

## **Attachment 1. Summary of Comments Received and Revisions Incorporated into May 2020 draft as a Result**

This document summarizes the comments received from the public, independent scientific peer reviewers, and the Delta Independent Science Board (ISB) on the November 2019 preliminary public review draft Ecosystem Amendment, and describes proposed changes incorporated into the May 2020 draft of the Ecosystem Amendment as a result.

### **A. Public Comments**

This section (Public Comments) summarizes comments provided by agencies, organizations, and members of the public on the November 2019 preliminary public review draft and resulting proposed changes incorporated into the May 2020 draft. The discussion is broken down as follows:

1. General Themes
2. Comments on Core Strategies, Policies, and Recommendations
3. Comments on Performance Measures

#### **1. General Themes**

##### **Best Available Science**

Commenters suggested revisions to the narrative to refine and strengthen scientific information regarding climate change, flows, food web, aquatic conditions, harmful algal blooms, water quality conditions, and contaminants. Some provided alternative or additional references/citations. Staff reviewed all literature and reports proposed in the comment letters and incorporated alternative and additional references where appropriate. While all of the proposed literature and reports were found to be *relevant*, not all met the Council's Best Available Science criteria for *objectivity*, *timeliness*, and/or *peer review*. Thus, not all references proposed by commenters were included in the revisions.

##### **Adaptive Management**

Commenters were interested in how components of the Ecosystem Amendment would be adaptively managed to ensure efficacy and avoid unintended consequences of policies, recommendations, and particularly performance measures (PMs). Staff refined and added language to clarify links between the Ecosystem Amendment and the Council's existing processes to review and update the Delta Plan (i.e., Five-Year Reviews, One-year and Five-year PM tracking) to the PM datasheets and Appendix E. All proposed PMs were revised to identify five-year adaptive management procedures

(outlined in Appendix E), and most proposed PMs were revised to include an 'Interim Performance Assessment'.<sup>1</sup>

### Priorities and Timelines

Commenters requested additional detail on priorities and timelines for proposed amendments to policies and recommendations. Some expressed concerns related to the effective date of proposed regulatory policies and impact of the proposed chapter amendments on existing projects and suggested the possibility of exempting existing efforts from the proposed regulatory policy changes.

The effective date of proposed regulatory changes would typically be on one of four quarterly dates based on when the final regulations are filed with the Secretary of State after the completion of the rulemaking process. The rulemaking process would proceed after the Council completes the CEQA review process and adopts the Delta Plan Ecosystem Amendment.

With regard to concerns about the impact of those changes on existing projects, staff proposes the following:

- New Policy (ER P "A"): All covered actions would be subject to New Ecosystem Restoration Policy "A" (ER P "A") starting on the applicable quarterly effective date after filing with Secretary of State. Staff do not anticipate that existing projects would need to be redesigned or reconfigured in order to demonstrate consistency with this policy. Project-level data collection from this policy would be most useful if existing, planned projects are included.
- Proposed Revision (ER P2, ER P3, ER P4): Covered actions for which a Notice of Preparation (NOP), Negative Declaration (ND), or Mitigated Negative Declaration (MND) has been issued prior to the regulatory effective date would be exempt from the amended ER P2, ER P3, and ER P4 for a period of two (2) years after the effective date of the amended regulation. Such covered actions would certify consistency with the Delta Plan using the current versions of those regulations. The amended regulations would become applicable to these projects at the expiration of the two (2) year "grace period."

### Institutional Coordination and Implementation

Commenters requested clarification on the application and implementation of proposed policies, as well as who is leading implementation. Staff revised the draft policies and recommendations to add more specificity regarding agency roles when applicable. Staff also revised the narrative to underscore the importance of a well-coordinated and collaborative approach with the Delta community to promote successful restoration.

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<sup>1</sup>PM 4.12 Subsidence Reversal for Tidal Reconnection has an earlier target date (2030) than the other PMs, and therefore did not require an interim target.

### Delta as an Evolving Place

Commenters noted that while restoration is important to a functioning system, it must not hinder the cultural, recreational, and agricultural values of the Delta. Stakeholders raised concerns about the impacts of restoration on agriculture, airports, sport fishing, and other existing uses in the Delta. Staff revised the narrative to clearly articulate these concerns. However, no changes to regulatory policies are proposed, as existing Delta as Place Policy 2 (DP P2) already requires that projects avoid conflicts with existing and proposed land uses when siting ecosystem restoration projects. Additionally, New ER P “A” requires acknowledgment of links between human wellbeing and a healthy ecosystem as set forth in the proposed Regulatory Appendix 3A, which lists example social benefits of conservation and restoration projects within four categories: cultural, recreational, agricultural, and natural resource benefits.

### Indigenous Communities

In response to public and Delta ISB comments, staff revised the narrative to elaborate on indigenous communities’ land management practices and tribal settlements within the context of Delta historical ecology. Commenters requested that the Council prepare a revised map of the historical Delta including indigenous communities, to provide a balanced comparison to the modern Delta map panel, which includes major cities. However, staff feel that this addition should not be made without additional tribal consultation, as information regarding settlements may be confidential and local tribes may not want this material to be depicted.

### Use of Terms

Stakeholders requested additional discussion or clarification regarding use of terms/concepts including *biodiversity*, *special-status species*, *valued species*, *managed wetlands*, *nutrient cycling*, *environmental justice*, and *disadvantaged communities*. These terms were clarified in the narrative, the proposed regulatory definitions, or both. In response to comments received, staff proposes to add existing statutory definitions for *environmental justice* and *disadvantaged communities* into the Delta Plan’s proposed regulatory definitions.

## **2. Comments on Core Strategies, Policies, and Recommendations**

### Core Strategy 1 (Create More Natural, Functional Flows)

Commenters requested additional discussion of flows and their impact on residence times, plankton communities, native fish species, and related topics. Regarding functional flows, some commenters voiced concern that the concept is hypothetical/untested and may be inapplicable to a system like the Delta. Some voiced concern that the Ecosystem Amendment narrative and regulatory policies prioritize restoration actions over additional flow and suggested that the Delta needs a restored natural hydrograph/flow regime tailored to aquatic ecosystem needs—rather than a regime managed for water supply and quality (i.e., salinity). Additionally, comments requested a more detailed discussion about the effects of exports, reverse flows, and entrainment on fish populations.

Commenters provided the following input on the policy and recommendation related to Core Strategy 1:

- ER P1. Delta Flow Objectives (NO CHANGE) – ER P1 requires that the SWRCB’s Bay Delta Water Quality Control Plan flow objectives be used for determining consistency with this policy. The November 2019 preliminary public review draft did not propose any changes to this policy. A commenter proposed to change the reference in Policy ER P1 subsection (a) from “SWRCB Water Quality Control Plan” to “Bay-Delta Plan” and related non-substantive wording changes, and proposed wording changes to Policy ER P1 subsection (b) to expand the scope of Policy ER P1 to include water quality in addition to flows. Policy ER P1 is not proposed to be amended as part of the proposed Ecosystem Amendment. Water quality is covered in the Chapter 6 (Improve Water Quality to Protect Human Health and the Environment) of the Delta Plan. Staff also revised the narrative to add clarifications regarding the objectives of the Bay-Delta Plan.
- ER R1. Update Delta Flow Objectives (REVISED) – The November 2019 preliminary public review draft proposed that this recommendation include regular updates to Delta flow objectives (rather than specifying a single date), and that updates be made by SWRCB in response to changing conditions due to climate change, in consultation with the Delta Science Program on adaptive management and the use of best available science. One commenter requested a more detailed description of the adaptive management framework and how stakeholders may be involved, while another suggested revised language to clarify the interpretation/meaning of the policy. A description of the adaptive management framework is addressed under Core Strategy 5 and in existing Delta Plan Appendix 1B.

Core Strategy 2 (Restore Ecosystem Function)

Some commenters expressed concern that the narrative relies too heavily on habitat restoration projects, asserting that such projects may have limited beneficial impact on primary productivity, water quality, and species recovery. In addition, commenters voiced concern regarding impacts restoration efforts or levee modifications might have on existing land uses (e.g., agriculture, critical public infrastructure).

Commenters provided the following input on the policies and recommendations related to Core Strategy 2:

- New ER Policy “A”. Disclose Contributions to Restoring Ecosystem Function and Providing Social Benefits (NEW) – Commenters voiced concern over the potential for undue burden of the new reporting requirements associated with covered actions subject to ER P “A”. In addition, commenters expressed concern about the proposed weighting/validity of the priority attributes.
  - While ER P "A" would create additional reporting requirements for agencies proposing projects that include protection, restoration, or

enhancement of the Delta ecosystem, the regulation would collect useful information on the quality of projects that are funded and implemented, and track agencies' progress toward increasing the relative share of high-quality restoration projects.

- The policy language has been simplified in response to comments that the language was unclear and overly complex.
- In the November 2019 preliminary public review draft of Appendix 3A, Priority Attribute 5 (Contribution to the Recovery of Special-Status Species) was structured as a prerequisite to qualify for an Ecosystem Restoration Tier but did not count toward the score associated with a particular Tier. In response to comments regarding attribute weights, ER P "A" was revised to require that projects "demonstrate [that they have] one or more of the five priority attributes," and Appendix 3A was revised so that each of the five priority attributes now has equal weight, including Contribution to the Recovery of Special-Status Species.
- Achieving a high project tier is not a prerequisite to achieving consistency with the Delta Plan. However, proposed revisions to ER P "A", would require a project to have at least one priority attribute to be consistent.
- ER P4. Expand Floodplains and Riparian Habitats in Levee Projects (REVISED) – Commenters voiced concern over regulatory burdens related to the both the existing and proposed requirements associated with levee projects. In addition, some requested clarification on how the priority locations for floodplain expansion were identified and selected.
  - The intent of this policy is to ensure consideration of opportunities to implement multi-benefit projects where new flood control works and capital improvements to existing flood control works is being undertaken. Both the existing policy and the proposed amendments to this policy do not apply to ongoing levee maintenance activities. The proposed amendments to this policy are intended to clarify the types of levee projects that the policy applies to. No further changes to the policy are proposed in the May 2020 draft.
  - Compared to the current regulation, the proposed amendments (as included in both the November 2019 and May 2020 draft Appendix 8A) would reduce the number of Delta levee segments required to consider alternatives that physically expand the channel width. Alternatives that expand floodplains need only be implemented if feasible. Staff acknowledges that not all of the locations will be determined to be feasible following detailed analysis. However, the purpose of the policy is to ensure that detailed analysis is conducted to reach that conclusion.
  - The May 2020 draft of Appendix Q1 includes a section describing the methods used to update the floodplain expansion priority locations shown in Appendix 8A.

- New ER Recommendation “A”. Increase Public Funding for Restoring Ecosystem Function (NEW) – One commenter requested more detail on how this recommendation should be implemented, while others expressed concern regarding focusing funding on higher-Tier projects.
  - ER R “A” encourages that additional funding be provided for higher-Tier projects; it does not prohibit funding for lower-Tier projects.
  - The draft assigns implementation to the Delta Plan Interagency Implementation Committee (DPIIC) and also highlights that the California Department of Fish and Wildlife’s (CDFW) *Delta Conservation Framework* provides regional forums where alignment around restoration at multiple levels of government and with stakeholders can occur.
- New ER Recommendation “B”. Use Good Neighbor Checklist to Coordinate Restoration with Adjacent Uses (NEW) – Commenters expressed support for ER R “B.” Two commenters suggested a more detailed and comprehensive checklist relative to DWR’s Good Neighbor Checklist, with one commenter providing an alternative Good Neighbor Checklist for consideration. Moreover, a commenter requested that, in addition to restoration projects, the Good Neighbor Checklist also apply to levee projects.
  - The copy of the current Department of Water Resources (DWR) checklist has been removed from Appendix Q2 so that implementing agencies and local stakeholders have flexibility to identify a new checklist, or to make additions to the existing checklist.
  - ER R “B” applies to restoration projects, not levee projects (unless levee projects have an ecosystem restoration component).

Core Strategy 3 (Protect Land for Restoration and Safeguard Against Land Loss)

Staff revised the narrative in response to comments to clarify the types of activities (e.g. rice cultivation, managed wetlands) that can reverse subsidence, and describe the associated reductions in carbon emissions (rather than carbon sequestration).

Commenters provided the following input on the policies and recommendations related to Core Strategy 3:

- ER P2. Restore Habitats at Appropriate Elevations (REVISED) – Some commenters expressed concern that the elevation bands include locations that are inappropriate for restoration because restoration would impact existing land uses and infrastructure. In contrast, others contended that the elevation bands are overly limiting, diminishing the importance of other conservation actions, and constraining other valuable habitat restoration opportunities. One commenter requested that specific conservation actions related to *subsidence halting* and *subsidence reversal* be explicitly defined. Another expressed concern about how the policy would be implemented due to future uncertainties (e.g., climate change).

- With regard to concerns that elevation bands include locations that are inappropriate for restoration, staff wish to clarify that the Elevation Band Illustrative Map is not intended to identify specific locations that are appropriate for restoration. Rather, the map delineates six elevation bands across the entire Delta, and ER P2 requires that covered actions demonstrate that proposed restoration activities are appropriate for the elevation band in which they would be located. Impacts to agriculture, utilities, and levees would be analyzed and mitigated through CEQA analysis for individual restoration projects. No revisions were made in the May 2020 draft of this map.
- The limitations set by this policy, specifically in the Deep Subtidal Elevation Band, are intentional and a key driver behind the proposed amendments to ER P2. The scientific review and technical analyses underpinning the proposed amendment demonstrate that deeply subsided areas are not physically capable of reaching intertidal elevations by 2100. Other conservation activities are appropriate for deeply subsided areas (Appendix Q2 explains these activities based on the scientific literature).
- Staff has added table notes in Appendix 4A referencing the proposed regulatory definitions of *Subsidence Halting* and *Subsidence Reversal*.
- Staff added additional references to Appendix Q2 within the narrative to clarify expectations for the use of best available science in addressing future uncertainties, such as the rate of sea level rise.
- ER P3. Protect Opportunities to Restore Habitat (REVISED) – Commenters requested clarification on how priority habitat restoration areas (PHRAs) were identified, evaluated, and selected. Some stakeholders expressed concern about possible impacts or regulatory burdens that PHRAs might create for local land uses (such as agriculture or management of the Stone Lakes National Wildlife Refuge) and public safety projects.
  - The 2013 Delta Plan defines PHRAs as, "large areas within which specific sites may be identified for habitat restoration based on assessments of land use and other issues addressed through further feasibility analysis." To develop the PHRAs, the Council drew from the approach taken in the Ecosystem Restoration Program (ERP) Conservation Strategy (DFG 2011). Staff is not proposing amendments to the PHRA boundaries nor the substantive requirements of ER P3 as part of the Ecosystem Amendment.
  - Ongoing agricultural activities are not expected to be affected by ER P3, as only discretionary actions by public agencies that meet the definition of a covered action would need to demonstrate consistency with the Delta Plan.

- Levee projects (and other public safety projects) located in PHRAs should be designed to avoid adverse impacts to the opportunity to restore habitat, as is required by the current regulation.
- New ER Recommendation “C”. Fund Targeted Subsidence Reversal Actions (NEW) – Commenters voiced concern about limitations on restoration investments related to subsidence reversal. Commenters contend that restoration investments in deeply subsided areas are needed to support Delta agriculture and mitigate risks of levee failure. Commenters also note that many deeply subsided islands are owned by public agencies, who bear responsibility for halting and reversing subsidence. Although staff agrees with these comments, no further revisions to the recommendation are proposed. This recommendation is intended to distinguish restoration investments in subsidence reversal from subsidence reversal projects that have objectives other than restoration (e.g., projects focused on supporting agriculture or flood risk reduction). Subsidence reversal projects that use restoration funding should be prioritized in less subsided areas, with a greater likelihood of restoring ecosystem function through future tidal marsh restoration. Subsidence reversal activities to support Delta as Place objectives are treated in detail in Delta Plan Chapter 5. Chapter 5 includes a performance measure target of 30,000 acres of subsidence reversal in the Delta by 2030 (PM 5.2).
- New ER Recommendation “D”. Funding to Enhance Working Landscapes (NEW) – In response to commenter recommendations to characterize local district involvement in agricultural land management practices with greater precision, staff has revised the recommendation title and language, as well as the narrative to more accurately describe the role of resource conservation districts, and to highlight other types of local districts that are involved in working landscapes. Staff has removed references in the recommendation to grasslands protocol as recommended by a commenter.
- New ER Recommendation “E”. Develop and Update Management Plans to Halt or Reverse Subsidence on Public Lands (NEW) – A commenter suggested involving private entities when developing and updating management plans. While this recommendation does not preclude private entities from developing land management plans that halt or reverse subsidence, the focus is on public agencies advancing the public’s interest in halting and reversing subsidence. Therefore, no further change to this recommendation is proposed.

Core Strategy 4 (Protect Native Species and Reduce the Impact of Nonnative Invasive Species)

Commenters requested greater recognition of the cultural and ecological importance of some nonnative species (e.g., striped bass) in the narrative. In addition, a commenter requested that Hatchery and Genetic Management Plans (HGMPs) for fish hatcheries be more appropriately characterized in the narrative.



Commenters provided the following input on the policies and recommendations related to Core Strategy 4:

- ER R7. Prioritize and Implement Actions to Control Nonnative Invasive Species (REVISED) – In response to comments, staff has added the Department of Parks and Recreation, Division of Boating and Waterways to the list of agencies responsible for developing communication and funding strategies for nonnative invasive species control. Staff has also revised the recommendation to include funding management of known invasive species in addition to rapid response to new threats in response to a commenter request for stronger funding strategies to control existing nonnative invasive species.
- New ER Recommendation “H”. Prioritize Unscreened Diversions within the Delta (NEW) – A commenter requested clarification of the fundamental objective of this recommendation, which calls for agencies to prioritize actions to remove barriers to fish migration in the watersheds that lead to the Delta. Following scientific review feedback on corresponding PM 4.13, staff determined that while additional scientific information is needed to prioritize remediation of unscreened diversions, there is sufficient existing information to prioritize remediation of other types of barriers. Staff has revised this recommendation and PM 4.13 to focus on the need to collect additional data to inform prioritization of unscreened diversions within the Delta by 2030.
- New ER Recommendation “I”. Fund Projects to Improve Survival of Juvenile Salmon (NEW) – One commenter requested a greater emphasis on prioritizing migration corridors. Priority migration corridors identified in the draft Ecosystem Amendment are based on analyses from CALFED reports, Delta Vision, and the San Francisco Estuary Institute’s *A Delta Renewed* report. Staff emphasize that although further prioritization would help focus restoration funds, redundancy is a key attribute for improving resilient fish migration and the ecosystem as a whole.
- ER R8. Manage Hatcheries to Reduce Risk of Adverse Effects (REVISED) – Staff has revised the narrative and ER R8 to respond to comments on hatcheries. HGMPs are required for all hatcheries that may adversely affect natural origin and listed species beyond genetic impacts. A commenter noted that the recommendation should be limited to Central Valley hatcheries. One commenter stated that annual updates of HGMPs by hatchery operators have not been consistent. Annual updates to HGMPs are cataloged by the Council in an existing Chapter 4 administrative PM. Data for this PM was last updated on December 5, 2019.
- ER R9. Coordinate Fish Migration and Survival Research (REVISED) – A commenter requested further clarification on how the recommended coordination would be realized (i.e., funding and governance structure). The Council seeks to encourage greater coordination among existing agencies and researchers. Staff has modified the recommendation title and text to encapsulate fish migration and survival research more broadly to address a commenter’s concern that the policy

language relating to telemetry technology may be too limiting and could constrain future research efforts.

Core Strategy 5 (Improve Institutional Coordination to Support Implementation of Ecosystem Protection, Restoration, and Enhancement)

Commenters requested that additional agencies with authority related to restoration in the Delta be added to the narrative. Staff has revised Table 4-1 in the narrative to respond to these recommendations. Commenters also emphasized a need for increased agency coordination, along with the inclusion of local agencies. While the DPIIC is identified to implement Core Strategy 5 recommendations, staff recognizes that direct coordination with local agencies is also essential to implement Chapter 4 recommendations.

Stakeholders provided the following input on the recommendations related to Core Strategy 5:

- New ER Recommendation “F”. Support Implementation of Ecosystem Restoration (NEW) – Commenters advocated for funding strategies and permitting mechanisms to be available to all restoration projects, not just Tier 1 and 2 projects. Staff has not proposed revisions to this recommendation, as it intentionally focuses on Tier 1 and 2 projects as providing the greatest level of ecosystem benefit. This is not intended to prohibit or impede other types of projects, but rather to focus the energy of the interagency group on reducing barriers to the highest-benefit projects.
- New ER Recommendation “G”. Align State Restoration Plans and Conservation Strategies with the Delta Plan (NEW) – One commenter requested further clarification on the meaning of Central Valley Flood Protection Plan (CVFPP) Conservation Strategy alignment described in the recommendation. The purpose of this recommendation is to encourage agencies to evaluate their plans for consistency with the Delta Plan, and work through any inconsistencies through the proposed DPIIC subcommittee moving forward.

**Comments on Performance Measures**

Agencies, organizations, and members of the public provided comments on Delta Plan Appendix E, which contains proposed modifications and additions to Chapter 4 performance measures, and the accompanying data sheets. Commenters requested stronger justification for the selection of metrics, baselines, and targets for five measures (PM 4.6, PM 4.12, PM 4.13, PM 4.15, PM 4.16) while other respondents proposed different or additional metrics for tracking performance for three measures (PM 4.6, PM 4.14, PM 4.15). Some suggested adding interim steps for performance measures with long-term goals for three measures (PM 4.6, PM 4.13, PM 4.16) and recommended an adaptive management approach if a performance measure target is not met for two measures (PM 4.6, PM 4.13).

For all of the proposed PMs, staff has provided more scientific justification and clarification to support the metrics, baselines, and targets. Staff has changed some metrics and added sub-metrics to acknowledge commenter suggestions. As noted above, all proposed PMs were revised to identify five-year adaptive management procedures (outlined in Appendix E), and most proposed PMs were revised to include an 'Interim Performance Assessment'.<sup>2</sup>

## **B. Independent Scientific Peer Review and Delta ISB Reviewer Comments**

This section describes staff's responses to comments received from independent scientific peer reviewers on the November 2019 preliminary public review draft of five PM datasheets<sup>3</sup> and from the Delta ISB on the complete November 2019 preliminary public review draft<sup>4</sup> in terms of changes proposed in the May 2020 draft.

### **Comments on the Narrative, Core Strategies, and Policies**

Although Delta ISB review focused primarily on PMs, some members also provided comments focused on the Chapter 4 narrative.

#### Best Available Science and Adaptive Management

A Delta ISB member requested acknowledgement that the processes that drive the need for restoration are accelerating, and that future rates of these shifting processes are uncertain. In addition, a member suggested highlighting current research to address knowledge gaps. The proposed amendment is focused on scientifically supported interventions that will make the ecosystem more resilient to future change. Staff has added content to the revised narrative to better characterize how scientific research can continue to support and inform these interventions. Specifically, staff revised the narrative, supporting Core Strategy 5, to explain the importance of baseline data and experiments for adaptive management.

#### Indigenous Communities

Delta ISB members suggested a broader recognition of the indigenous land management practices used to maintain the Delta landscape. Staff has revised the narrative to elaborate on indigenous communities' land management practices and tribal settlements within the context of Delta historical ecology.

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<sup>2</sup>PM 4.12 Subsidence Reversal for Tidal Reconnection has an earlier target date (2030) than the other PMs, and therefore did not require an interim target.

<sup>3</sup> Copies of the peer reviews and additional information related to the independent scientific review panel is available on the Council website at: <http://www.deltacouncil.ca.gov/delta-plan/independent-scientific-peer-review-delta-plan-ecosystem-amendment>.

<sup>4</sup> An overview of the Delta ISB's comments on the November 2019 preliminary public review draft was transmitted in a memorandum to Council staff dated February 4, 2020, available at: <http://www.deltacouncil.ca.gov/pdf/isb/products/2020-02-04-isb-eco-amendment-review.pdf>.

### Flooded Islands

One Delta ISB member suggested including a policy that would address the outcome of subsided island levee failures and flooding. This comment is outside of the scope of the proposed amendment.

### **Comments on Performance Measures**

Both Delta ISB members and independent peer reviewers provided feedback on a range of items related to PMs. Some respondents expressed concern that many of the goals/targets established for the PMs may be unrealistic or overly ambitious, but also recognize that some of this stems from the statutory requirements of the Delta Reform Act. Achieving some goals and targets may be constrained by conditions outside of the scope of the Delta Plan (e.g., nonnative species introductions may occur from projects and activities that are not covered actions). Reviewers suggested including short- and long-term goals for proposed PMs, as well as placing greater emphasis on success trajectories rather than absolute targets. More generally, reviewers requested stronger justification for or revisions to proposed metrics, baselines, and targets. Reviewers requested that numerical metrics account for statistical precision and/or uncertainty to allow for the assessment of proposed PMs relative to targets.

Staff has developed and included interim goals for the proposed PMs in the datasheets and in Appendix E, to measure ongoing progress while also addressing potentially ambitious targets. All proposed PMs will be tracked and reassessed every five years in order to inform the Council's adaptive management and decision-making processes, as documented in revisions to Appendix E. Statistical precision and uncertainty will be accounted for during the tracking of the proposed PMs.

One Delta ISB reviewer suggested that proposed PMs incorporate qualitative and interpretive components as part of a more general performance assessment (rather than focusing solely on quantitative indicators). No revisions were made in response to this comment because, by definition, output and outcome performance measures must have measurable, quantitative metrics.

### Performance Measure 4.6 (Doubling Goal for Central Valley Chinook Salmon Natural Production)

Independent scientific peer reviewers expressed concern about the ability to achieve the proposed salmon doubling goal without significant habitat and/or harvest changes. One reviewer suggested that the simplistic nature of this PM may not provide the level of specificity necessary to effectively inform adaptive management efforts. Independent scientific peer reviewers expressed concerns that hatchery fish likely represent a large fraction of the natural production estimates (during the baseline and subsequent

periods) and recommended including an additional target that would use a more recent baseline period with more accurate natural production estimates.<sup>5</sup>

- In order to track populations in a more biologically relevant manner, staff has revised this PM to assess Central Valley Chinook salmon separately by runs (fall, late-fall, winter, and spring) in selected major tributaries.
- As many reviewers questioned the achievability of the PM target to double salmon natural production, staff has revised the measure to include two interim sub-metrics to track progress toward the doubling target. The first interim sub-metric evaluates annual positive increases in salmon natural production, where production represents the total number of adult salmon that spawn in rivers, return to hatcheries, or are harvested. The second interim sub-metric evaluates annual positive increases in salmon natural production using the CDFW Constant Fractional Marking program dataset to better address the concern of hatchery-origin fish overestimates in the doubling goal target.

#### Performance Measure 4.12 (Subsidence Reversal for Tidal Reconnection)

Independent scientific peer reviewers suggested including additional sediment and tectonic analyses and data sources. Scientific peer reviewers also requested additional discussion of vegetation management, its effects on subsidence reversal, and accretion monitoring. Scientific peer reviewers requested additional clarification regarding the target timeline (i.e., start and end dates). One independent scientific peer reviewer suggested that the target be more explicitly linked to other performance measures (i.e., PM 4.15, PM 4.16).

- Staff has added a summary of knowledge uncertainties, assumptions made regarding uncertainties, and details on the adaptive management process to this PM's data sheet. Staff has also revised the PM data sheet to provide additional details on the rationale underlying selected metrics, baselines, and targets. Staff has conducted further analysis on sediment deposition in tidally connected wetlands as a form of subsidence reversal. The description of subsidence reversal activities in the PM data sheet now includes examples such as tidal marsh restoration, rice cultivation, and wetland accretion. Staff has clarified target start- and end-dates and bolstered scientific justification for the selected timeline. The PM data sheet is also now more clearly linked to other PMs.

#### Performance Measure 4.13 (Barriers to Migratory Fish Passage)

Independent scientific peer reviewers requested a more inclusive list of barriers present in the watershed as well as the process used to select priority barriers for removal. Scientific peer reviewers requested further justification of the 50 percent target for rim

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<sup>5</sup> Natural production means fish produced to adulthood without direct human intervention in the spawning, rearing, or migration processes.

dams and unscreened diversions. In addition, some reviewers suggested that dams downstream and habitat upstream of rim dams should be included as a PM target.

- Staff has added additional barriers to the priority barrier list and provided more in-depth information regarding the selection of and target goals for barriers, large rim dams, and unscreened diversions. Staff has changed the PM target of 50 percent for rim dams and unscreened diversions to 100 percent for all barriers, rim dams, and unscreened diversions. Staff has also clarified terminology and the purpose of the PM by replacing the term ‘resolve’ with ‘remediate’. The data sheet now describes use of feasibility reports to address the difficulty of remediating barriers and dams. Staff has made changes to the PM data sheet to emphasize that additional surveys are needed to prioritize remediation of unscreened diversions in the Delta. In addition, staff also made changes to the PM data sheet stressing that additional monitoring is needed to evaluate the effects of barriers, dams, and unscreened diversions on native fish populations and their habitats. Additional citations were also added to address remediation of dams in order to restore upstream salmonid habitat.

#### Performance Measure 4.15 (Seasonal Inundation)

Independent scientific peer reviewers suggested increasing the target acreage for seasonal inundation in this PM and focusing on a range of values—where the ranges reflect the uncertainty in the relationship between acreage and improved functionality. One independent scientific peer reviewer expressed concern that the proposed metrics do not robustly cover the areas of likely land-water connectivity. Accordingly, independent scientific peer reviewers suggested alternative methods (to document finer scale changes in inundation depth and extent over shorter time scales) and tools to estimate and monitor metrics.

- The proposed target acreages for connectivity and inundation in this PM were determined using the 2017 CVFPP Conservation Strategy. Staff has modified the PM to include intermediate milestone acreage goals to track progress towards the targets. Staff has also added further details and additional references to the PM data sheet to describe the fundamental role of land-water connectivity in restoring ecosystem function and providing habitat to species such as anadromous fish. Staff also revised the PM data sheet to describe and evaluate alternative methods and data sources.

#### Performance Measure 4.16 (Acres of Natural Communities Restored)

Since tidal marsh restoration typically occurs over decadal timescales, independent scientific peer reviewers suggested that restoration efforts focus on progress, milestones, and intermediate targets. One scientific peer reviewer requested further clarification on the proposed grasslands target acreage. Another suggested using a new dataset (i.e., Delta Aquatic Resources Inventory) to determine the distribution and abundance of habitat types. Yet another suggested using the Wetlands Regional

Monitoring Program to help consolidate the Bay and Delta as a single science enterprise.

- While the proposed PM target acreages were determined using existing conservation and recovery plans, staff has added intermediate milestone acreage goals to this PM to track progress toward the targets. Staff has changed the grasslands target to 'no net loss' instead of '0' to clarify that grasslands should be restored in the exterior Delta where it offers more ecosystem function than where it currently exists in the interior Delta. Staff has added the Wetland Regional Monitoring Program to the data sheet as a method to analyze restoration effectiveness.