (at least 90 percent of Delta-wide EAF).
- Property – 11 islands or tracts with expected annual damages (EAD) greater than \$3.5 million per year (at least 80 percent of Delta-wide EAD).
- Habitat – 11 islands or tracts with more than 89 acres of expected annual loss of habitat (at least 80 percent of Delta-wide expected loss of high-value, non-tidal habitat).
- Water Supply – 22 important water supply islands or tracts with a probability of flooding greater than 0.5 percent per year (1-in-200-year probability).

Using the risk analysis methodology described above and applying a deliberation-with-analysis approach to DST outputs, the Council established a three-tiered priority list for State investments in levee improvements for Delta islands: Very-High Priority islands or tracts, High Priority islands or tracts, and Other Priority islands or tracts. The Very-High Priority islands or tracts category consists of islands characterized as high risk for two or more State interests, the High Priority islands or tracts category consists of islands characterized as high risk for a single State interest, and all remaining islands and tracts are categorized as Other Priority islands or tracts. Through the deliberation-with-analysis process, the Council also identified the following special considerations to further clarify and assign priorities. The special considerations accounted for issues that could go uncaptured by a computer algorithm. They took into account a systems approach of flood risk, State plans for future land use and intrinsic value of legacy communities and prime agricultural farmland. Issues considered were:

- Hydraulic connection between adjacent islands,
- Ecosystem restoration opportunities,
- Delta as a place, and
- Suisun Marsh levees.

Considering the DST outputs and accounting for these special considerations, the Council developed a list of State levee investment priorities that included 17 islands and tracts in the Very-High Priority islands or tracts category, and 34 islands and tracts in the High Priority islands or tracts category for State investments in levee improvements in the Delta and Suisun Marsh.<sup>14</sup>

At its April 26, 2018 meeting, the Council adopted Resolution 2018-1 (Resolution) for “Certification of the Delta Plan Amendments Program Environmental Impact Report;

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<sup>14</sup> Council. 2017. *Delta Levees Investment Strategy. Final Report*. July 2017. pp. 46-51.



Adoption of Findings and a Statement of Overriding Considerations, Mitigation Measures, and a Mitigation Monitoring and Reporting Program; and Adoption of the Delta Plan Amendments.”<sup>15</sup> In the Resolution, the Council (among other things) adopted revisions to the policy set forth in Section 5012, adopted amendments to Chapter 7 of the Delta Plan (*Reduce Risk to People, Property, and State Interests in the Delta*)<sup>16</sup> to be consistent with the revised policy, certified the Environmental Impact Report for the Delta Plan Amendments,<sup>17</sup> and directed the initiation of this rulemaking process to amend Section 5012 and Section 5001.

## Purpose of the Proposed Amendments to the Existing Regulation

### *Section 5001*

The purpose of the proposed amendment to Section 5001 is to add definitions for six new terms used in the proposed amendment to Section 5012: *Levee Improvement*, *Levee Maintenance*, *Levee Rehabilitation*, *Very-High Priority islands or tracts*, *High Priority islands or tracts*, and *Other Priority islands or tracts*. These terms are defined as follows:

“High Priority islands or tracts” means the tracts of land listed under “High Priority” in the Table (Proposed)<sup>18</sup> from the proposed amendment to Section 5012 and depicted in Appendix P to the Delta Plan.

“Levee improvement” is defined in the proposed amendment as improvements to a levee “intended to reduce the probability of flooding.” The definition also provides an example of levee improvement. The proposed definition of levee improvement is necessary because the DLIS priorities in section 5012(b) apply to State discretionary investments in Delta levee improvement projects.

“Levee maintenance” is defined in the proposed amendment as “annual or routine levee maintenance work intended to preserve the levee system in its current condition.” The definition also provides examples of levee maintenance work. The proposed definition of levee maintenance is necessary because section 5012(a) excludes levee maintenance from the DLIS priorities.

“Levee rehabilitation” is defined in the proposed amendment as “levee repair work needed to restore the levee integrity and preserve existing flood risk reduction benefits.” The definition also provides examples of levee rehabilitation work. The proposed definition of levee improvement is necessary because the DLIS priorities in section 5012(b) apply to State discretionary investments in Delta levee rehabilitation projects.

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<sup>15</sup> Council. 2018. *Resolution 2018-1. Certification of the Delta Plan Amendments Program Environmental Impact Report; Adoption of Findings and a Statement of Overriding Considerations, Mitigation Measures, and a Mitigation Monitoring and Reporting Program; and Adoption of the Delta Plan Amendments*. April 26, 2018. Available at: <http://deltacouncil.ca.gov>

<sup>16</sup> Council. 2018. *Delta Plan Amendments*. April. Available at: <http://deltacouncil.ca.gov>

<sup>17</sup> Council. 2018. *Delta Plan Amendments Final Program Environmental Impact Report*. April. Available at: <http://deltacouncil.ca.gov>

<sup>18</sup> The figure referred to as Table (Proposed) in this document is the proposed Table 1 in the proposed Section 5012.

“Other Priority islands or tracts” means the tracts of land listed under “Other Priority” in the Table (Proposed) from the proposed amendment to Section 5012 and depicted in Appendix P to the Delta Plan.

“Very-High Priority islands or tracts” means the tracts of land identified under “Very-High Priority” in the Table (Proposed) from the proposed amendment to Section 5012 and depicted in Appendix P to the Delta Plan.

### ***Section 5012***

The purpose of the proposed amendment to Section 5012 is to implement and make specific Water Code section 85306 authority to set priorities for State investments in levee operation, maintenance, and improvements.

Proposed Section 5012(a) clarifies that funding for levee maintenance will continue to be available through the Subvention Program, which provides for reimbursement of authorized expenses associated with the maintenance and rehabilitation of Delta levees as authorized by Water Code section 12980 *et seq.* The Subvention Program is a cost share program that provides technical and financial assistance to local agencies in the Delta to maintain and rehabilitate nonproject and eligible project levees. The Subvention Program is managed by DWR. The CVFPB reviews and approves DWR’s recommendations and enters into agreements with local agencies to reimburse eligible costs of levee maintenance and rehabilitation.

Proposed Section 5012(b) sets forth the DLIS, including levee improvement prioritization identified in the Table (Proposed) of the proposed amendment to Section 5012 and depicted in the proposed Appendix P to the Delta Plan (Appendix P provides maps of the DLIS priorities set forth in the Table (Proposed), below, of proposed Section 5012; proposed Appendix P is part of this rulemaking and is incorporated into, and made a part of, proposed Section 5012 as if fully set forth therein). Table (Proposed) identifies: (1) specific islands or tracts that are located within the legal boundaries of the Delta (defined in Wat. Code, § 12220) and the Suisun Marsh (defined in Pub. Res. Code, § 29101) which are subject to the proposed regulation; and (2) identifies the Delta Levee Investment Strategy priority for each specific island or tract. The maps that illustrate the priorities set forth in the Table (Proposed) are depicted in this Initial Statement of Reasons (ISOR), below, as Figures 1 through 4. These maps (Figures 1 through 4) are part of this rulemaking and are the maps in the proposed Appendix P to the Delta Plan.

To identify specific islands or tracts of property subject to the proposed regulation and identified in the Table (Proposed), Council staff reviewed several previous Delta and Suisun Marsh studies, including the following maps and documents:

- Sacramento-San Joaquin Delta Atlas<sup>19</sup>
- Delta Risk Management Strategy, Phase 1. Risk Analysis Report<sup>20</sup>

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<sup>19</sup> State of California Department of Water Resources (DWR). 1995. *Sacramento San-Joaquin Delta Atlas*.

<sup>20</sup> DWR. 2009. *Delta Risk Management Strategy, Phase 1. Risk Analysis Report*. Section 2, p. 17.

- Map of the Sacramento-San Joaquin Delta and Suisun Marsh prepared by the Flood SAFE Environmental Stewardship and Statewide Resources Office (FESSRO)<sup>21</sup>
- Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System<sup>22</sup>
- Economic Sustainability Plan for the Sacramento-San Joaquin Delta<sup>23</sup>
- Suisun Marsh Properties Map<sup>24</sup> (Suisun Marsh RCD 2015)
- Map of the Sacramento-San Joaquin Delta<sup>25</sup>

Additionally, Council staff consulted with reclamation district engineers to develop a comprehensive inventory of islands and tracts, described in detail in the DLIS Risk Analysis Methodology Report.<sup>26</sup> Council staff considered all islands, tracts, and boundaries that are located within the legal description of the Delta, Suisun Marsh, and the Federal Emergency Management Agency (FEMA) delineated 0.2 percent annual exceedance probability (AEP) floodplain boundary, often referred to as the “500-year” floodplain boundary. Council staff used a hydrologic unit, or polder, subject to flooding in the event of a levee breach as the unit of analysis. The polders, commonly referred to as islands and tracts, generally conform to islands and tracts with common names on Delta maps, and to Local Maintaining Agencies, or reclamation district boundaries, but not in all cases. Islands and tracts identified as “DLIS-##” in the Table (Proposed) from the proposed amendment to Section 5012 and in Delta Plan, Appendix P, are polders in the study area that do not have common names. Once the list was developed, it was again reviewed and refined with input from Council staff, reclamation district engineers, and DWR. Suisun Marsh Resource Conservation District (RCD) staff provided support in delineating islands and tracts in Suisun Marsh.

The project team identified 176 islands and tracts – 131 islands in the Delta and 45 in Suisun Marsh – to be included in the proposed regulation<sup>27</sup>. The project team did not include all property within the legal boundaries of the Delta. Examples of tracts of property not included in the inventory include property that is protected from flooding, such as unleveed in-channel islands, or high ground not subject to flooding in the south Delta. Islands and tracts were grouped into three categories based on their risk, and considering all metrics with equal weights: Very-High Priority islands or tracts, High Priority islands or tracts, and Other Priority islands or tracts based on the following criteria:

- Very-High Priority islands or tracts: These islands or tracts are identified as the

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<sup>21</sup> DWR. 2013. *Map of the Sacramento-San Joaquin Delta and Suisun Marsh*. Prepared by the Flood SAFE Environmental Stewardship and Statewide Resources Office (FESSRO).

<sup>22</sup> DWR. 2013. *Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System*.

<sup>23</sup> Delta Protection Commission. 2012. *Economic Sustainability Plan for the Sacramento-San Joaquin Delta*. pp. 61-62.

<sup>24</sup> Suisun Marsh Resource Conservation District. 2015. *Suisun Marsh Properties Map*.

<sup>25</sup> Council. 2014. *Map of the Sacramento-San Joaquin Delta*.

<sup>26</sup> Council. 2017. *Delta Levees Investment Strategy. Risk Analysis Methodology*. Revised July 2017.

<sup>27</sup> More information on how the project team identified the islands and tracts can be found in the *Delta Levees Investment Strategy. Final Report*. July 2017 p. 2.

highest priority because their levees pose the highest risk to lives and property and State interests. Very-High Priority polders have significant risk to two or more State interests or are the subject of special considerations.

- **High Priority islands or tracts:** These islands or tracts are identified as High Priority because threats to levees protecting these islands and tracts pose lower risks to lives and property and State interests than on the Very-High Priority islands and tracts. High Priority polders have significant risk to one State interest or are the subject of special considerations.
- **Other Priority islands or tracts:** These islands or tracts pose lower risk to lives and property and State interests, either because they have better levees that are less likely to fail, and pose a lower risk due to their lower probability of failure, or because they do not protect significant life, property, or State interests, compared to higher ranked islands and tracts.

**Table (Proposed) Delta Levee Investment Strategy Priorities<sup>28</sup>**

Very-High Priority	Bethel Island, Bishop/DLIS-14 (North Stockton), Brannan-Andrus, Byron Tract, Central Stockton, Dutch Slough, Grand Island, Jersey Island, Maintenance Area 9 North, Maintenance Area 9 South, McCormack-Williamson Tract, North Stockton, Reclamation District 17, Sherman Island, Twitchell Island, Upper Andrus Island, West Sacramento
High Priority	Bacon Island, Bouldin Island, Bradford Island, Clifton Court Forebay, DLIS-08 (Discovery Bay Area), DLIS-20 (Yolo Bypass), DLIS-22 (Rio Vista), DLIS-63 (Grizzly Island Area), Drexler Tract, Glanville, Hastings Tract, Holland Tract, Honker Bay, Honker Lake Tract, Hotchkiss Tract, Jones Tract (Lower and Upper), Little Egbert Tract, Mandeville Island, McDonald Island, Middle & Upper Roberts Island, Mossdale Island, New Hope Tract, Palm-Orwood, Paradise Cut, Paradise Junction, Pescadero District, Staten Island, Stewart Tract, Terminous Tract, Tyler Island, Union Island West, Victoria Island, Webb Tract, Woodward Island
Other Priority	Atlas Tract, Bixler Tract, Brack Tract, Cache Haas Area, Canal Ranch Tract, Chipps Island, Coney Island, Dead Horse Island, DLIS-01 (Pittsburg area), DLIS-06 (Oakley area), DLIS-07 (Knightsen area), DLIS-10, DLIS-15, DLIS-17, DLIS-18, DLIS-19 (Grizzly Slough area), DLIS-25, DLIS-26 (Morrow Island), DLIS-27, DLIS-28, DLIS-29, DLIS-30, DLIS-31 (Garabaldi Unit), DLIS-32, DLIS-33, DLIS-34, DLIS-35, DLIS-36, DLIS-37 (Chadbourne Area), DLIS-39, DLIS-40, DLIS-41 (Joice Island area), DLIS-43 (Potrero Hills Area), DLIS-44 (Hill Slough Unit), DLIS-46, DLIS-47, DLIS-48, DLIS-49, DLIS-50, DLIS-51, DLIS-52, DLIS-53, DLIS-54, DLIS-55, DLIS-56, DLIS-57, DLIS-59, DLIS-62, Drexler Pocket, Egbert Tract, Ehrhardt Club, Empire Tract, Fabian Tract, Fay Island, Glide District, Holt Station, Kasson District, King Island, Libby McNeil, Lisbon District, Lower Roberts Island, McMullin Ranch, Medford Island, Mein's Landing, Merritt Island, Netherlands, Pearson District, Peters Pocket, Pico-Naglee, Prospect Island, Quimby Island, Randall Island, Rindge Tract, Rio Blanco Tract, River Junction, Rough and Ready Island, Ryer Island, Shima Tract, Shin Kee Tract, Stark Tract, Sunrise Club, Sutter Island, Union Island East, Veale Tract, Venice Island, Walnut Grove, Walthall, Wetherbee Lake, Winter Island, Wright-Elmwood Tract, Yolano

<sup>28</sup> This figure is the proposed Table 1 in the proposed Section 5012.

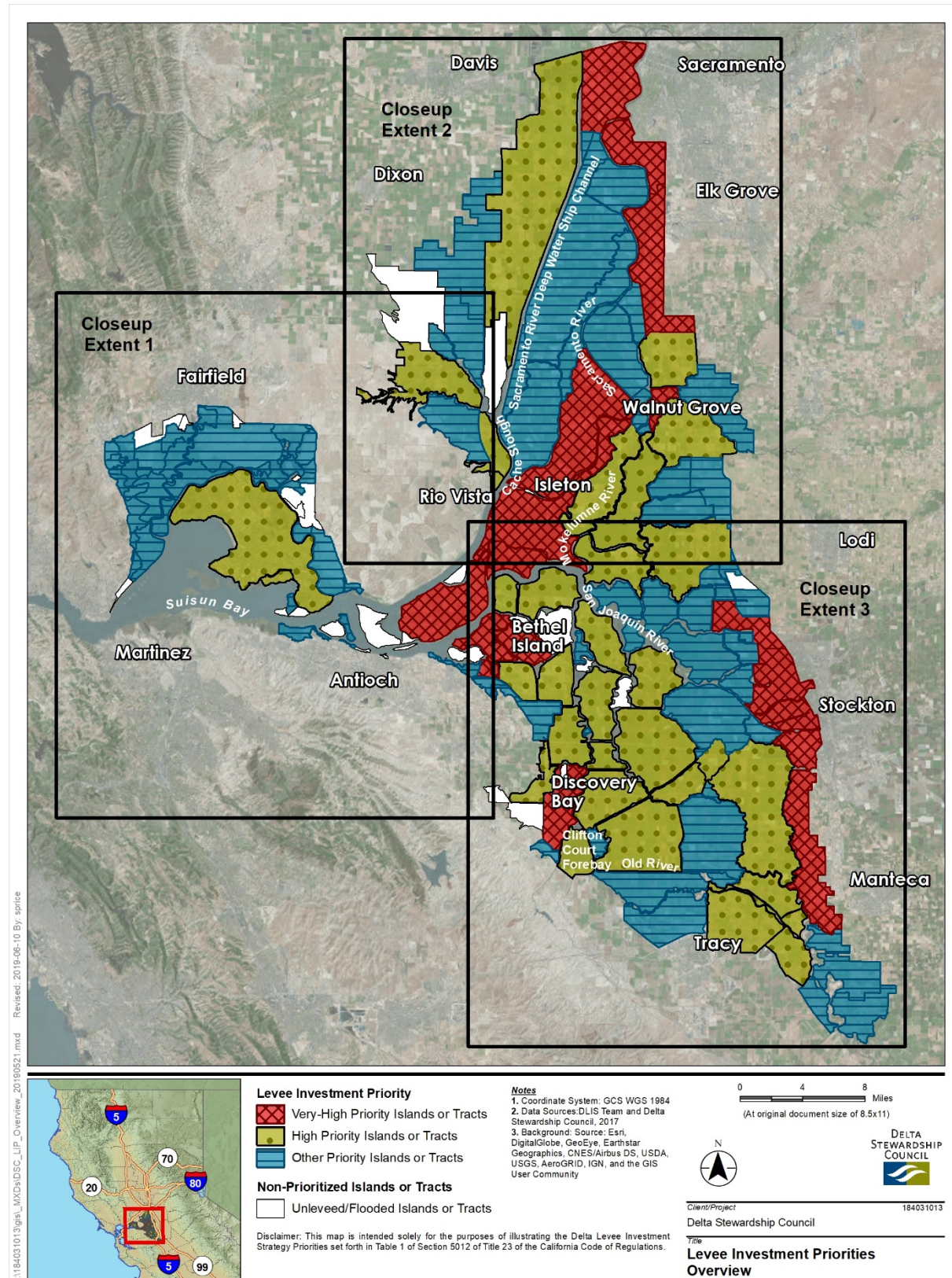


Figure 1. Delta Levee Investment Strategy Priorities, Overview

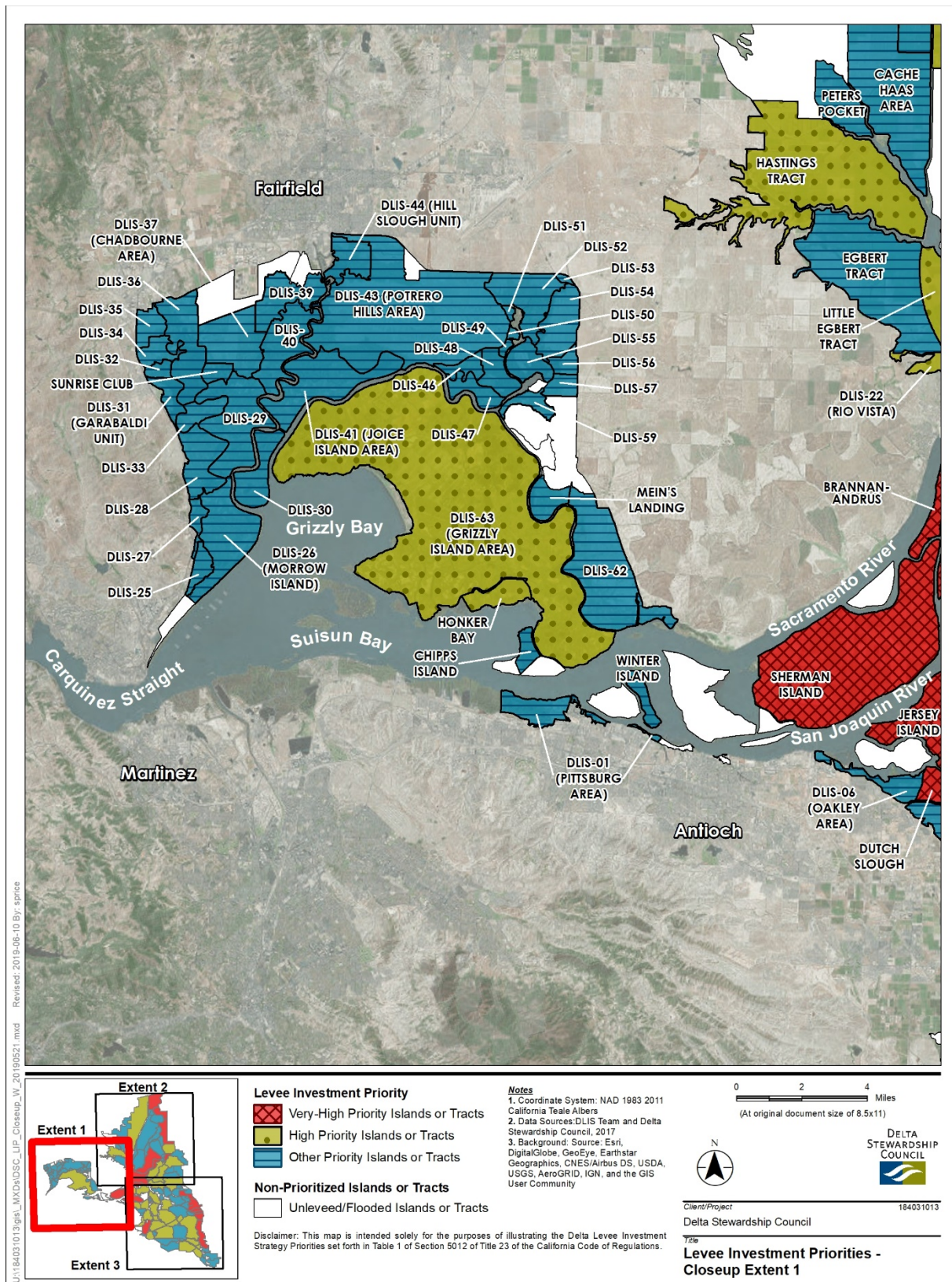


Figure 2. Delta Levee Investment Strategy Priorities, Extent 1

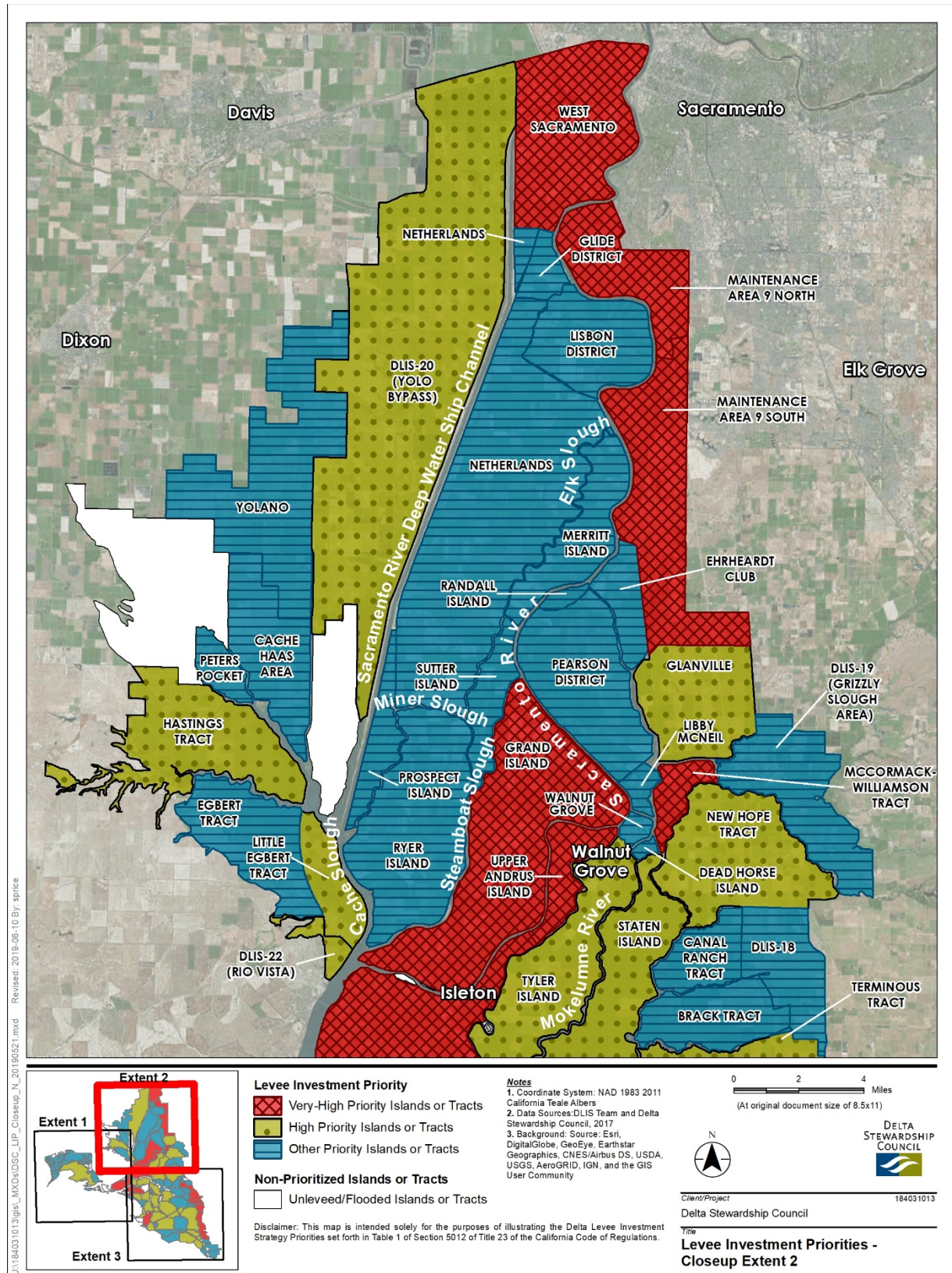


Figure 3. Delta Levee Investment Strategy Priorities, Extent 2

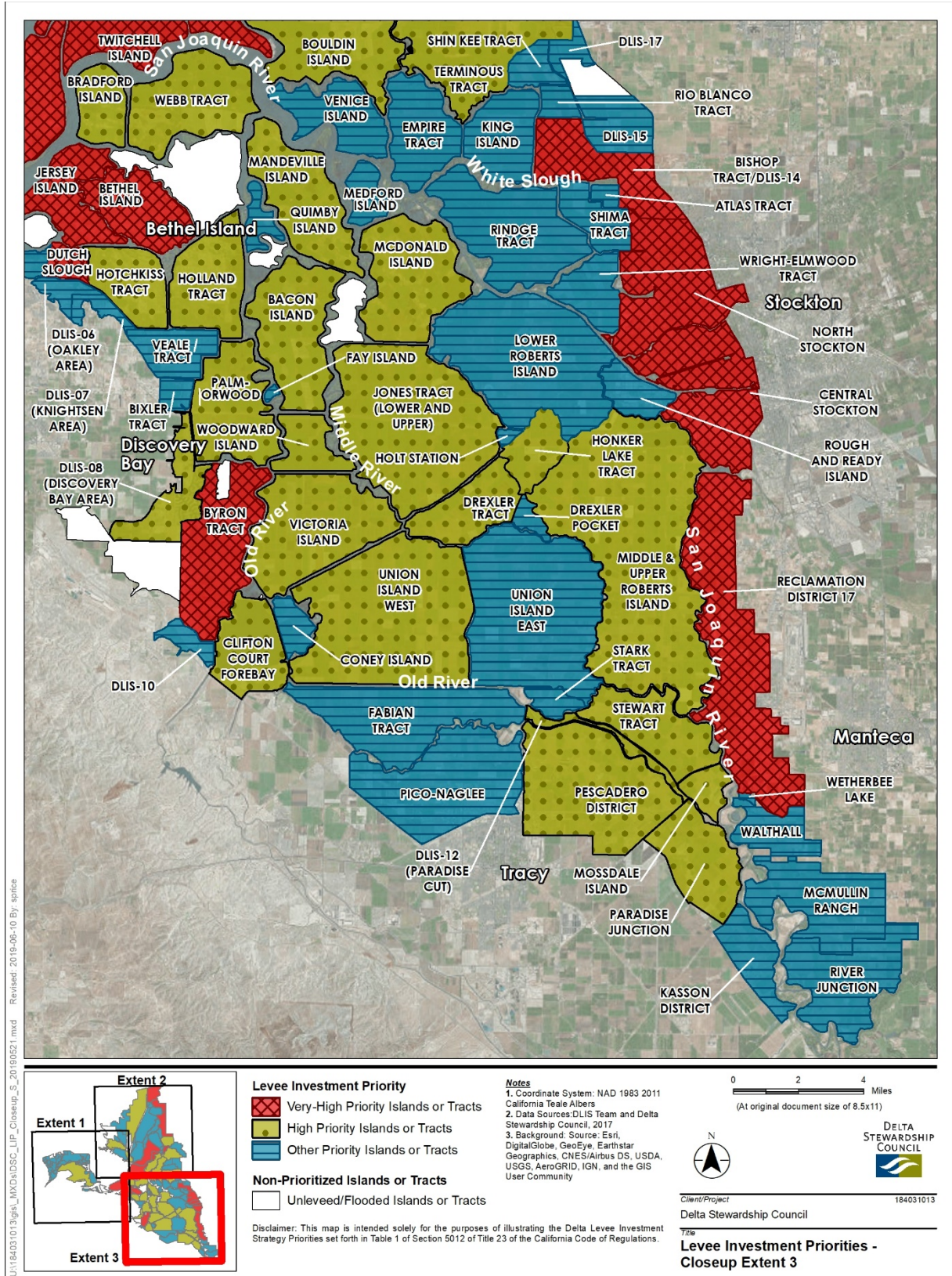


Figure 4. Delta Levee Investment Strategy Priorities, Extent 3



Section 5012(b), subsection (1), directs DWR to fund projects at Very-High Priority islands or tracts identified in the Table (Proposed) before approving projects at High Priority or Other Priority islands or tracts. It also provides that if available funds are sufficient to fully fund levee improvements at the Very-High Priority islands or tracts, then funds for improvements or rehabilitation of levees on High Priority islands or tracts may be provided, and after those projects have been fully funded, then projects at Other Priority islands or tracts may be funded.

Section 5012(b)(2)(A) requires DWR to annually submit to the Council a written report identifying its decisions to award State funds for Delta levee improvements and levee rehabilitation projects, and to include the following specific information in that report: the location of each funded improvement; the priority of the funded islands or tracts; 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. Section 5012(b)(2)(A) also requires DWR to submit that written annual report to the Council least 30 days prior to presenting before the Council.

Section 5012(b)(2)(B) specifies that when DWR's contributions toward levee improvements and rehabilitation vary from the DLIS priorities in set forth in subsection (b)(1) of proposed Section 5012 (identified in the Table (Proposed) and depicted in Appendix P to the Delta Plan), the annual report must identify how the funding is inconsistent; describe why variation from the priorities is necessary; and explain how the funding nevertheless protects lives, property, and the State's interests in water supply reliability and restoration, protection, and enhancement of the Delta ecosystem, while considering the Delta's unique agricultural, natural resource, recreational, and cultural values.

Section 5012(c) renumbers existing 5012 subdivision (b) to subdivision (c), and replaces text previously used to refer to Delta flood risk management with text referring to the improvement and rehabilitation of Delta levees.

## **Rationale for Regulatory Amendment**

### ***Section 5001***

Section 5001 defines terms and phrases used in the Delta Plan regulations and the Delta Reform Act. Proposed amendments to Section 5001 specifically add the following terms used in proposed amendments to Section 5012; levee improvement, levee maintenance, levee rehabilitation, High Priority islands or tracts, Other Priority islands or tracts, and Very-High Priority islands or tracts. These new definitions are necessary to clarify the meaning of the terms used in the proposed Section 5012. The definitions will also assist State program managers in determining the prioritization for a proposed activity when funding decisions are being made.

### ***Section 5012***

The proposed amendment to Section 5012 is necessary to: implement Water Code section 85306, which requires the Council, in consultation with the CVFPB, to recommend priorities for State investments in levee operation, maintenance, and improvements in the Delta, including both project and nonproject levees; carry out the

legislative requirement that the Council adopt a legally enforceable long-term management plan for the Delta (Wat. Code § 85001); and carry out the legislative intent of achieving the coequal goals and objectives specified in Water Code sections 85054, 85020 through 85023. The Delta Reform Act states that, inherent in the coequal goals for management of the Delta, the policy of the State is to achieve the objective of reducing risks to people, property, and State interests in the Delta through effective emergency preparedness, appropriate land uses, and investments in flood protection. (Wat. Code §85305.)

Proposed Section 5012(a) excludes funding for levee maintenance from the DLIS priorities and clarifies that levee maintenance will continue to be available through the Subvention Program, which provides for reimbursement of authorized expenses associated with the maintenance of Delta levees, as authorized in Water Code section 12980 *et. seq.* The Council determined through its levee investment analysis that maintaining access to Delta Subvention Program maintenance funding was a cost-effective approach to preserving the flood risk reduction gains that were made with levee improvements.

Proposed Section 5012(b) sets forth the Delta levees investment strategy, including levee improvement prioritization identified in the Table (Proposed) and depicted in Appendix P to the Delta Plan, and directs DWR to fund projects at the Very-High Priority islands or tracts identified in Table (Proposed) before approving projects at High Priority or Other Priority islands or tracts. This provision is necessary to implement Water Code section 85306, which directs the Council to recommend priorities for State investments in levee operation, maintenance, and improvements in the Delta, including both project and nonproject levees.

Proposed Section 5012(b)(2)(A) requires DWR to submit a written report to the Council annually identifying its decisions to award State funds for Delta levee improvements and levee rehabilitation projects and include specific information in the report. The reporting requirements provide a means for the Council to evaluate whether State investments in Delta levees comply with the DLIS priorities, Delta Plan, Delta Reform Act, and coequal goals. The reporting requirement allows the Council to track and ascertain if the DLIS priorities are achieving the intended purpose. The requirement to provide the written report to the Council 30 days before DWR presents the report to the Council is necessary to provide the Council and public with adequate time to review and evaluate the report.

Proposed Section 5012(b)(2)(B) specifies that when DWR's contributions towards levee improvements and rehabilitation vary from the DLIS priorities in Table (Proposed) , the annual report shall identify how the funding is inconsistent; describe why variation from the priorities is necessary; and explain how the funding nevertheless protects lives, property, and the State's interests in water supply reliability and restoration, protection, and enhancement of the Delta ecosystem while considering the Delta's unique agricultural, natural resource, recreational, and cultural values. This section is necessary to enable DWR to deviate its funding decisions from the DLIS priorities under certain circumstances. However, DWR must report each such variation, and the reporting requirement requires that DWR justify its funding decisions in light of the

established DLIS priorities. This reporting requirement allows for variations from the DLIS priorities under limited circumstances and if certain criteria are met.

Proposed Section 5012(c) clarifies the types of projects to which the DLIS priorities apply, and those to which DLIS priorities do not apply. The proposed change to the regulation replaces text previously used to refer to Delta flood risk management with text referring to the improvement and rehabilitation of Delta levees.

## Economic Impact Assessment

When a State agency proposes to amend a regulation that is not a major regulation, Government Code section 11346.3(b) requires the agency to prepare an economic impact assessment to assess whether and to what extent it will affect the following: 1) the creation or elimination of jobs within the State; 2) the creation of new businesses or the elimination of existing businesses within the State; 3) the expansion of businesses currently doing businesses within the State; and 4) the benefits of the regulation to the health and welfare of the State's residents, worker safety, and environment. The Council has prepared an *Economic and Fiscal Impact Analysis of Proposed Amendments to Prioritization of State Investments in Delta Levees and Risk Reduction* (EFIA) pursuant to Government Code section 11346.3(b)(1)(A)-(D), which is included as Attachment 1 to this ISOR.

Based on the analysis contained in the EFIA, the Council makes the following initial determinations:

1. Creation or elimination of jobs within the State: The proposed amendment would have negligible impacts on the creation or elimination of jobs within the State (see Section 7 of the EFIA for discussion).
2. Creation of new businesses or elimination of existing businesses within the State: The proposed amendment would have negligible impacts on the creation of new businesses or elimination of existing businesses within the State (see Section 5 and Section 14.1 of the EFIA for discussion).
3. Expansion of businesses currently doing business within the State: The proposed amendment would not have a significant statewide adverse economic impact directly affecting business, including ability to compete. The proposed amendment would have negligible impacts on the expansion of businesses currently doing business within the State, would not require business reports to be made; and would not affect small businesses (using the consolidated definition of small business set forth in Cal. Gov. Code Section 11346.3(b)(4)(B)).
4. Benefits of the regulation to the health and welfare of the State's residents, worker safety, and environment include (see Section 6 and Section 14.3 of the EFIA for discussion):
  - o Reduced risk of damage to property and infrastructure, including reduced cost to repair failed levees (11 Very-High Priority or High Priority islands or tracts with expected annual damages (EAD) greater than \$3.5 million per year (at least 80 percent of Delta-wide EAD));
  - o Reduced annual risk of fatalities from a levee failure (11 Very-High Priority or High Priority islands or tracts with an expected annual fatality (EAF))

- greater than 0.24 lives per year (at least 90 percent of Delta-wide EAF));
- State water supply reliability benefits (22 Very-High or High Priority islands or tracts with a probability of flooding greater than 0.5 percent per year (1-in-200-year probability));
- “Delta as a Place” benefits from cultural, recreational, and natural resource, and agricultural qualities that distinguish the Delta; and
- Improving transparency and public awareness of State levee funding decisions.

## **Economic and Fiscal Impact Statement (STD. 399)**

In addition to the EFIA, the Council has prepared an Economic and Fiscal Impact Statement (Form STD. 399), which is a part of this rulemaking package.

### ***Benefits of the Proposed Regulatory Amendment***

As discussed in the EFIA (Section 6 and Section 14.3) and set forth in Form STD. 399 (Section C of the Economic Impact Statement), the proposed amendment would provide economic benefits by prioritizing levee improvement expenditures to islands or tracts that would realize the greatest benefit to State interests, as identified in the DLIS. The anticipated benefits, including any nonmonetary benefit to the protection of public health and safety of the State’s residents, worker safety, and environment, from this proposed regulatory action are:

- Reduced risk of damage to property and infrastructure, including reduced cost to repair failed levees (11 Very-High Priority or High Priority islands or tracts with expected annual damages (EAD) greater than \$3.5 million per year (at least 80 percent of Delta-wide EAD));
- Reduced annual risk of fatalities from a levee failure (11 Very-High Priority or High Priority islands or tracts with an expected annual fatality (EAF) greater than 0.24 lives per year (at least 90 percent of Delta-wide EAF));
- State water supply reliability benefits (22 Very-High or High Priority islands or tracts with a probability of flooding greater than 0.5 percent per year (1-in-200-year probability));
- “Delta as a Place” benefits from cultural, recreational, and natural resource, and agricultural qualities that distinguish the Delta; and
- Improving transparency and public awareness of State levee funding decisions.

Of these five benefit categories, the DLIS quantified and monetized only reduced risk of damage to property and infrastructure as a change in expected annual damages from prioritization of levee investments. Benefits for the other four categories were characterized in qualitative, descriptive terms. The proposed amendment could potentially increase benefits across all of the above-listed categories by prioritizing levee investments to islands or tracts that address each benefit category identified in the DLIS.

### ***Costs of the Proposed Regulatory Amendment***

As discussed in the EFIA (Section 5, Section 10, and Section 14.2) and set forth in Form STD. 399 (Section B of the Economic Impact Statement), the proposed amendment would not alter the total amount of funding for Delta levee improvements. Rather, the proposed amendment would change the prioritization for how levee investment is distributed within the Delta and could potentially result in a reallocation of expenditures between Delta islands or tracts, which may cause quantifiable economic costs and non-quantifiable (i.e. non-monetized) benefits as described above.

The proposed amendment results in a negligible economic impact because the proposed amendment could affect the timing of levee investment but does not change the overall level of funding. As discussed in the EFIA, the proposed amendment would not result in direct costs to employees, individuals, or businesses, including small businesses. The amendment could create prospective indirect economic costs by redistributing the timing of funding for Delta levee improvements to different islands or tracts. The EFIA estimates that these prospective indirect economic costs from changes in risk of damage to properties and infrastructure to Delta islands or tracts could be \$38,100 per year (\$0.07/acre) or \$760,000 in capitalized value (less than 0.0143% of the gross value of agricultural land in the Delta).

### ***Fiscal Impact to State and Local Agencies***

As discussed in the EFIA (Section 11, Section 12, Section 14.6, Section 14.7, Section 14.8) and set forth in Form STD 399 (Section A, Section B, and Section C of the Fiscal Impact Statement), the proposed amendment would result in fiscal costs to State agencies but would not result in any direct cost to local agencies. DWR would be required to prepare and submit an annual report to the Council describing Delta levee investments, and if necessary, justifying why funding decisions deviated from the priorities in the proposed amendment. The Council would be required to review the annual report prepared by DWR. The additional cost of preparing an annual report is generally moderate and can be completed by existing staff that are familiar with Delta levee investments and the Delta Plan, thus it is likely these additional costs would be absorbed within existing DWR and Council budgets.

- It is estimated that the proposed amendment would result in fiscal impacts to State agencies of approximately \$368,000 per year, and no impact to local agencies or school districts. These costs would be absorbed within existing budgets.
- The proposed amendment would not impose a mandate on local agencies or school districts that would require reimbursements.

### ***Major Regulation Requirements***

The proposed regulatory action is not a major regulation as defined in Government Code section 11342.548 and California Code of Regulations, title 1, section 2000 (g) because the proposed regulation does not have an estimated economic impact on California business enterprises and individuals in an amount exceeding \$50 million.

## Reasonable Alternatives to the Proposed Policy Actions

California Government Code section 11346.2(b)(4)(A) requires the Council to consider and evaluate reasonable alternatives to the proposed regulatory action and provide reasons for rejecting those alternatives. This section discusses alternatives evaluated and provides reasons why these alternatives were not included in the proposal. Council staff did not find any of the alternatives considered to be more effective in carrying out the purpose for which the proposed regulatory action is proposed, or any alternative that is less burdensome and equally effective, or more cost effective and equally effective in effectuating the purpose of the proposed amendments to sections 5001 and 5012.

Staff considered and evaluated five alternatives to the proposed amendments. These alternatives are described below along with the rationale for rejecting them:

- Alternative 1 – Retain existing Section 5012 regulation (No Action)
- Alternative 2 – Repeal existing Section 5012 regulation
- Alternative 3 – Prioritize Levee Investments in High Risk to Life or Property Areas
- Alternative 4 – Prioritize Levee Investments in Delta Wetland Restoration and High Risk to Life and Property Areas
- Alternative 5 – Prioritize Levee Investments in Through-Delta Conveyance and High Risk to Life and Property Areas

### *Alternative 1 – Retain Existing Section 5012 Regulation (No Action)*

Under Alternative 1, the Council would not take any action to amend Section 5012. The “interim” priorities set forth in Section 5012 for State investment in Delta flood risk management would remain in place; new long-term priorities developed by the Council would not be implemented.

This alternative would not be less burdensome or equally or more effective than the proposed regulation. Alternative 1 was eliminated from consideration. The existing regulation states that prior to the completion and adoption of the updated priorities developed pursuant to Water Code section 85306, the interim priorities included in the regulation shall guide discretionary State investments in Delta flood risk management. The interim priorities established in the 2013 Delta Plan were adopted with the intent to update in the future.

### *Alternative 2 – Repeal Existing Section 5012 Regulation*

Under Alternative 2, the Council would act to repeal Section 5012. The “interim” priorities set forth in Section 5012 for State investment in Delta flood risk management would be repealed and there would be no regulation to identify long-term priorities for State investments in Delta levee operation, maintenance, and improvements. Rather, the DLIS priorities would be implemented as a non-regulatory part of the Delta Plan.

This alternative would not be less burdensome or equally or more effective than the proposed regulation. Alternative 2 was eliminated from consideration because Water Code section 85306 requires the Delta Plan to recommend priorities for State investments in Delta levees, including project and nonproject levees.

### ***Alternative 3 – Prioritize Levee Investments in High Risk to Life or Property Areas***

Alternative 3 focuses on prioritizing investments in levee improvements at islands or tracts identified as having a high risk to life or property, including urban and urbanizing areas of Sacramento, West Sacramento, and Stockton. Levee improvements that support other State interests (such as improving Delta ecosystem conditions or maintaining water supply corridors) would still occur but would be prioritized lower than investments in areas with high risk to life or property. Continued funding would be provided for maintenance of levees throughout the Delta where authorized by Water Code section 12980 et seq. and consistent with the recommendations of the CVFPB.

This alternative would not be less burdensome or equally or more effective than the proposed regulation. Alternative 3 was eliminated from consideration because although it would achieve or partially achieve many of the objectives of the proposed amendment, it would not prioritize levee investments that protect ecosystem enhancements that provide high benefits over other types of levee investments. Further, this alternative would not be consistent with the comprehensive methodology applied by the Council using sound scientific and engineering principles, and appropriate economic and hydrologic data, nor consistent with an independent peer review and an extensive public engagement process.

### ***Alternative 4 – Prioritize Levee Investments in Delta Wetland Restoration and High Risk to Life and Property Areas***

Alternative 4 focuses on prioritizing investments in levee improvements at islands or tracts identified as having benefits to Delta ecosystems and high risk to life or property. Levee improvements that support other State interests (such as maintaining water supply corridors) would still occur but would be prioritized lower than investments in Delta wetland restoration and high risk to life and property areas. Continued funding would be provided for maintenance of levees throughout the Delta where authorized by Water Code section 12980 et seq. and consistent with the recommendations of the CVFPB.

This alternative would not be less burdensome or equally or more effective than the proposed regulation. Similar to Alternative 3, Alternative 4 was eliminated from consideration because although it would achieve or partially achieve many of the objectives of the proposed amendment, it would not prioritize investments that contribute to protecting water conveyance and diversion infrastructure over other types of levee investments. Further, this alternative would not be consistent with the comprehensive methodology applied by the Council using sound scientific and engineering principles, and appropriate economic and hydrologic data, nor consistent with an independent peer review and an extensive public engagement process.

### ***Alternative 5 – Prioritize Levee Investments in Through-Delta Conveyance and High Risk to Life and Property Areas***

Alternative 5 focuses on prioritizing investments in levee improvements at islands or tracts identified as having high risk to water supply, life and property. Levee improvements that support other State interests (such as improving Delta ecosystem conditions) would still occur but would be prioritized lower than investments in high risk

to water supply, life and property areas. Continued funding would be provided for maintenance of levees throughout the Delta where authorized by Water Code section 12980 et seq. and consistent with the recommendations of the CVFPB.

This alternative would not be less burdensome or equally or more effective than the proposed regulation. Similar to Alternatives 3 and 4, Alternative 5 was eliminated from consideration because although it would achieve or partially achieve many of the objectives of the proposed amendment, it would not prioritize levee investments that protect ecosystem enhancements that provide high benefits over other types of levee investments. Further, this alternative would not be consistent with the comprehensive methodology applied by the Council using sound scientific and engineering principles, and appropriate economic and hydrologic data, nor consistent with an independent peer review and an extensive public engagement process.

## **Economic Impact of Alternatives to the Proposed Policy Actions**

The following summarizes the conclusions of the analysis in Attachment 1, Economic Impact Assessment:

- Alternative 1 would retain the existing section 5012, so would have no additional or reduced economic impact relative to the current regulation as analyzed (Council, 2012) and adopted in 2013.
- Alternative 2 would eliminate any economic impacts of section 5012 of the current regulation as analyzed (Council, 2012) and adopted in 2013.
- Alternative 3 would provide somewhat greater benefits in the categories of reduced risk to life and property and a somewhat lower level of benefits for water supply, ecosystem, and Delta as a place.
- Alternative 4 would provide somewhat greater benefits (relative to the proposed amendment) for Delta ecosystem and habitat and a somewhat lower level of benefits in the other categories (loss to life and property, water supply, and Delta as a place).
- Alternative 5 would provide somewhat greater benefits (relative to the proposed amendment) for water supply reliability and conveyance and a somewhat lower level of benefits in the other categories (loss to life and property, ecosystem, and Delta as a place).

## **Reasonable Alternatives to the Proposed Regulatory Policies that Would Lessen Adverse Impact on Small Business**

California Government Code section 11346.2(b)(4)(B) requires state agencies to consider reasonable alternatives that would lessen any adverse impact on small businesses. Since the effect on general businesses is negligible, it follows that small businesses would not be disproportionately affected or overly burdened by the proposed amendment. As described in the EFIA, there is no evidence that any of the alternatives considered by the Council would be more effective in implementing the proposed regulatory amendment, be as effective and less burdensome to affected individuals or businesses, or be more cost effective to affected individuals or businesses.



## Duplication or Conflicts with Federal Regulations

The proposed regulations do not unnecessarily duplicate or conflict with federal regulations. A review of the Code of Federal Regulations did not indicate the existence of duplicative or conflicting law.

## Public Process for Development of Proposed Amendment

In addition to the independent peer review, the Council deployed an extensive public engagement process in developing the DLIS methodology. Council staff hosted over 70 workshops and public meetings with Delta residents, reclamation district engineers, water supply and ecosystem interests, and other Delta stakeholders. Development of the DLIS was discussed at over 44 Council meetings.

## Technical and Empirical Studies, Reports, or Documents

The Council relied upon the following studies, reports, and documents.

- Comparison of PL 84-99 Analyses Delta Levees Investment Strategy (DLIS) Technical memorandum. Delta Stewardship Council (Council), 2017.
- Economic Sustainability Plan for the Sacramento-San Joaquin Delta. Delta Protection Commission, 2012.
- Delta Flood Management Investment Strategy Principles. Council, Approved as Interim Guidance on July 24, and August 27, 2015.
- Delta Levees Investment Strategy Issue Paper. Council, 2015.
- Delta Levees Investment Strategy Final Report, Council, 2016.
- DLIS MOU and Joint Implementation Plan. Council, June 22, 2017 Meeting.
- The Delta Plan: Ensuring a reliable water supply for California, a healthy Delta ecosystem, and a place of enduring value. Council, 2013.
- Delta Plan Program Environmental Impact Report. Council, 2013.
- Delta Plan Amendments. Council, April 2018.
- DLIS Risk Analysis Methodology Report. Council, Revised June 2017.
- DLIS: Sea Level Rise Methodology. Council, 2015.
- Delta Reclamation District Financing and Budgets. Council, 2015.
- Delta Risk Management Strategy, Phase 1. Risk Report: Section 2. DWR, 2009.
- Discussion Draft of Potential Revisions to Chapter 7 Policies and Recommendations. Council, March 23, 2017 Meeting.
- Draft Report: Earthquakes and High Water as Levee Hazards in the Sacramento-San Joaquin Delta. Delta Independent Science Board (Delta ISB), 2016.
- Final: Levee Related Habitat Review Issue Paper. Council, 2015.
- Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System. DWR, 2013.
- Map of the Sacramento-San Joaquin Delta. Council, 2014.

- Map of the Sacramento-San Joaquin Delta and Suisun Marsh prepared by the Flood SAFE Environmental Stewardship and Statewide Resources Office (FESSRO). DWR, 2013.
- Reclamation District Ability to Pay (ATP) Analysis Technical memorandum. Council, 2017.
- Resolution 2018-1. Certification of the Delta Plan Amendments Program Environmental Impact Report, Adoption of Findings and a Statement of Overriding Considerations, Mitigation Measures, and a Mitigation Monitoring and Reporting Program, and Adoption of the Delta Plan Amendments. Council, April 26, 2018.
- Review Technical Memoranda from Delta Levee Prioritization Methodology Peer Review Meeting. Council, May 19-20, 2015.
- Revisions to Current DLIS Amendment. Council, March 23, 2017 Meeting.
- Sacramento-San Joaquin Delta Atlas. DWR, 1995.
- State Investments in Delta Levees. Key Issues for Updating Priorities. Council, 2014.
- State Investments in Delta Levees. Key Issues for Updating Priorities. Council, 2015.
- Suisun Marsh Properties Map. Suisun Marsh RCD, 2015.

**Attachment 1  
to the  
Initial Statement of Reasons (ISOR) for California Code of  
Regulations, Title 23. Water Division 6. Delta Stewardship Council  
Chapter 2. Consistency with Regulatory Policies Contained in the  
Delta Plan  
Article 1. Definitions Section 5001. Definitions  
and  
Article 3. Consistency with the Regulatory Policies Contained in  
the Delta Plan Section 5012. Prioritization of State Investments in  
Delta Levees and Risk Reduction (23 Cal. Code of Regs. 5001 and  
5012 (DLIS))**

**Economic and Fiscal Impact Analysis of Proposed Amendments  
to Prioritization of State Investments in Delta Levees and Risk  
Reduction**

## **1. Overview**

This Economic and Fiscal Impact Analysis (EFIA) provides the economic and fiscal impact assessments that are required under applicable sections of Government Code 11346.2, 11346.3 and 11346.5. It is developed following standard economic practice and is consistent with applicable State Administrative Manual (SAM) sections. The economic and fiscal impacts described in this EFIA are disclosed in the associated Economic and Fiscal Impact Statement (Form STD 399).

The EFIA is structured as follows:

- Section 2 summarizes the proposed amendments.
- Section 3 provides an overview of how the proposed amendments could result in economic and fiscal impacts.
- Section 4 describes the data and methods used to quantify economic and fiscal impacts.
- Sections 5 – 12 describe the economic and fiscal impacts identified in the analysis.
- Section 13 summarizes the economic and fiscal impacts of alternatives to the proposed amendment.

- Section 14 summarizes key conclusions of the economic and fiscal analysis and provides a crosswalk to the required disclosures in the STD 399.

## 2. Summary of Proposed Amendments

This section summarizes the key components of the proposed amendments that could result in fiscal or economic impacts quantified in the EFIA. Additional details about the proposed amendment can be found in the main body of the Initial Statement of Reasons (ISOR).

The Delta Stewardship Council (Council) is proposing amendments to California Code of Regulations (Cal. Code of Regs.), Title 23, Waters, Division 6, Delta Stewardship Council, Chapter 2, Consistency with Regulatory Policies Contained in the Delta Plan, Article 1, Definitions, Section 5001, *Definitions*, (Section 5001) and Delta Plan Article 3, Consistency with the Regulatory Policies Contained in the Delta Plan, Section 5012, *Prioritization of State Investments in Delta Levees and Risk Reduction* (Section 5012). Section 5001 and Section 5012, adopted in 2013, respectively specified definitions and interim guidelines for prioritization of State of California (State) investments in Delta levee improvements. The amended regulation would replace the interim guidelines set forth in the current Section 5012 and the amended language would be consistent with the Delta Plan updates adopted by the Council on April 26, 2018 in Resolution 2018-1.<sup>1,2</sup> Proposed changes to Section 5001 and Section 5012 relevant to the EFIA are summarized below.

The proposed amendment to Section 5001 would add six new definitions.<sup>3</sup> No direct or indirect economic or fiscal impacts to businesses, individuals, local agencies, or state agencies from incorporating these definitions into Section 5001 and other minor formatting edits to Section 5001 were identified. Any economic or fiscal impacts related to these definitions would be caused by proposed amendments to Section 5012, where these terms are applied.

The proposed amendment to Section 5012 would modify the existing regulation by requiring future discretionary State investments in Delta levees to be consistent with the priorities (Very-High Priority, High Priority, and Other Priority islands or tracts) determined by the Delta Levees Investment Strategy<sup>4</sup> (DLIS). The proposed amendment would direct the California Department of Water Resources (DWR) to fund projects at Very-High Priority islands or tracts before approving projects at High Priority or Other Priority islands or tracts. However, if there are no proposed projects on Very-

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<sup>1</sup> Delta Stewardship Council (Council). 2018. Resolution 2018-1. Certification of the Delta Plan Amendments Program Environmental Impact Report; Adoption of Findings and a Statement of Overriding Considerations, Mitigation Measures, and a Mitigation Monitoring and Reporting Program; and Adoption of the Delta Plan Amendments. April 26, 2018. Available at: <http://deltacouncil.ca.gov>

<sup>2</sup> Council. 2018. Delta Plan Amendments. April. Available at: <http://deltacouncil.ca.gov>

<sup>3</sup> The proposed amendment would make other minor formatting edits to the definitions sections, mostly to update the numbering of the definitions and terms to accommodate the new definitions, but these changes are not relevant to the EFIA.

<sup>4</sup> Council. 2017. Delta Levees Investment Strategy Final Report. Available at: <http://deltacouncil.ca.gov>

High Priority islands or tracts for a given grant cycle, then DWR can fund projects for High Priority islands or tracts (and Other Priority islands or tracts, if there are no proposed projects for High Priority islands or tracts). In addition, the proposed amendment would require DWR to prepare an annual report to the Council summarizing levee funding decisions. If funding decisions deviate from the DLIS prioritization, DWR would be required to justify the reason for the deviation and explain how the funding nevertheless protects lives, property, and the State's interests in water supply reliability and restoration, protection, and enhancement of the Delta ecosystem while considering the Delta's unique agricultural, natural resource, recreational, and cultural values.

### 3. Overview of Economic and Fiscal Impacts

Water Code section 85306 requires the Council's Delta Plan to include priorities for state investments in levee operation, maintenance and improvements in the Delta. To implement Water Code section 85306 and guide discretionary State investments prior to the completion and adoption of the updated priorities developed pursuant to Water Code section 85306 (which are included in this amendment), the Council adopted Delta Plan Policy RR P1, *Prioritization of State Investments in Delta Levees and Risk Reduction*, included in the 2013 Delta Plan and codified in Section 5012. Currently, Section 5012 sets forth priorities for State investment in Delta flood risk management. The fiscal and economic impacts associated with the current regulation (Section 5012 and other sections related to regulatory policies included in the Delta Plan) were described in a fiscal and economic analysis report (November 2012 *Cost Analysis for Proposed Delta Plan Regulations in Support of Economic and Fiscal Impact Statement*, hereafter referred to as "2012 Cost Analysis").<sup>5</sup> As described in the 2012 Cost Analysis, the current Section 5012 specifies a set of guidelines to maximize benefits from investments in Delta levee improvements pending additional analysis to quantify and prioritize those benefits (pursuant to Wat. Code § 85306). The 2012 Cost Analysis found that there were no additional fiscal or economic costs attributable to Section 5012 beyond those that were already calculated as part of broader consistency determination requirements for the Delta Plan.

The DLIS was able to quantify and prioritize many of the benefits from investments in Delta levee improvements. The proposed amendment to Section 5012 would replace the current Delta levee investment guidelines with the DLIS priorities. It would not affect the total amount of funds available for Delta levee improvements.

However, the economic analysis of impacts on businesses and individuals was conducted using a conservative methodology. Applying this conservative methodology does show a potential for negligible economic impacts due to the effect of the proposed amendment on timing and distribution of Delta levee investments. The reallocation of Delta levee improvement investments could cause some economic impacts by redistributing the timing of costs and benefits that are a result of Delta levee investment across Delta islands or tracts. However, economic impacts would be prospective because the proposed amendment may affect the timing (order) of future expenditures

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<sup>5</sup> Delta Stewardship Council (Council). 2012. Cost Analysis. Cost Analysis for Proposed Delta Plan Regulations in Support of Economic and Fiscal Impact Statement. November 2012.

on Delta levee improvements but would not affect the total magnitude and it allows DWR to deviate from the priorities under certain conditions. The EFIA quantifies these prospective economic impacts (see Sections 5-10 for a more detailed discussion).

The proposed amendment to Section 5012 would create fiscal costs to State agencies by requiring DWR to prepare an annual report and submit that report to the Council. DWR would incur additional fiscal costs in their risk reduction analysis and annual reporting (see Section 12 below for a more detailed discussion). The Council would incur fiscal costs by reviewing annual reports and coordinating with DWR (see Section 11 below for a more detailed discussion). Local agencies would not be directly affected by the DLIS prioritization and would not incur any additional fiscal costs beyond current requirements. The EFIA quantifies the fiscal costs of the proposed amendment.

#### 4. Economic and Fiscal Impact Analysis Methodology

The proposed amendment would result in quantifiable and unquantifiable (i.e. non-monetized) costs and benefits. The analysis provides a qualitative discussion and quantitative estimates of the following economic and fiscal impacts:

1. Direct benefits that accrue to businesses and individuals that could realize an increase in State investments in levee improvements.
2. Direct costs that accrue to businesses and individuals that could realize a decrease in State investments in levee improvements.
3. Indirect economic impacts to businesses and individuals that are related to the direct costs or benefits.
4. Fiscal costs to DWR from annual reporting, identifying deviations from the DLIS prioritization, and describing how deviations are consistent with the goals of the Delta Plan.
5. Fiscal costs that the Council would incur when reviewing annual reports prepared by DWR.

The economic impact analysis uses data from the DLIS, DWR Project Solicitation Package (PSP) grant programs, and other publicly available reports. The fundamental logic of the economic impact analysis is as follows. State investment in levee improvements is inversely related to the probability of levee failure (from combined hydraulic and seismic risks). In the near-term, the proposed amendment to Section 5012 could decrease State expenditures on High Priority or Other Priority islands or tracts and increase State expenditures on Very-High Priority islands or tracts, but the total funding is unchanged. As levee expenditures increase (decrease) the probability of levee failure decreases (increases) and expected annual damages from flooding decrease (increase). The expected annual damages from flooding can be capitalized into Delta island or tract land values, which is an indirect benefit or cost of the proposed amendment. It follows that the quantifiable economic impact of the proposed amendment is equal to the prospective change in land values on islands or tracts that realize an increase (benefit) or decrease (cost) in State levee investment expenditures.

The general approach for the economic impact analysis involves the following steps:

1. Quantify the probabilistic relationship between expenditures on Delta island or tract investments and the probability of levee failure using the DLIS data.
2. Identify recent State investments in Delta levee improvements by island or tract, and classify those investments according to the DLIS priorities (Very-High Priority, High Priority, or Other Priority islands or tracts).
3. Estimate the maximum quantifiable economic impact (benefits or costs) by reallocating recent investments in Delta levee improvements identified in (2) according to the DLIS priorities, and quantify the resulting change in the probability of levee failure, using the relationship calculated in (1).
4. Calculate the economic impact (costs or benefits) as the prospective capitalized land value of the change in levee failure probability, under (3), multiplied by the expected annual cost of a levee failure.
5. Calculate any quantifiable indirect effects resulting from the direct changes calculated under (4), applying a standard input-output model of Delta counties.
6. Describe any unquantifiable (non-monetized) costs or benefits.

The fiscal impact analysis applies the same general approach:

1. Estimate the direct fiscal cost of DWR staff time for preparing annual reports, general consultation with the Council, preparing justifications for deviating from the DLIS, and reviewing any such justifications with Council.
2. Estimate the direct fiscal cost of Council staff time for annual reviews of DWR reports, general consultations with DWR, and reviews of deviations from the DLIS.

The following sections summarize our assessment of the estimated fiscal and economic impacts of the proposed amendment.

## 5. Economic Costs of the Proposed Amendment

The DLIS risk analysis of quantifiable expected annual damages was used to estimate the change in levee failure risk per dollar invested in levee improvements.<sup>6,7</sup> Data summarized in Table 5-3 of the DLIS Final Report were used to calculate the capital cost to improve selected levees from baseline conditions to standards established under Public Law 84-99, Rehabilitation Assistance for Non-Federal Flood Control Projects (PL 84-99). The analysis conservatively used the higher construction cost range shown in the DLIS (\$1.5 million per mile). These data were merged with data from Table 5-5 of the DLIS Final Report showing flooding probability and expected annual damages under baseline conditions (no additional investment), and flooding probability and expected annual damages if levees were improved to PL 84-99 standards. A constant repair cost

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<sup>6</sup> Council. 2017. Delta Levees Investment Strategy Final Report. Available at: <http://deltacouncil.ca.gov>

<sup>7</sup> Council. 2017. Delta Levees Investment Strategy Risk Analysis Methodology Report. Available at: <http://deltacouncil.ca.gov>

of \$25 million per levee failure was applied based on estimates described in the DLIS Risk Analysis Methodology Report.<sup>8</sup>

The expected change in land value per dollar investment in levee improvement, by island or tract, was analyzed using the data described above. The benefit of improving a representative levee from baseline conditions to PL 84-99 standards was calculated as the change in expected annual probability of levee failure, multiplied by the sum of the expected annual damages and repair cost. This amount was then divided by the capital cost of improving the subject levee to PL 84-99 standards. The result was the change in expected annual damages (costs) per dollar of levee investment. This information was calculated for a subset of 16 islands or tracts for which data were available. Data were limited to islands or tracts with levees that could be upgraded to PL 84-99 standards. The economic analysis based on these data is representative of the type and magnitude of economic impacts that could be expected throughout the Delta.

The next step in the analysis calculated total recent historical expenditures on Delta levee improvements that would be covered by the proposed amendment. As described by the Delta Protection Commission (DPC) in the *Delta Flood Risk Management Assessment District Feasibility Study and Delta Levee Financing Options Report*,<sup>9</sup> gathering comprehensive data describing Delta levee investments, by agency, by island or tract, by funding source is generally not feasible. In general, funding for improvements in Delta levees comes from State, federal, and local partners from local fees, state bonds, and various cost-sharing arrangements. It was not possible to identify a complete historical inventory of expenditures on levee improvements by island or tract. Therefore, this analysis used the Delta Special Flood Control Projects Program (PSP)<sup>10</sup> reported project expenditures, by island or tract, between 2008 and 2015 to illustrate the recent distribution of State expenditures on Delta levee improvements that could be affected by the proposed amendment to Section 5012. This is not intended to be a complete inventory of investments in Delta levee improvements; rather, it is a partial accounting based on the best available data used to demonstrate a plausible range of prospective economic costs. Total State expenditures on levee improvements included in this analysis equal \$75 million in nominal terms. After converting these past costs to current dollars using the gross domestic product (GDP) Implicit Price Deflator,<sup>11</sup> the total expenditures equal \$78.6 million.

State expenditures were inventoried by island or tract, and each island or tract was ranked based on its DLIS priority. Of the \$78.6 million expenditures used in this analysis, approximately \$16 million (20.4%) in State funding was allocated to Other Priority islands or tracts, \$31.1 million (39.6%) to High Priority islands or tracts, and

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<sup>8</sup> Ibid. p. 122.

<sup>9</sup> Delta Protection Commission (DPC). 2018. Delta Flood Risk Management Assessment District Feasibility Study and Delta Levee Financing Options Report. Available at: [http://delta.ca.gov/wp-content/uploads/2018/06/DFRMADFS\\_Final\\_Report\\_051718.pdf](http://delta.ca.gov/wp-content/uploads/2018/06/DFRMADFS_Final_Report_051718.pdf)

<sup>10</sup> California Department of Water Resources (DWR). 2017. Delta Levees Special Flood Control Projects. Project List 3/2/217. Available at: [https://water.ca.gov/LegacyFiles/floodsafe/fessro/deltalevees/special\\_projects/docs/special\\_active\\_projects.pdf](https://water.ca.gov/LegacyFiles/floodsafe/fessro/deltalevees/special_projects/docs/special_active_projects.pdf). Accessed 12/9/18.

<sup>11</sup> GDP implicit Price Deflator. 2018. Downloaded from the St. Louis Federal Reserve. Accessed December 4, 2018.



\$31.5 million (40.0%) to Very-High Priority islands or tracts. Therefore, the proposed amendment could affect the ongoing allocation of approximately \$47.1 million in State expenditures on Other Priority or High Priority islands or tracts that occurred over the seven-year period from 2008 to 2015. Expenditures on Very-High Priority islands or tracts would not be affected.

For this analysis, all expenditures allocated to Other Priority or High Priority islands or tracts were conservatively assumed to be reallocated to Very-High Priority islands or tracts. That is, this analysis illustrates the economic impact of reallocating all \$47.1 million invested in High Priority or Other Priority islands or tracts to Very-High Priority islands or tracts. In practice, DWR has discretion to fund proposed projects for Other Priority or High Priority islands or tracts. If there are no proposed projects on Very-High Priority islands or tracts for a given grant cycle, then DWR can fund projects for High Priority islands or tracts (and Other Priority islands or tracts if there are no proposed projects for High Priority islands or tracts). Therefore, this was a conservative analysis to demonstrate potential economic impacts of the proposed amendment.

Using the method and data described above, each dollar invested in levee improvements on High Priority or Other Priority islands or tracts that are included in this analysis reduces expected annual damages (EAD) by approximately \$0.037 (that is, provides an expected benefit of \$0.037). Therefore, reducing levee improvement expenditures on High Priority or Other Priority islands or tracts by \$47.1 million would reduce benefits to those islands or tracts by \$1.77 million. This loss is largely offset by benefits on other islands or tracts. Every dollar invested in levee improvements on Very-High Priority islands or tracts included in the analysis reduces EAD by (provides a benefit of) \$0.032. Therefore, increasing expenditures by \$47.1 million on Very-High Priority islands or tracts would increase benefits to those islands or tracts by \$1.50 million. It follows that the net quantifiable economic cost equals \$0.27 million. On an average annual basis, the net quantifiable economic cost, in terms of EAD, equals \$38,100 per year. To put this number in perspective, with around 530,000 acres<sup>12</sup> in agriculture in the Delta, this represents about \$0.07 per acre in agricultural production.

Prospective changes in EAD could be capitalized into Delta island or tract land values. Using an interest rate of 5.5%, consistent with current private lending rates, an average annual increase in EAD of \$38,100 would cause a reduction of approximately \$700,000 in capitalized land values, or approximately \$1.32 per acre, which represents less than 0.013% of the gross value of Delta agricultural land (\$5.3 billion).<sup>13</sup> Therefore, the quantifiable net present value economic cost of reallocating \$47.1 million from High Priority or Other Priority islands or tracts to Very-High Priority islands or tracts is approximately \$700,000 or \$1.32 per acre. This analysis assumes that expenditures would be spread uniformly across all Very-High Priority islands or tracts. If expenditures are targeted to Very-High Priority islands or tracts that provide the greatest economic

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<sup>12</sup> Delta as a Place: Agriculture White Paper (Prepared for Consideration by the Delta Stewardship Council). December 2010. Available at: <http://deltacouncil.ca.gov>

<sup>13</sup> California Chapter of the American Society of Farm Managers and Rural Appraisers. Trends in Agricultural Land & Lease Values 2017. Delta Agricultural Land Values. Using an average of \$10,000 per acre (range of \$8,500 - \$20,000).

return (largest reduction in EAD per dollar levee investment), then the proposed amendment would provide a (small) quantifiable net economic benefit rather than an economic cost.<sup>14</sup> Note, again, that total levee improvement expenditures are unchanged. All costs are prospective and do not reflect actual outcomes.

Any economic costs to related sectors of the economy (e.g. suppliers to farming operations) are likely to be negligible. Land is typically an asset and not a separate value-added economic activity that would affect other regional spending or businesses. A decrease in land values could cause small economic impacts if landowners change spending habits as a result of this change in asset value, or through changes in commission for real estate transactions through lower commission from land sales. A conservative approach to illustrate a potential economic cost was applied using the Impacts for Planning and Analysis (IMPLAN) model.<sup>15</sup> The decrease in capitalized land value (\$700,000) was modeled as a decrease in land real estate commission sales for Delta counties using a commission rate of 6% (net decrease of \$42,000). The multiplier of 1.47 implies a total change in gross output value of approximately \$60,000. Under this conservative assumption, the total net present value cost would be \$760,000, or \$1.43 per acre, which represents less than 0.014% of the gross value of Delta agricultural land (\$5.3 billion).

In summary, the direct economic cost of the proposed amendment to businesses, jobs, and individuals is negligible because it could change the timing of State investment in Delta levees but would not change the overall level of investment. See sections 7 to 10 below for additional information. The direct economic cost would be a result of a change in the distribution of prospective benefits from levee improvement expenditures. The proposed amendment could cause indirect economic costs of up to \$38,100 per year in EAD by affecting the timing and location of State investment in Delta levees, or about \$0.07 per acre in agricultural production. Because of the small magnitude of this prospective change there would be no effect on housing costs (see also section 9 below). Expressing these annual costs in terms of the change in net present land value and including potential multiplier effects, the capitalized cost equals \$760,000, which represents less than 0.014% of the gross value of Delta agricultural land.

## 6. Economic Benefits of the Proposed Amendment

The proposed amendment to Section 5012 would provide economic benefits by prioritizing levee improvement expenditures to islands or tracts that would realize the greatest benefit to State interests, as identified in the DLIS. The DLIS priorities were developed based on an analysis of quantified and unquantified costs and benefits, and a public review process to solicit feedback and refine the final prioritization. The DLIS does not set the amount of expenditure for levee improvement (i.e., the cost); rather, it

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<sup>14</sup> Every dollar invested in levee improvements on Very-High Priority islands or tracts included in the analysis reduces EAD by an average of \$0.032, ranging from \$0.0576 to \$0.0177. Using the higher end of the range (\$0.0576), the proposed amendment would cause a direct benefit of \$2.71 million, which more than offsets the direct cost of \$1.77 million (positive net benefit of \$0.94 million).

<sup>15</sup> MIG Inc. 2014. Impacts for Planning and Analysis Model. <http://www.implan.com/>. 2014 R3 California Counties Database (Delta Counties).

sets priorities for how a given level of expenditure should be allocated based on benefits that generally fall into the following categories:

- Reduced risk of damage to property and infrastructure, including reduced cost to repair failed levees
- Reduced annual risk of fatalities from a levee failure
- State water supply reliability benefits
- Ecosystem/habitat benefits
- “Delta as a Place” benefits for cultural, recreational, and natural resource, and agricultural qualities that distinguish the Delta
- Improving transparency and public awareness of State levee funding decisions

The Delta Reform Act provides goals and objectives for the implementation of Delta Plan policies to achieve the coequal goals (Wat. Code § 85054) of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem, all in a manner that protects and enhances the unique cultural, recreational, natural resources, and agricultural values of the Delta as an evolving place. The DLIS, and therefore the proposed amendment to Section 5012, improves Delta island or tract resiliency by effectively targeting investments to the islands or tracts that provide the greatest benefits toward achieving the coequal goals. This is expected to result in benefits to State and local public agencies or private individuals and businesses in the State from improvements in water supply reliability, ecosystem restoration, flood risk reduction, and land use policies. The proposed amendment would increase these benefits by ensuring that levee improvement investments provide the greatest return to the State.

The proposed amendment would also provide monetized benefits to islands or tracts that realize a reduction in EAD. As described under Section 5, such benefits would equal \$1.5 million or approximately \$210,000 per year. These benefits are included in the net costs described under Section 5. However, these benefits are prospective and do not reflect actual outcomes.

## 7. Employment (Job) Estimated Effects

As described above under Section 5, Economic Costs of the Proposed Amendment, the total quantifiable cost of the proposed amendment to Section 5012 equals \$38,100 (\$0.07 per acre) or approximately \$700,000 (\$1.32 per acre). This represents the prospective reduction in total land value calculated as the cost of increased EAD on islands and tracts in the Delta. The proposed amendment could reallocate some Delta levee investments to higher priority islands or tracts, but the total expenditure on Delta levee investments does not change.

The change in land value does not directly affect jobs and does not cause any quantifiable indirect or induced economic effects that would significantly affect regional employment. Land is typically an asset and not a separate value-added economic activity that would affect regional employment. A decrease in land values could cause

small economic impacts if landowners change spending habits as a result of this change in asset value, and through changes in commission for real estate transactions through lower commission from land sales. These effects are likely to be small and therefore the resulting impact on jobs is likely to be negligible.

A conservative approach to illustrate potential economic impacts was developed using the IMPLAN model.<sup>16</sup> The decrease in capitalized land value (\$700,000) was modeled as a decrease in land real estate commission sales for Delta counties using a commission rate of 6% (net decrease of \$42,000 in real estate business income). The implicit assumption is that all land affected by the change in EAD would be sold, and that local real estate businesses would lose the commission income. This change is modeled as a reduction in North American Industry Classification System (NAICS) 530210, real estate industries. The employment multiplier of 8.9 implies a reduction of 0.3 jobs. The net effect is estimated to be negligible.

## 8. Estimated Effects on Small Businesses

The direct fiscal cost of the proposed amendment to Section 5012 falls on State agencies, not on businesses. As described under employment effects, businesses could be affected indirectly through changes in landowner expenditures or real estate sales commission, but this effect is negligible. Since the effect on general businesses is negligible, it follows that small businesses (using the consolidated definition of small business set forth in Cal would not be disproportionately affected or overly burdened by the proposed amendment.

## 9. Estimated Effects on Housing Costs

The proposed amendment to Section 5012 does not have any direct effect on housing costs. Changes in land values caused by the change in EAD could have a small indirect effect on housing costs by pushing down rental rates. As described under Section 5, this effect is likely to be negligible. Therefore, there is no evidence that there would be an effect on housing costs.

## 10. Other Economic Impacts to Businesses or Individuals

The proposed amendment to Section 5012 does not change the overall level of State investment in Delta levee improvements and is unlikely to have any significant effect on individuals or businesses in the State.

As described in section 5 above, the proposed amendment could result in a net economic cost (higher EAD as a result of reallocation of prospective levee investments) of \$38,100 per year (\$700,000 in net present value) and any additional indirect economic effects are likely to be negligible (less than \$60,000). Since the proposed amendment does not change the total State investment in Delta levee improvements, it

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<sup>16</sup> MIG Inc. 2014. Impacts for Planning and Analysis Model. <http://www.implan.com/>. 2014 R3 California Counties Database (Delta Counties).

is unlikely to have any effect on local fees, assessments, or rates for individuals or businesses.

Since the proposed amendment would have a negligible effect on small businesses, the proposed amendment would not have a significant statewide adverse effect on the ability of those businesses to compete. Furthermore, the proposed amendment would not affect the creation of new businesses or elimination of existing businesses within the State. In addition, the proposed amendment would not affect the expansion of businesses currently doing business within the State.

The proposed amendment does not require additional business reports or the use of specific technologies or equipment.

## 11. Delta Stewardship Council Fiscal Costs

The estimated fiscal cost of the proposed amendment to the Council is the additional resources required to review Delta levee investments reports prepared by DWR. This involves staff time to receive, review, comment, and coordinate on each annual report. There is no fiscal cost attributable to the change in Delta levee investments (e.g. capital investments in levee improvements) because the proposed amendment does not change the total level of funding available for Delta levee improvements.

The Council fiscal costs were approximated based on the fiscal cost estimate from the 2012 Cost Analysis<sup>17</sup> and personal communication with Council staff familiar with the proposed amendment. Council staff effort to review annual State reports is expected to include a mix of legal and senior technical staff. For budgeting purposes, the annual staff cost, including all salary and fringe benefits, was estimated to equal \$94,000. This is consistent with the estimated Council fiscal cost used in the 2012 Cost Analysis, which equals approximately \$90,000 when indexed to current dollars using the GDP Implicit Price Deflator.<sup>18</sup>

The additional cost of preparing an annual report is generally moderate and can be completed by existing staff that are familiar with Delta levee investments and the Delta Plan, thus it is likely these additional costs would be absorbed within existing budgets.

## 12. Other State and Local Public Agencies Fiscal Costs

Under the proposed regulation, DWR would be required to prepare and submit a written annual report describing expenditures on Delta levee improvements, and the relative reduction in risk achieved by those investments. As described above under Section 5, Economic Costs of the Proposed Amendment, the proposed regulation could cause levee improvement expenditures to be targeted to Very-High Priority islands or tracts, but the overall level of State funding is unchanged, and the proposed regulation does

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<sup>17</sup> Council. 2012. Cost Analysis. Cost Analysis for Proposed Delta Plan Regulations in Support of Economic and Fiscal Impact Statement. November 2012.

<sup>18</sup> GDP implicit Price Deflator. 2018. Downloaded from the St. Louis Federal Reserve. Accessed December 4, 2018.

not impose a mandate on local agencies that would cause them to incur any additional costs.

## 12.1 Other State Agency Fiscal Costs

Other State agency (DWR) fiscal costs were estimated based on a review of the regulatory requirements by DWR and Council staff familiar with the proposed regulation. For budgeting purposes, the annual DWR staff cost, including all salary and fringe benefits, was estimated to equal \$274,000.<sup>19</sup> This includes all direct staff time and fringe benefits for staff including legal, program manager review, and project leads to calculate estimated reductions in risk, prepare annual reports and coordinate with Council.

The cost to the State includes time to consult with Council staff, analyze risk reduction achieved through levee investments, prepare the annual report indicating whether expenditures are consistent with DLIS prioritization, and describe how it deviates from the DLIS prioritization, if necessary. The additional cost of preparing an annual report is generally moderate and can be completed by existing staff that are familiar with Delta levee investments and the Delta Plan, thus it is likely these additional costs would be absorbed within existing DWR budgets.

## 12.2 Local Public Agency Fiscal Costs

There are no direct effects to local public agencies or school districts. Local agencies may incur indirect administrative costs to monitor Council activities, attend meetings, and review documents and findings related to DLIS prioritization, but these costs are not a result of compliance with the proposed amendment. Any such costs would be absorbed within existing budgets and resources.

## 13. Alternatives to the Proposed Amendment

Alternatives to the proposed amendment are described in the main body of the ISOR. California Government Code section 11346.2(b)(4)(A) requires the Council to consider and evaluate reasonable alternatives to the proposed regulatory action and provide reasons for rejecting those alternatives. Five alternatives were identified:

- Alternative 1 – Retain Existing Section 5012 Regulation (No Action)
- Alternative 2 - Repeal Existing Section 5012 Regulation
- Alternative 3 - Prioritize Levee Investments in High Risk to Life or Property Areas
- Alternative 4 – Prioritize Levee Investments in Delta Wetland Restoration Areas and High Risk to Life and Property Areas
- Alternative 5 – Prioritize Levee Investments in Through-Delta Conveyance Areas and High Risk to Life and Property Areas

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<sup>19</sup> DWR. 2019. Delta Memorandum of Understanding (MOU) Working Group Meeting with Delta Stewardship Council (Council) and Central Valley Flood Protection Board (CVFPB). Attendees: Laura Hollender (DWR), Chris Williams (DWR), Erin Mullin (Council), Ryan Stanbra (Council), Meghan Sullivan (CVFPB), and Erica Bishop (GEI). January 23, 2019.

### **13.1 Alternative 1 – Retain Existing Regulation (No Action)**

Under Alternative 1, the Council would not take any action to amend Section 5012. The “interim” priorities currently set forth in Section 5012 for State investment in Delta flood risk management would remain in place and continue to guide discretionary State investments in Delta flood risk management. Alternative 1 would have no additional or reduced economic impact relative to the current regulation as analyzed<sup>20</sup> and adopted in 2013.

Alternative 1 was eliminated from consideration. The existing regulation states that prior to the completion and adoption of the updated priorities developed pursuant to Water Code section 85306, the interim priorities included in the regulation shall guide discretionary State investments in Delta flood risk management. The interim priorities established in the 2013 Delta Plan were adopted with the intent to update in the future.

### **13.2 Alternative 2 – Repeal Existing Section 5012 Regulation**

Under Alternative 2, the Council would act to repeal Section 5012. The “interim” priorities set forth in Section 5012 for State investment in Delta flood risk management would be repealed and there would be no regulation to identify long-term priorities for State investments in Delta levee operation, maintenance, and improvements. Rather, the DLIS priorities would be implemented as a non-regulatory part of the Delta Plan. Alternative 2 would eliminate any economic impacts of section 5012 of the current regulation as analyzed and adopted in 2013.

Alternative 2 was eliminated from consideration because Water Code section 85306 requires the Delta Plan to recommend priorities for State investments in Delta levees, including project and non-project levees.

### **13.3 Alternative 3 – Prioritize Levee Investments in High Risk to Life or Property Areas**

Alternative 3 would focus investment priorities on levee improvements at islands or tracts identified as having a high risk to life or property, including urban and urbanizing areas of Sacramento, West Sacramento, and metropolitan Stockton. Levee improvements that support other State interests (such as improving Delta ecosystem conditions or maintaining water supply corridors) would still occur but after prioritizing investments in areas with high risk to life or property. Continued funding would be provided for maintenance of levees throughout the Delta where authorized by Water Code section 12980 et seq. and consistent with the recommendations of the Central Valley Flood Protection Board (CVFPB).

The DLIS Final Report states that it followed “the Council’s directive to rank risk to loss of life in the Delta as most important,”<sup>21</sup> and the islands and tracts having the highest

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<sup>20</sup> Council. 2012. Cost Analysis. Cost Analysis for Proposed Delta Plan Regulations in Support of Economic and Fiscal Impact Statement. November 2012.

<sup>21</sup> Council. 2017. Delta Levees Investment Strategy Final Report, Available at: <http://deltacouncil.ca.gov> p. ES-4.

risk to life are included as Very-High Priority. However, the DLIS did not provide a priority ranking and corresponding monetized assessment of an alternative that emphasized loss to life and property even more than the recommended strategy. Therefore, there is insufficient information upon which a quantitative economic assessment could be based. However, the economic and fiscal impacts described above for the proposed amendment are representative of the general magnitude and timing of impacts that could be expected under Alternative 3. Alternative 3 would provide somewhat greater benefits in the categories of reduced risk to life and property and somewhat lower level of benefits in the other three categories (water supply, ecosystem, and Delta as a place).

There is no evidence that Alternative 3 would be more effective than the proposed amendment in prioritizing Delta levee investments, be as effective and less burdensome to affected individuals or businesses, or more cost effective to affected individuals or businesses. As with the proposed amendment, economic impacts to private businesses or individuals are negligible. Alternative 3 was eliminated from consideration because although it would achieve, or partially achieve, many of the objectives of the proposed amendment, it would not prioritize levee investments that protect ecosystem enhancements that provide high benefits over other types of levee investments.

#### **13.4 Alternative 4 – Prioritize Levee Investments in Delta Wetland Restoration Areas and High Risk to Life and Property Areas**

Alternative 4 focuses on prioritizing investments in levee improvements at islands or tracts identified as having benefits to Delta ecosystems and high risk to life or property. Levee improvements that support other State interests (such as maintaining water supply corridors) would still occur but after prioritizing investments in Delta wetland restoration and high risk to life and property areas. Continued funding would be provided for maintenance of levees throughout the Delta where authorized by Water Code section 12980 et seq. and consistent with the recommendations of the CVFPB.

The DLIS did not provide a priority ranking and corresponding monetized assessment of an alternative that emphasized Delta wetland restoration more than the recommended strategy. Therefore, there is insufficient information upon which a quantitative economic assessment could be based. However, the economic and fiscal impacts described above for the preferred alternative (the proposed amendment) are representative of the general magnitude and timing of impacts that could be expected under Alternative 4. Alternative 4 would provide somewhat greater benefits (relative to the proposed amendment) for Delta ecosystem and habitat and somewhat lower level of benefits in the other categories (loss to life and property, water supply, and Delta as a place).

There is no evidence that Alternative 4 would be more effective in prioritizing Delta levee investments, be as effective and less burdensome to affected individuals or businesses, or more cost effective to affected individuals or businesses. As with the proposed amendment, economic impacts to private businesses or individuals are negligible. Alternative 4 was eliminated from consideration because although it would achieve or partially achieve many of the objectives of the proposed amendment, it



would not prioritize investments that contribute to protecting water conveyance and diversion infrastructure over other types of levee investments.

### **13.5 Alternative 5 – Prioritize Levee Investments in Through-Delta Conveyance Areas and High Risk to Life and Property Areas**

Alternative 5 focuses on prioritizing investments in levee improvements at islands or tracts identified as having high risk to water supply, life and property. Levee improvements that support other State interests (such as improving Delta ecosystem conditions) would still occur but would be prioritized lower than investments in high risk to water supply, life and property areas. Continued funding would be provided for maintenance of levees throughout the Delta where authorized by Water Code section 12980 et seq. and consistent with the recommendations of the CVFPB.

The DLIS did not provide a priority ranking and corresponding monetized assessment of an alternative that emphasized water supply reliability and conveyance more than the recommended strategy. Therefore, there is insufficient information upon which a quantitative economic assessment could be based. However, the economic and fiscal impacts described above for the preferred alternative (the proposed amendment) are representative of the general magnitude and timing of impacts that could be expected under Alternative 5. Alternative 5 would provide somewhat greater benefits (relative to the proposed amendment) for water supply reliability and conveyance and somewhat lower level of benefits in the other categories (loss to life and property, ecosystem, and Delta as a place).

There is no evidence that Alternative 5 would be more effective in prioritizing Delta levee investments, be as effective and less burdensome to affected individuals or businesses, or more cost effective to affected individuals or businesses. As with the proposed amendment, economic impacts to private businesses or individuals would be negligible. Alternative 5 was eliminated from consideration because although it would achieve or partially achieve many of the objectives of the proposed amendment, it would not prioritize levee investments that protect ecosystem enhancements that provide high benefits over other types of levee investments.

## **14. Summary of Economic Impacts and Fiscal Costs in Form STD 399**

The proposed amendment to Section 5012 would encourage State investments in Delta levee improvements that are consistent with DLIS priorities. The EFIA described the purpose, data, methods, and results of the economic and fiscal impact analysis. This section summarizes the findings of the economic and fiscal analysis for relevant sections of the STD 399, and identifies those findings with the relevant the EFIA.

### **14.1 Estimated Private Sector Cost Impacts (STD 399 Economic Impact Statement Section A.)**

The proposed amendment results in a negligible economic impact because the proposed amendment could affect the timing of levee investment but does not change

the overall level of funding (see Section 3 for overview and Section 4 for methodology). The EFIA demonstrates that the proposed amendment would result in:

- Negligible direct costs to businesses, employees, or individuals (Section 5)
- Negligible direct effect on jobs (Section 7) negligible
- Negligible direct costs to small businesses (Section 8)

The proposed amendment could cause economic costs (see Section 5) totaling approximately \$38,100 per year.

The proposed amendment does not impose reporting requirements on the private sector and is not prescriptive instead of performance based. Since there are no effects on businesses, the proposed amendment does not affect the ability of California businesses to compete with other states.

The Council determined that the total impact (including economic and fiscal costs) of the proposed regulation is less than \$10 million.

#### **14.2 Estimated Costs (STD 399 Economic Impact Statement Section B)**

The total statewide cost of the proposed amendment to businesses and individuals is negligible because the proposed amendment could affect the timing of levee investment but does not change the overall level of funding. Any indirect costs to businesses, small businesses, or individuals are negligible (see Sections 5, 8, and 10). The proposed amendment has no direct effect on housing costs (see Section 9). Other potential indirect economic costs to businesses and individual may include the maximum indirect cost of a change in EAD on Delta island or tract land values, which is conservatively estimated to equal \$38,100 per year (see Section 5). This represents less than \$0.07 per acre per year or less than 0.014% of the gross value of agricultural land in the Delta when expressed as a capitalized value.

The purpose of the proposed amendment to Section 5012 is to implement and make specific Water Code section 85306 to provide guidance for State investments to maintain, improve or rehabilitate Delta levees while advancing the coequal goals. There is no comparable federal regulation because the Delta is unique to California.

#### **14.3 Estimated Benefits (STD 399 Economic Impact Statement Section C)**

The proposed amendment would create monetizable and nonmonetizable benefits. Prioritizing investment in Delta levees would generate the following types of benefits:

- Reduced risk of damage to property and infrastructure, including reduced cost to repair failed levees
- Reduced annual risk of fatalities from a levee failure
- State water supply reliability benefits
- Ecosystem/habitat benefits
- “Delta as a Place” benefits from special qualities that distinguish the Delta

Most of these benefits are nonmonetized except for reduced risk of damage to property and infrastructure, including the reduced cost to repair failed levees. The monetized benefit from reduced damage to property and infrastructure (EAD) equals \$210,000 per year (see Section 6).

The benefits of the proposed amendment are the result of specific statutory requirements and specific goals developed by Council based on statutory authority. As summarized in the Delta Reform Act (Wat. Code § 85054), implementation of Delta Plan policies would provide the best means to achieve the coequal goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem, all in a manner that protects and enhances the unique cultural, recreational, natural resources, and agricultural values of the Delta as an evolving place. The proposed amendment to Section 5012 improves resiliency of Delta islands and tracts by targeting investments to the islands or tracts that provide the greatest benefits. This in turn would be expected to result in benefits to State and local public agencies or private individuals and businesses in the State resulting from changes in water supply reliability, ecosystem restoration, flood risk, or land use policies. The proposed amendment would increase these benefits by ensuring that levee improvement investments provide the greatest return to the State.

#### **14.4 Alternatives to the Regulation (STD 399 Economic Impact Statement Section D)**

Section 13 describes alternatives to the proposed amendment and the approach to quantifying the costs and benefits of each proposed alternative, including quantification issues. Total statewide costs under the proposed amendment and all alternatives would be similar. Economic impacts to private businesses or individuals under the proposed amendment and all alternatives would be negligible. There is no evidence that any of the alternatives would be more effective in prioritizing Delta levee investments, be as effective and less burdensome to affected individuals or businesses, or more cost effective to affected individuals or businesses.

The proposed amendment and all alternatives do not mandate the use of specific technologies or equipment or prescribe specific actions or procedures.

#### **14.5 Major Regulations (STD 399 Economic Impact Statement Section E)**

The Council determined that the estimated economic impact to business enterprises and individuals located in or doing business in California is of the proposed amendment is less than \$50 million in any 12-month period, which is less than the threshold for a Major Regulation. See Section 5 for a discussion of economic costs, and Sections 11 and 12 for a discussion of fiscal costs.

The proposed amendment would create monetizable and nonmonetizable benefits by prioritizing Delta levee investments consistent with the DLIS. Section 6 summarizes all monetized and nonmonetized benefits of the proposed amendment identified by Council including, where applicable, benefits to health, safety, and welfare of California residents, worker safety, and the state's environment and quality of life.

#### **14.6 Fiscal Effect on Local Government (STD 399 Fiscal Impact Statement Section A)**

There would be no direct costs or savings to local public agencies. Local public agencies may incur indirect administrative costs to monitor Council activities, attend meetings, and review documents and findings related to DLIS prioritization, but these costs would not be required in order to comply with the proposed amendment. Section 12.2 provides a discussion of local agency fiscal costs.

#### **14.7 Fiscal Effect on State Government (STD 399 Fiscal Impact Statement Section B)**

The estimated fiscal effects of the proposed amendment to Section 5012 on State agencies would occur in several forms. First, DWR would be required to prepare an annual report describing investments in Delta levees. Second, Council staff would be required to review that report and coordinate as necessary with DWR staff. Finally, other state agencies may also incur indirect administrative costs.

Sections 11 and 12 summarize State fiscal costs. The total cost is estimated to equal \$368,000 and would be absorbed within existing State (Council and DWR) budgets. The additional expenditures in the current State Fiscal Year are likely to be less than \$368,000 and could be as low as zero.

#### **14.8 Fiscal Effect of Federal Funding on State Programs (STD 399 Fiscal Impact Statement Section C)**

No direct fiscal impacts are anticipated to federally funded State agencies or programs as a result of the proposed amendment because the proposed amendment could affect the timing of levee investment but does not change the overall level of funding.