

## Delta Plan Performance Measures Amendment: Staff Recommendation

### Delta Plan Chapter 3: A More Reliable Water Supply for California

#### Strategies supporting this chapter:

1. Increase water conservation and expand local and regional supplies
2. Improve groundwater management
3. Improve conveyance and expand storage
4. Improve water management information

- **Administrative** performance measures describe decisions made by policy makers and managers to finalize plans or approve resources (funds, personnel, projects) for implementation of a program or group of related programs.
- **Output** (also known as “driver”) performance measures evaluate the factors that may be influencing outcomes and include on-the-ground implementation of management actions, such as acres of habitat restored or acre-feet of water released, as well as natural phenomena outside of management control (such as a flood, earthquake, or ocean conditions).
- **Outcome** performance measures evaluate responses to management actions or natural outputs.

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3.1	1	WR R1	<del>Outcome</del> <del>Output</del>	Progress toward meeting California’s conservation goal of achieving a 10% reduction in statewide urban per capita water usage by 2015 and a 20% reduction by 2020.	<p>Demonstrate California’s urban water suppliers’ progress toward meeting California’s SB X7-7 conservation goal of achieving a 10% reduction in statewide urban per capita water usage by 2015 and a 20% reduction by 2020.</p> <p><b>Metrics:</b></p> <ul style="list-style-type: none"> <li>• Gallons per capita per day of urban water use.</li> <li>• Percentage change in urban per capita water use from SB X7-7 baseline years.</li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li>• <del>Set for each hydrologic region by the Department of Water Resources then by each individual urban supplier in their 2010 Urban Water Management Plans using a 10-15 year base period. 196 gallons per capita per day (population-weighted average of baselines established in 2010 Urban Water Management Plans).</del></li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• <del>Set for each hydrologic region by the Department of Water Resources then by each urban supplier in their 2010 Urban Water Management Plans using one of four methodologies.</del></li> <li>• <u>10% reduction by 2015 (176 gallons per capita per day).</u></li> <li>• <u>20% reduction by 2020 (156 gallons per capita per day).</u></li> </ul>
3.2	1	WR R6	<del>Outcome</del> <del>Output</del>	Progress toward achieving California’s goal for the increased use of storm water runoff of at least 500,000 AF/year by 2020 and by at least 1 MAF/year by 2030.	<p>Demonstrate California’s progress toward achieving the State Water Resource’s Control Board’s Recycled Water Policy goal for the increased use of storm water runoff (e.g. capture and reuse, recharge, redirection to constructed wetlands or landscaping) of at least 500,000 <del>AF</del><u>acre-feet</u> /year by 2020 and by at least 1 <del>MAF</del><u>million acre-feet</u> /year by 2030.</p> <p><b>Metric:</b></p> <ul style="list-style-type: none"> <li>• Acre-feet per year of storm water use (e.g., capture and reuse, recharge, redirection to constructed wetlands or landscaping).</li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li>• Volume of storm water use reported in 2015 Urban Water Management Plans and Prop 1 Storm Water Resource Plans may be the first widespread reporting of storm water use that could serve as a baseline.</li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• Increased use of storm water runoff of at least 500,000 <del>AF</del><u>acre-feet</u>/year by 2020 and by at least 1 <del>MAF</del><u>million acre-feet</u>/year by 2030.</li> </ul>
3.3	1	WR P1	Outcome	Progress toward increasing local and regional water supplies,	<b>REMOVED</b>

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				measured by the amount of additional supplies made available (reported in 5-year increments from 2000).	<p><u>Notes:</u></p> <p>The amount of water imported from the Delta and the amount of water available from local and regional supplies are both aspects of reducing reliance on the Delta and have been combined into one measure (see <del>3-28</del> <u>Performance Measure 3.4</u>).</p>
3.4	1	WR R1 WR R4 <u>WR P1</u>	<del>Output</del> <u>Outcome</u>	Water suppliers that receive water from the Delta watershed have documented the expected outcome for a measureable reduction in reliance on the Delta and improvement in regional self-reliance.	<p><del>Demonstrate that water suppliers that receive water from the Delta watershed have reduced reliance on the Delta and improved regional self-reliance. Demonstrate a measureable reduction in reliance on the Delta at the regional level based on individual water supplier reports.</del></p> <p><b>Metrics:</b></p> <ul style="list-style-type: none"> <li><del>10-year moving average</del> <u>Volume and percent of total water used (percent of total water portfolio) originating in the Delta watershed.</u></li> <li><del>10-year moving average volume and percent of Acre-foot per year of water total water</del> <u>use met from local and regional sources. For the purposes of reporting progress in reducing reliance on the Delta and improving regional self-reliance, water conservation and efficiency measures are considered new sources of water supply.</u></li> <li><del>Acre-foot per year of pP</del> <u>rojected volume and percent of total use of met by</u> local and regional sources of supply.</li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li><del>10-year Average</del> <u>average volume and percent of total water use met by water originating in the Delta watershed, imports</u> by hydrologic region, as of Delta Plan adoption (May 2013).</li> <li><del>10-year average</del> <u>volume and percent of total water use met by</u> local and regional supplies, by hydrologic region, as of Delta Plan adoption (May 2013).</li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li>Decreasing trend in volume of water <del>imported used</del> from the Delta <u>watershed</u> or percent of total water use met by <u>water from the Delta imports watershed</u>.</li> <li><del>Increase</del> <u>Increasing trend</u> in <u>volume or percent of total water use met by</u> local and regional supplies.</li> </ul>
3.5	1	WR R6	Output	Progress made in achieving existing water conservation and water supply performance goals, and setting expanded future goals for local, regional, and statewide water conservation, water use efficiency, and water supply development.	<p><b>REMOVED</b></p> <p><u>Notes:</u></p> <p>Progress made in achieving existing <u>conservation</u> goals will be covered in <u>Performance Measure 3.1</u>. <u>Progress made in achieving existing water supply goals will be covered in Performance Measures 3.2 and 3.4, other performance measures including 3.25, 3.26, and 3.27.</u> Setting expanded future goals is covered by an administrative performance measure.</p>
3.6	1	WR R1	Output	N/A: new measure	<p>Demonstrate an increase in efficiency in agricultural water use.</p> <p><b>Metrics:</b></p> <ul style="list-style-type: none"> <li><del>Total water use fraction.</del></li> <li>Water management fraction <u>(ratio of the amount of water needed to be applied for optimal crop growth and the amount of water in recoverable return flow per the total amount of water applied. As efficiency increases, this ratio approaches one.)</u>.</li> </ul> <p><del>These</del> <u>these</u> metrics <del>were</del> <u>was</u> defined by Department of Water Resources in Methodology for Quantifying the Efficiency of Agricultural Water Use, 2012.</p> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li>2012 Agricultural Water Management Plans or earliest available data as they are reported by water suppliers.</li> </ul> <p><b>Target:</b></p>

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					<ul style="list-style-type: none"> <li>Increase in efficiency.</li> </ul>
3.7	2	WR R9	Output	Information in updated Bulletin 118 is included in the next (2013) California Water Plan Update and in the 2015 UWMPs and AWMPs.	<b>Reclassify to administrative performance measure:</b> Information in updated Bulletin 118 is included in the next (2018) California Water Plan Update and in the 2020 UWMPs and AWMPs.
3.8	2	WR R11	Outcome	N/A: new measure	<p>Demonstrate progress towards decreasing the overall rate of groundwater depletion in critically overdrafted basins.</p> <p><b>Metrics:</b></p> <ul style="list-style-type: none"> <li>Change in groundwater in storage.</li> <li>Groundwater elevations.</li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li>Regional groundwater estimates for California's Central Valley using satellite-based gravimetric sensors are available back to October of 2003. The California Department of Water Resources has a network of long-term <u>monitoring</u> wells in the San Joaquin Valley (3,124 wells) and Sacramento Valley (599 wells) that will be used to assess sub-basin groundwater trends.</li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li>Decreasing rate of groundwater depletion in critically overdrafted basins.</li> </ul>
3.9	3	WR R12 ER P1 RR P1	Outcome	Progress toward improved reliability of Delta water exports and reductions in the vulnerability of Delta exports to disruption.	<p>Demonstrate that water available to be exported through the Delta is not disrupted.</p> <p><b>Metric:</b></p> <ul style="list-style-type: none"> <li>Percent of Central Valley Project/State Water Project <u>final</u> allocations delivered each year.</li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li><del>N/A because this measure has a prescribed target and is not showing a change from a baseline. Long-term historical average deviation of total deliveries from final allocations.</del></li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li><del>Actual deliveries are within 10% of allocations. Declining trend in the deviation of total deliveries from final allocations.</del></li> </ul>
3.10	3	WR R12 WR R14	Outcome	Progress toward increasing the predictability of water deliveries from the Delta in a variety of water year types.	<p><b>REMOVED</b></p> <p><u>Notes:</u></p> <p>This measure is duplicative and addressed by <del>3.29</del> <u>Performance Measure 3.9</u>.</p>

## Delta Plan Performance Measures Amendment: Staff Recommendation

### Delta Plan Chapter 4: Protect, Restore, and Enhance the Delta Ecosystem

#### Strategies supporting this chapter:

1. Create More Natural Functional Flows
2. Restore Habitat
3. Improve Water Quality to Protect the Ecosystem  
\*Addressed in Chapter 6, Water Quality
4. Prevent Introduction of and Manage Nonnative Species Impacts
5. Improve Hatcheries and Harvest Management

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4.1	1	ER R1	Output	The SWRCB adopts Delta flow objectives by June 2, 2014.	<b>REMOVED</b> <u>Notes:</u> <u>This output performance measure was originally reclassified to an administrative measure, but duplicative language already exists as an administrative measure in Appendix E; therefore, it is being removed.</u> <b>Reclassify to administrative performance measure:</b> <del>The SWRCB adopts Delta flow objectives by June 2, 2014.</del>
4.2	1	ER R1	Outcome	Progress toward restoring in-Delta flows to more natural functional flow patterns to support a healthy estuary.  Metrics: results from hydrological monitoring and hydrodynamic modeling.	Progress toward restoring <u>a healthy estuary, including flow patterns to support ecological floodplain processes in the Yolo Bypass, spring pulse flows along the Sacramento River, and more gradual recession flows at the end of the wet season.</u>  <b>Metric:</b> <ul style="list-style-type: none"> <li>• Frequency of achieving &gt;17,000 acres of inundation for 14 or more consecutive days in the Yolo Bypass.</li> <li>• <u>Flows exceeding base flows. A flow, 5 to 10 times greater than the base flow, during the period of spring flows.</u></li> <li>• <u>Rate of change in the hydrograph on the receding limb as measured from spring high flows to summer low flows.</u></li> </ul> <b>Baseline:</b> <ul style="list-style-type: none"> <li>• <u>Between 1984 and 2007 the Yolo Bypass experienced inundation events of at least 14 consecutive days between December and April, 10 out of 24 years. 1984 and 2007 the Bypass flooded intermittently, only meeting 2009 National Marine Fisheries Service (NMFS) Biological Opinion requirements for 14 consecutive days of floodplain inundation between December and April once every 10 years.</u></li> <li>• <u>Long-term historical hydrograph data retrieved from U.S. Geological Survey stations from below Shasta Dam.</u></li> </ul> <b>Target:</b> <ul style="list-style-type: none"> <li>• Allow for &gt;17,000 acres of Yolo Bypass inundation for 14 or more consecutive days between December and March in at least two out of three years.</li> <li>• <u>At least one spring flow event 5 to 10 times winter base flow each year.</u></li> <li>• <u>Not to exceed daily drops in flow &gt;10%.</u></li> </ul>

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4.3	1	ER R1	Output	The SWRCB adopts flow objectives for the major tributaries by 2018 (or as soon as reasonably possible).	<b>REMOVED</b> <u>Notes:</u> <u>This output performance measure was originally reclassified to an administrative measure, but duplicative language already exists as an administrative measure in Appendix E; therefore, it is being removed.</u> <b>Reclassify to administrative performance measure:</b> <u>The SWRCB adopts flow objectives for the major tributaries by 2018 (or as soon as reasonably possible).</u>
4.4	<del>4</del>	<del>ER R1</del>	<del>Outcome</del>	<del>N/A: New measure</del>	<del>Progress toward restoring more natural functional flow patterns along the Sacramento River using pulse flows during the Spring.</del> <b>Metric:</b> <del>• Flows exceeding base flows. A flow, e.g. 5 to 10 times greater than the base flow, during the period of spring flows.</del> <b>Baseline:</b> <del>• Long-term historical hydrograph data retrieved from USGS stations from below Shasta.</del> <b>Target:</b> <del>• At least one spring flow event 5 to 10 times winter base flow each year.</del> <b>Data Source:</b> <del>Long-term USGS gauge records along the Sacramento mainstem and Shasta Rivers.</del>
4.5	<del>4</del>	<del>ER R1</del>	<del>Outcome</del>	<del>N/A: New measure</del>	<del>Progress toward restoring more natural functional flow patterns with gradual recession flows.</del> <b>Metric:</b> <del>• Rate of change in the hydrograph on the receding limb as measured from spring high flows to summer low flows.</del> <b>Baseline:</b> <del>• Long-term historical hydrograph data retrieved from USGS stations from below Shasta.</del> <b>Target:</b> <del>• Not to exceed daily drops in flow &gt;10%.</del> <b>Data Source:</b> <del>Long-term USGS gauge records along the Sacramento mainstem and Shasta Rivers.</del>
4.6	2	ER R2	Output	Pilot scale Delta habitat restoration projects are developed and initiated in the priority areas described in ER R2 by 2015. These projects include tidal brackish and freshwater marsh as well as floodplain restoration, and have clear adaptive management plans aimed at improving outcomes and providing lessons for the development of large-scale restoration projects.  Metrics: acres restored by habitat type, and lessons learned.	<del>Delta habitat projects are constructed including the Progress toward higher acreage of the</del> following types: floodplain, tidal and subtidal, emergent wetland, shaded riverine aquatic and upland and riparian forest habitats. Tidal wetland and floodplain restoration projects should occur in the priority habitat restoration areas described in ER R2. <b>Metric:</b> • Number of acres of restoration projects constructed by habitat type, including progress toward the biological opinions' targets of restoring 8,000 acres of tidal wetlands and 17,000-20,000 acres of floodplain habitat in the Priority Restoration Habitat Areas. <b>Baseline:</b>

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					<ul style="list-style-type: none"> <li>Set at zero, the number of acres restored as of the Delta Plan’s adoption date (May 2013) to capture all the restoration actions that have been implemented after the plan was completed.</li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li>8,000 acres of tidal wetlands and 17,000-20,000 acres of floodplain habitat <del>projects constructed, restored</del> in the Priority Restoration Habitat Areas <u>as described in the 2008 and 2009 Biological Opinions for the state and federal water projects.</u></li> </ul>
4.7	2	ER R2	Output	Progress, measured in acres of restored or enhanced habitat, is being made toward the biological opinions’ targets or restoring 8,000 acres of tidal marsh and 17,000 to 20,000 acres of floodplain rearing habitat.	<p><b>REMOVED</b></p> <p><u>Notes:</u></p> <p><u>Because performance measures 4.6 and 4.7 both focus on habitat restoration acreage, they were merged. Staff determined that “lessons learned” was not an appropriate metric.</u></p>
4.8	2	ER R2	Outcome	Progress toward achieving the State and federal “doubling goal” for wild Central Valley salmonids relative to 1995 levels. Trends will be derived from long-term salmonids monitoring surveys conducted by the National Marine Fisheries Service, U.S. Fish and Wildlife Service, and others.	<p>Progress toward achieving the State and federal “doubling goal” for wild Central Valley salmon relative to the period of 1967-1991 levels. Trends will be derived from long-term salmon monitoring surveys conducted by the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and others.</p> <p><b>Metric:</b></p> <p>Number of naturally spawned wild adult salmon by run type, annually censused for the general population in the Central Valley and selected rivers:</p> <ul style="list-style-type: none"> <li>Sacramento River: <ul style="list-style-type: none"> <li>American River</li> <li>Feather River</li> <li>Sacramento River mainstem</li> </ul> </li> <li>San Joaquin River: <ul style="list-style-type: none"> <li>Tuolumne River</li> <li>Merced River</li> <li>Stanislaus River</li> <li>Mokelumne River</li> </ul> </li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li>Salmon population numbers relative to <u>average levels during</u> the period of 1967-1991.</li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li>As defined by the Central Valley Project Improvement Act “doubling goal” that “...natural production of anadromous fish in Central Valley Rivers and streams will be sustainable, on a long term basis, at levels not less than twice the average levels attained during the period of 1967-1991.”</li> </ul>
4.9	2	ER R2	Outcome	Progress toward the documented occurrence and use of protected and restored habitats and migratory corridors by native resident and migratory Delta species. Trends in occurrence, use, and performance of native species in protected and restored habitats and corridors will be upward over the next decade. These trends will be derived from animal and plant monitoring surveys that are conducted as part of	<p>Progress toward the documented occurrence in and use of protected and restored habitats and migratory corridors by native resident and migratory Delta fish and bird species. Trends in the number of native species in protected and restored habitats and corridors will be derived from monitoring surveys that are conducted as part of adaptive management strategies for the protection and restoration of these areas.</p> <p><b>Metrics:</b></p> <ul style="list-style-type: none"> <li>Assess native fish:</li> </ul>

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				adaptive management strategies for the protection and restoration of these areas.	<ul style="list-style-type: none"> <li>o Relative abundance of native fish in and near restoration project sites.</li> <li>• Assess native birds:               <ul style="list-style-type: none"> <li>o Counts of <u>native birds, including</u> waterfowl in the Delta.</li> </ul> </li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li>• <del>Baselines are set from monitoring prior to restoration at each site.</del></li> <li>• <u>Fish relative abundance as of Delta Plan adoption, May 2013.</u></li> <li>• <u>Breeding waterfowl for 2010-2014:</u> <ul style="list-style-type: none"> <li>o <u>Delta counts (5-year average): 7,414</u></li> <li>o <u>Suisun Marsh counts (5-year average): 23,122</u></li> </ul> </li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• <del>As ongoing restoration projects are approved, targets need to be determined as part of the restoration goals and monitoring plan for each of the restoration projects. Upward trend as measured by the metrics above.</del></li> </ul>
4.10	2	ER R2	Outcome	N/A: New measure	<p><del>Assess the extent and distribution of specific ecological functions, use metrics for specific species or guilds of wildlife and define how the functions quantify. Progress toward: 1) increased habitat, connectivity, and functionality; and 2) more favorable spatial distribution of habitat types.</del></p> <p><b>Metrics:</b></p> <ul style="list-style-type: none"> <li>• Assess the function 'Provides habitat and connectivity for fish'.               <ul style="list-style-type: none"> <li>o <u>Spatial-temporal variability of seasonal short-term and long-term flooding and tidal inundation. Inundation extent, duration, timing, and frequency.</u></li> <li>o Marsh to open water ratio.</li> <li>o Adjacency of marsh to open water by length and marsh patch size.</li> <li>o Ratio of looped to dendritic channels (by length and adjacent habitat type).</li> </ul> </li> <li>• Assess the function 'Provides habitat and connectivity for marsh wildlife'.               <ul style="list-style-type: none"> <li>o Marsh area by patch size (patch size distribution).</li> <li>o Marsh area by nearest <u>large (&gt;100 ha)</u> neighbor distance.</li> <li>o Marsh core area ratio.</li> <li>o Marsh fragmentation index.</li> </ul> </li> <li>• Assess the function 'Provides habitat and connectivity for waterbirds'.               <ul style="list-style-type: none"> <li>o Wetted area by type in winter.</li> </ul> </li> <li>• Assess the function 'Provides habitat and connectivity for riparian wildlife'.               <ul style="list-style-type: none"> <li>o Riparian habitat area by patch size.</li> <li>o Riparian habitat length by width class.</li> </ul> </li> <li>• Assess the function 'Provides habitat and connectivity for marsh- terrestrial transition zone wildlife'.               <ul style="list-style-type: none"> <li>o Length of marsh-terrestrial transition zone by terrestrial habitat type.</li> </ul> </li> </ul> <p><b>Baseline:</b></p> <p><del>Habitat acreage as published in historical habitat type maps using data from the early 1800s. The historical habitat type map was taken from the Sacramento-San Joaquin Delta Historical Ecology Investigation. Baseline habitat types by hectares (ha) as seen:</del></p> <ul style="list-style-type: none"> <li>• <del>Managed wetlands: 0</del></li> </ul>

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					<ul style="list-style-type: none"> <li>• <del>Urban/Barren: 0</del></li> <li>• <del>Agriculture/Non-native: 0</del></li> <li>• <del>Stabilized interior dune vegetation: 1,032</del></li> <li>• <del>Willow riparian scrub/shrub: 1,637</del></li> <li>• <del>Willow thicket: 3,567</del></li> <li>• <del>Grassland: 9,108</del></li> <li>• <del>Alkali seasonal wetland complex: 9,193</del></li> <li>• <del>Vernal pool complex: 11,262</del></li> <li>• <del>Water: 13,772</del></li> <li>• <del>Valley foothill riparian: 15,608</del></li> <li>• <del>Oak woodland/savanna: 20,460</del></li> <li>• <del>Wet meadow/Seasonal wetland: 37,564</del></li> <li>• <del>Freshwater emergent wetland: 193,224</del></li> </ul> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Metric</th> <th style="width: 25%;">Baseline ("Modern" Delta)</th> <th style="width: 25%;">Metric</th> <th style="width: 25%;">Baseline ("Modern" Delta)</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Spatial-temporal variability of seasonal short-term and long-term flooding and tidal inundation</td> <td> <u>Tidal Inundation</u> <ul style="list-style-type: none"> <li>• Dec – Feb: 3,303 ha</li> <li>• Mar – May: 3,303 ha</li> <li>• Jun – Aug: 3,303 ha</li> <li>• Sep – Nov: 3,303 ha</li> </ul> </td> <td rowspan="3">Marsh area by nearest neighbor distance</td> <td> <u>&lt;=10 m: 1,161 ha</u>  <u>10 – 100 m: 143 ha</u>  <u>100 – 1,000 m: 87 ha</u>  <u>1,000 – 10,000 m: 630 ha</u>  <u>&gt;10,000 m: 2,317 ha</u> </td> </tr> <tr> <td> <u>Seasonal long-duration flooding</u> <ul style="list-style-type: none"> <li>• Dec – Feb: 0 ha</li> <li>• Mar – May: 0 ha</li> <li>• Jun – Aug: 0 ha</li> <li>• Sep – Nov: 0 ha</li> </ul> </td> </tr> <tr> <td> <u>Seasonal short-term flooding</u> <ul style="list-style-type: none"> <li>• Dec – Feb: 18,128 ha</li> <li>• Mar – May: 18,128 ha</li> <li>• Jun – Aug: 0 ha</li> <li>• Sep – Nov: 0 ha</li> </ul> </td> </tr> </tbody> </table>	Metric	Baseline ("Modern" Delta)	Metric	Baseline ("Modern" Delta)	Spatial-temporal variability of seasonal short-term and long-term flooding and tidal inundation	<u>Tidal Inundation</u> <ul style="list-style-type: none"> <li>• Dec – Feb: 3,303 ha</li> <li>• Mar – May: 3,303 ha</li> <li>• Jun – Aug: 3,303 ha</li> <li>• Sep – Nov: 3,303 ha</li> </ul>	Marsh area by nearest neighbor distance	<u>&lt;=10 m: 1,161 ha</u> <u>10 – 100 m: 143 ha</u> <u>100 – 1,000 m: 87 ha</u> <u>1,000 – 10,000 m: 630 ha</u> <u>&gt;10,000 m: 2,317 ha</u>	<u>Seasonal long-duration flooding</u> <ul style="list-style-type: none"> <li>• Dec – Feb: 0 ha</li> <li>• Mar – May: 0 ha</li> <li>• Jun – Aug: 0 ha</li> <li>• Sep – Nov: 0 ha</li> </ul>	<u>Seasonal short-term flooding</u> <ul style="list-style-type: none"> <li>• Dec – Feb: 18,128 ha</li> <li>• Mar – May: 18,128 ha</li> <li>• Jun – Aug: 0 ha</li> <li>• Sep – Nov: 0 ha</li> </ul>
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					Marsh to Open Water Ratio	<u>Marsh: 4,296 ha</u> <u>Open water: 26,554 ha</u> <u>Marsh to Open Water Ratio: 0.16</u>	Marsh core area ratio	<u>Core Habitat: 815 ha</u> <u>Edge Habitat: 3,522 ha</u> <u>Core to Edge Ratio: 0.23</u>
					Adjacency of marsh to open water by length and marsh patch size	<u>Marsh Patch &gt;100 ha: 31 km</u> <u>Marsh Patch 10 – 100 ha: 236 km</u>	Marsh fragmentation index	<u>Areas of marsh core habitat within large marsh patch (&gt;100 ha) or within small patches &lt; 1km from large patch: 491 ha</u>
					Ratio of looped to dendritic channels	<u>Dendritic channels adjacent to marsh: 84 km</u> <u>Dendritic channels not adjacent to marsh: 255 km</u> <u>Looped Channels: 768 km</u> <u>Fluvial or Detached: 298 km</u>	Wetted area by type in winter	<u>Ponds, Lakes, Channels and Flooded Islands: 26,530 ha</u> <u>Tidal Inundation: 3,303 ha</u> <u>Seasonal long-duration flooding: 0 ha</u> <u>Seasonal short-term flooding: 18,128 ha</u>
					Marsh area by patch size	<u>&lt;=10 ha: 1,427 ha</u> <u>10 – 100 ha: 1,757 ha</u> <u>100 – 1,000 ha: 1,154 ha</u> <u>1,000 – 10,000 ha: 0 ha</u> <u>&gt;10,000 ha: 0 ha</u>		
					Riparian habitat area by patch size	<u>&lt;=20 ha: 1,991 ha</u> <u>20 – 80 ha: 1,364 ha</u> <u>80 – 320 ha: 1,470 ha</u> <u>320 – 1,280 ha: 2,066 ha</u> <u>&gt;1,280 ha: 0 ha</u>	Riparian habitat length by width class	<u>0 – 100 m: 626 km</u> <u>100 – 500 m: 87 km</u> <u>&gt;500 m: 11 km</u>
					Length of marsh-terrestrial transition zone by terrestrial habitat type	<u>Willow Riparian Scrub or Shrub: 370 km</u> <u>Valley Foothill Riparian: 116 km</u> <u>Oak Woodland and Oak Savannah: 0 km</u> <u>Alkali Seasonal Wetland Complex: 19 km</u> <u>Wet Meadow and Seasonal Wetland: 30 km</u>	<u>Stabilized Interior Dune Vegetation: 0 km</u> <u>Grassland: 103 km</u> <u>Willow Thicket: 59 km</u> <u>Vernal Pool Complex: 4 km</u>	

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					<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• <u>Increasing extent of flooding by different inundation types throughout the year, including seasonal shallow short-term flooding, seasonal deeper long-duration flooding, and tidal inundation.</u></li> <li>• <u>Increasing proportion of marsh to open water habitat.</u></li> <li>• <u>Increasing proportion and extent of marsh-open water edge that occurs along large marsh patches (&gt;100 ha). Decreasing proportion of marsh-open water edge that occurs along small marsh patches.</u></li> <li>• <u>Decreasing proportion of looped to dendritic channels.</u></li> <li>• <u>Increasing extent and proportion of marsh habitat that are in large size classes (&gt;100 ha).</u></li> <li>• <u>Decreasing proportion of marsh that occurs in small size classes.</u></li> <li>• <u>Increasing proportion of marsh habitat that occurs in close proximity to a large marsh patch (&gt;100 ha).</u></li> <li>• <u>Increasing proportion and extent of marsh habitat that occurs in “core” habitat (at least 50 m from outside edge of marsh).</u></li> <li>• <u>Increasing proportion and extent of marsh habitat that occurs either in core habitat of large marsh patches or in smaller patches less than 1 km from nearest large patch.</u></li> <li>• <u>Increasing extent of different types of inundation types for wintering waterfowl.</u></li> <li>• <u>Increasing proportion and extent of riparian habitat that occur in larger patches. Decreasing proportion of riparian habitat that occurs in smaller patches.</u></li> <li>• <u>Increasing proportion and extent of riparian habitat length that occurs in wider width size classes. Decreasing proportion of riparian habitat length that occurs in narrow width size classes.</u></li> <li>• <u>Increasing length of marsh-terrestrial transition zone.</u></li> </ul> <p><del>To be determined through the development of landscape restoration frameworks, initially focusing on pilot efforts in Cache Slough and the Northeast Delta led by the Delta Conservancy, Delta Science Program, SFEI and others.</del></p>
4.11	4	ER R7	Output	The DFW and other appropriate agencies fully implement the list of “Stage 2 Actions for Nonnative Invasive Species.”	<p><b>Reclassify to administrative performance measure:</b></p> <p>The Department of Fish and Wildlife and other appropriate agencies fully implement the 2014 Ecosystem Restoration Program “Conservation Strategy” list for Strategic Goal 5.</p>
4.12	4	ER P5	Outcome	Progress toward decreasing annual trends in both the number of new and existing aquatic and terrestrial nonnative species, and the abundance and distribution of existing aquatic and terrestrial nonnative species in the Delta over the next decade. These trends will be derived from long-term animal and plant monitoring surveys conducted by the Interagency Ecological Program agencies, the California Department of Boating and Waterways, the U.S. Department of Agriculture, the San Francisco Estuary Institute, and others.	<p>Progress toward managing aquatic and terrestrial invasive nonnative species in the Delta over the next decade. Long-term animal and plant monitoring surveys will be conducted by the Interagency Ecological Program agencies, the California Department of Boating and Waterways, the U.S. Department of Agriculture, the San Francisco Estuary Institute, and others.</p> <p><b>Metrics:</b></p> <ul style="list-style-type: none"> <li>• Assess progress <u>toward</u> managing nonnative fish: <ul style="list-style-type: none"> <li>○ Number of newly identified nonnative fish species.</li> <li>○ Relative abundance of individual native fish and individual nonnative fish in the Delta.</li> </ul> </li> <li>• Assess progress <u>toward</u> managing invasive nonnative vegetation: <ul style="list-style-type: none"> <li>○ Number of newly identified invasive nonnative plant species reported in the Delta.</li> <li>○ Coverage, in acres, of invasive nonnative plant species (e.g., <i>Arundo donax</i> and <i>Phragmites australis</i>) in the Delta.</li> </ul> </li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li>• Number of new invasive nonnative species set at zero.</li> <li>• Abundance <u>or coverage</u> of existing specific nonnative species set at the adoption of the Delta Plan May 2013.</li> </ul> <p><b>Target:</b></p>

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					<p><del>• Difficult to define; decreased abundance of indicators (goal may be zero but that would be unlikely for many species until thresholds are developed). For fish, decrease relative abundance of nonnative/introduced fish.</del></p> <p><u>Trends for:</u></p> <ul style="list-style-type: none"> <li>• <u>Decreasing relative abundance of nonnative/introduced fish.</u></li> <li>• <u>Decreasing the number of newly identified nonnative fish species.</u></li> <li>• <u>Decreasing the number of newly identified invasive nonnative plant species.</u></li> <li>• <u>Decreasing coverage of invasive nonnative plant species.</u></li> </ul>
4.13	5	ER R9	Output	N/A: New measure	<p>All hatchery anadromous salmonids marked and tagged.</p> <p><b>Metric:</b></p> <ul style="list-style-type: none"> <li>• Percent marked and tagged, as reported by National Marine Fisheries Service and California Department of Fish and Wildlife.</li> </ul> <p><b>Baseline:</b></p> <p>As of May 2013 (Delta Plan adoption date):</p> <ul style="list-style-type: none"> <li>• 100% marked and tagged for Chinook salmon winter-run, spring-run and late-fall run.</li> <li>• 25% marked and tagged for Chinook salmon fall-run.</li> <li>• 0% tagged and 100% marked for steelhead.</li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• 100% of hatchery fish are marked and tagged.</li> </ul>

## Delta Plan Performance Measures Amendment: Staff Recommendation

### Delta Plan Chapter 5: Protect and Enhance the Unique Cultural, Recreational, Natural Resource, and Agricultural Values of the California Delta as an Evolving Place

#### Strategies supporting this chapter:

1. Designate the Delta as a Special Place
2. Plan to Protect the Delta’s Lands and Communities
3. Maintain Delta Agriculture
4. Encourage Recreation and Tourism
5. Sustain a Vital Delta Economy

- **Administrative** performance measures describe decisions made by policy makers and managers to finalize plans or approve resources (funds, personnel, projects) for implementation of a program or group of related programs.
- **Output** (also known as “driver”) performance measures evaluate the factors that may be influencing outcomes and include on-the-ground implementation of management actions, such as acres of habitat restored or acre-feet of water released, as well as natural phenomena outside of management control (such as a flood, earthquake, or ocean conditions).
- **Outcome** performance measures evaluate responses to management actions or natural outputs.

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5.1	1	DP R1	Output	Congress designates the Delta and Suisun Marsh as an NHA by January 1, 2014.	<b>Reclassify to administrative performance measure:</b> Congress designates a National Heritage Area that includes the Delta and Suisun Marsh by January 1, 2014.
5.2	2	DP R7	Outcome	The DWR and others increase the extent of their subsidence reversal and carbon sequestration projects to 5,000 acres by January 1, 2017.	The Department of Water Resources and others increase the extent of their subsidence reversal and carbon sequestration projects to 5,000 acres by January 1, 2017. <b>Metric:</b> • Acres of subsidence reversal and carbon sequestration projects. <b>Baseline:</b> • <del>Set at zero as of 2008. Baseline is set at 905 acres because from 2008-2011, 905 acres were converted and will be included towards meeting the target.</del> <b>Target:</b> • 5,000 acres by January 1, 2017 <del>(905 acres were converted in 2008-2011 and will be included towards meeting the target).</del>
5.3	2	DP P1	Outcome	No further rural farmland in the Delta is lost to urban development.	Prevent further Delta rural farmland loss to urban development in areas designated for agricultural use in Delta Plan regulations. Track conversions of farmland to habitat restoration areas. <b>Metrics:</b> • Acres of farmland lost to urban development. • Acres of farmland lost to urban development within areas designated for agricultural use in the Delta Plan regulations. • Acres of farmland converted to habitat restoration. <b>Baseline:</b> • Number of acres of Delta rural farmland designated for agriculture in Delta Plan regulations at the time of Delta Plan adoption in May of 2013. <b>Target:</b> • Zero acres of farmland lost to urban development within areas designated for agricultural use in the Delta Plan regulations.
5.4	2	DP P2	Output	Water management, ecosystem restoration, and flood	Water management, ecosystem restoration, and flood management projects <del>minimize conflicts with adjoining uses by avoiding, minimizing, or mitigating</del>

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				management projects minimize conflicts with adjoining uses by including adequate mitigation measures to avoid adverse effects.	<p><del>adverse effects. –avoid, minimize, or mitigate conflicts with adjoining uses by including adequate mitigation measures to avoid adverse effects.</del></p> <p><b>Metric:</b></p> <ul style="list-style-type: none"> <li>Percent of projects that avoid, minimize, or mitigate adverse effects to less than significant levels.</li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li>This performance measure was developed during the adoption of the Delta Plan (May 2013) with the primary purpose of measuring consistency with the Delta Plan, setting the baseline at May 2013.</li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li>100% consistency with the Delta Plan, measured on an annual basis.</li> </ul>
5.5	2	DP R3	Output	Progress toward protecting the Delta legacy communities, as indicated by renovation of historic structures, flood proofing, and other reductions in flood hazards, and maintenance or growth of small businesses and population.	<p>Progress toward preparing and implementing plans for <u>the vitality and preservation of</u> <del>for</del> each Delta legacy community.</p> <p><b>Metric:</b></p> <ul style="list-style-type: none"> <li>Number of projects initiated to achieve legacy community plan objectives.</li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li>Set at zero <del>as of the Delta Plan's adoption date, May 2013; the number of projects initiated to achieve legacy community plan objectives as of the Delta Plan's adoption date, May 2013, to capture all the projects that have been implemented after the plan was completed.</del></li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li><del>Number of projects is to be determined as plans are developed.</del> <u>Upward trend in the number of completed projects that improve community vitality.</u></li> </ul>
5.6	3	<u>DP R11</u> <del>DP R9</del>	Output	Recreation facilities are included in new ecosystem restoration projects.	<p><u>Track the extent to which R</u>recreation facilities are included in new ecosystem restoration projects. <del>(DP R14)</del></p> <p><b>Metric:</b></p> <ul style="list-style-type: none"> <li>Percent of new ecosystem restoration projects that include recreational facilities.</li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li><del>There have been no projects since the</del> <u>Measured as of the date of the Delta Plan's adoption, May 2013.</u></li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li><del>400%</del> <u>Increasing trend in the percentage</u> of new ecosystem restoration projects <u>that</u> include recreation facilities.</li> </ul>
5.7	3	DP R8	Outcome	N/A: New measure	<p><del>Increase in v</del>value-added crop processing <u>trends.</u></p> <p><b>Metric:</b></p> <ul style="list-style-type: none"> <li>Revenues (dollars) associated with value-added crop processing.</li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li><u>Measured as of the date of the Delta Plan's</u> adoption, <del>of the Delta Plan</del> May 2013.</li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li>Upward trend as measured by the metric above.</li> </ul>

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5.8	4	DP R11	Outcome	N/A: New measure	<p>Delta recreation and tourism trends.</p> <p><b>Metrics:</b></p> <ul style="list-style-type: none"> <li>• Acres of accessible state and federal owned land to the public for recreation and tourism.</li> <li>• Length (linear feet) of shoreline accessible for public recreation.</li> <li>• Number of fishing licenses bought per year by county.</li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li>• <u>Measured as of the date of the Delta Plan's</u> adoption, <del>of the Delta Plan</del> May 2013.</li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• Upward trend as measured by the metrics above.</li> </ul>
5.9	5	DP R18	Outcome	Increase tonnage of cargo and the number of jobs at the ports of Stockton and West Sacramento.	<p>Delta industrial, agricultural, and recreational economic trends.</p> <p><b>Metrics:</b></p> <ul style="list-style-type: none"> <li>• Tonnage of port cargo.</li> <li>• Agriculture revenue (dollars).</li> <li>• Recreation spending (dollars).</li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li>• <u>Measured as of the date of the Delta Plan's</u> adoption, <del>of the Delta Plan</del> May 2013.</li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• Upward trend as measured by the metric above.</li> </ul>

## Delta Plan Performance Measures Amendment: Staff Recommendation

### Delta Plan Chapter 6: Improve Water Quality to Protect Human Health and the Environment

#### Strategies supporting this chapter:

1. Require Delta-Specific Water Quality Protection
2. Protect Beneficial Uses By Managing Salinity
3. Improve Drinking Water Quality
4. Improve Environmental Water Quality

- **Administrative** performance measures describe decisions made by policy makers and managers to finalize plans or approve resources (funds, personnel, projects) for implementation of a program or group of related programs.
- **Output** (also known as “driver”) performance measures evaluate the factors that may be influencing outcomes and include on-the-ground implementation of management actions, such as acres of habitat restored or acre-feet of water released, as well as natural phenomena outside of management control (such as a flood, earthquake, or ocean conditions).
- **Outcome** performance measures evaluate responses to management actions or natural outputs.

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6.1	1	WQ R1	Outcome	Water quality in the Delta meets objectives established in the applicable water quality control plan.	Water quality in the Delta and Suisun Marsh meets the San Francisco, Central Valley, and Bay-Delta <del>Basin Plan</del> <u>Water Quality Control Plan</u> objectives. <b>Metric:</b> <ul style="list-style-type: none"> <li>• The reduction in the number of impaired water bodies on the 303(d) list.</li> </ul> <b>Baseline:</b> <ul style="list-style-type: none"> <li>• <u>Measured as of the date of the Delta Plan's</u> adoption, <del>of the Delta Plan</del> May 2013.</li> </ul> <b>Target:</b> <ul style="list-style-type: none"> <li>• Water quality objectives in the respective <u>Water Quality</u> Control Plans listed are met.</li> <li>• TMDLs are being developed and Basin Plan amendments are being implemented for those water bodies not meeting the water quality objectives (i.e., those listed under the Clean Water Act 303 (d) list).</li> </ul>
6.2	2		Outcome	N/A: New measure	Monitor salinity in the Delta, utilizing extensive existing electrical conductivity (D-1641) and X2 measurement data that <del>meets</del> <u>correspond to</u> State Water Resources Control Board objectives. <b>Metric:</b> <ul style="list-style-type: none"> <li>• Daily electrical conductivity and X2.</li> </ul> <b>Baseline:</b> <ul style="list-style-type: none"> <li>• Average annual salinity levels from 1995 to 2015.</li> </ul> <b>Target:</b> <ul style="list-style-type: none"> <li>• Meeting State Water Resources Control Board objectives for ecosystem purposes.</li> <li>• Meeting all other salinity objectives for urban and agricultural use.</li> </ul>
6.3	3	WQ R5	Output	DWR begins constructing the North Bay Aqueduct Alternate Intake Project as soon as possible after the environmental impact report is completed.	The Department of Water Resources begins constructing the North Bay Aqueduct Alternate Intake Project as soon as possible after the environmental impact report is completed. <b>Metric:</b> <ul style="list-style-type: none"> <li>• Project completed.</li> </ul> <b>Baseline:</b>

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					<ul style="list-style-type: none"> <li>The Notice of Preparation for the North Bay Aqueduct Alternate Intake Project Environmental Impact Report was published on November 24, 2009.</li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li><del>According to the project manager for</del> The North Bay Aqueduct Alternate Intake Project <del>s</del> the final Environmental Impact Report projected date is September/October 2016.</li> </ul>
6.4	3	WQ R6	Output	N/A: New measure	<ul style="list-style-type: none"> <li>Protect groundwater beneficial uses. Groundwater meets drinking water quality standards in the Central Valley<sup>1</sup> for levels of nitrate (10 ppm NO3-N) and arsenic (10 ppb As).</li> </ul> <p><b>Metrics:</b></p> <ul style="list-style-type: none"> <li>Number of groundwater wells used for domestic water supply <del>ies</del> that exceed arsenic and <del>or</del> nitrate drinking water limits in the San Joaquin Valley.</li> <li>Percentage of population with access to clean drinking water in the San Joaquin Valley.</li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li>Water quality standards in the Central Valley for levels of nitrate (10 ppm NO3-N) and arsenic (10 ppb As).</li> <li>Baseline of population with access to clean drinking water in the Central Valley will be established once this performance measure is adopted.</li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li>Maintain or reduce nitrate and arsenic levels from baseline levels.</li> <li>Increase percent of population with access to clean drinking water in the Central Valley from baseline.</li> </ul>
6.5	4	WQ R8 WQ R11 WQ R12	Outcome	Progress toward consistently meeting applicable DO standards in the Delta by 2020.	<p>Progress toward consistently meeting applicable dissolved oxygen (DO) standards in the Delta by 2020 (i.e., Stockton Deep Water Ship Channel, Suisun Marsh, <del>and</del> Old and Middle River, <del>and Sacramento Deep Water Ship Channel</del>).</p> <p><b>Metric:</b></p> <ul style="list-style-type: none"> <li>Milligrams of DO per liter of water (mg/L).</li> <li>Continuous, real-time <del>sensing of</del> DO <del>measurements is</del> made at multiple locations throughout the Delta.</li> </ul> <p><b>Baseline:</b></p> <p><del>Due to poor historical baseline details, the baseline is set to 5mg/L at all times and 6mg/L from September 1 — November 30, as that is the current DO regulatory standard. Measured as of the date of the Delta Plan's adoption, May 2013.</del></p> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li>Meet water quality objectives for DO in the Stockton Deep Water Ship Channel, Suisun Marsh, <del>and</del> Old and Middle River, <del>and Sacramento Deep Water Ship Channel</del>.</li> <li>Maintain or exceed the minimum DO concentrations of: <ul style="list-style-type: none"> <li>5 mg/L at all times <del>everywhere in the Delta</del>.</li> <li>6 mg/L from September through November <del>only in the San Joaquin River between Turner Cut and Stockton</del>.</li> </ul> </li> </ul>
6.6	4	WQ R9	Output	A Delta regional water quality monitoring program is implemented within the first 5 years of the Delta Plan.	<b>Reclassify to administrative performance measure:</b>

<sup>1</sup> This performance measure refers to the San Joaquin Valley because many residents of this region rely on impaired groundwater for drinking water and have limited access to clean surface water that is exported from the Delta watershed. The region is only specified to San Joaquin Valley because this region has many impaired domestic water systems and also receives water for domestic water supplies that is exported from the Valley.

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					A Delta regional monitoring program is implemented within the first 5 years of the Delta Plan.
6.7	4	WQ R8	Output	TMDLs for critical pesticides (i.e., diazinon, chlorpyrifos, and pyrethroids) in the waters and sediments of the Delta are met by 2020.	<p>TMDLs for critical pesticides (<u>e.g. i.e.</u>, diazinon, chlorpyrifos, and pyrethroids) in the waters and sediments of the Delta are met by 2020.</p> <p><b>Metric:</b></p> <ul style="list-style-type: none"> <li>Progress in developing and meeting TMDLs.</li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li>December 2004 monitoring baseline <u>data</u> to align with USEPA TMDL report.</li> </ul> <p><b>Target:</b></p> <p>As defined within applicable TMDL and published in the Central Valley Regional Water Quality Control Board amendments to the Water Quality Control Plan for the control of diazinon and chlorpyrifos runoff into the Sacramento-San Joaquin Delta (June 2006). <del>and proposed amendments for the control of Pyrethroid pesticides (May 2015).</del> Target date is defined in the Delta Plan as year 2020. Other compliance dates are defined in management plans submitted by dischargers. Following are in micrograms/liter:</p> <ul style="list-style-type: none"> <li>Chlorpyrifos: <ul style="list-style-type: none"> <li>0.025, acute, 1-hour average</li> <li>0.015, chronic, 4-day average</li> <li>Not to be exceeded once in a three year period</li> </ul> </li> <li>Diazinon: <ul style="list-style-type: none"> <li>0.16, acute, 1-hour average</li> <li>0.10, chronic, 4-day average</li> <li>Not to be exceeded once in a three year period.</li> </ul> </li> <li>Pyrethroids: <u>Target pending the adoption of the Pyrethroid Control Program into the Water Quality Control Plan for the Sacramento San Joaquin River Basins by 2017.</u></li> <li><del>Bifenthrin (Pyrethroid):</del> <ul style="list-style-type: none"> <li><del>0.06, acute, 1-hour average</del></li> <li><del>0.01, chronic, 4-day average</del></li> <li><del>Not to be exceeded once in a three-year period.</del></li> </ul> </li> <li><del>Cyfluthrin (Pyrethroid):</del> <ul style="list-style-type: none"> <li><del>0.07, acute, 1-hour average</del></li> <li><del>0.01, chronic, 4-day average</del></li> <li><del>Not to be exceeded once in a three-year period.</del></li> </ul> </li> <li><del>Cypermethrin (Pyrethroid):</del> <ul style="list-style-type: none"> <li><del>0.04, acute, 1-hour average</del></li> <li><del>0.01, chronic, 4-day average</del></li> <li><del>Not to be exceeded once in a three-year period.</del></li> </ul> </li> <li><del>Esfenvalerate (Pyrethroid):</del> <ul style="list-style-type: none"> <li><del>0.2, acute, 1-hour average</del></li> <li><del>0.03, chronic, 4-day average</del></li> <li><del>Not to be exceeded once in a three-year period.</del></li> </ul> </li> <li><del>Lambda-cyhalothrin (Pyrethroid):</del></li> </ul>

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					<ul style="list-style-type: none"> <li>○ <del>0.03, acute, 1-hour average</del></li> <li>○ <del>0.01, chronic, 4-day average</del></li> <li>○ <del>Not to be exceeded once in a three-year period.</del></li> <li>● <del>Permethrin (Pyrethroid):</del> <ul style="list-style-type: none"> <li>○ <del>6, acute, 1-hour average</del></li> <li>○ <del>1, chronic, 4-day average</del></li> <li>○ <del>Not to be exceeded once in a three-year period.</del></li> </ul> </li> </ul>
6.8	4	WQ R8	Output	Progress toward reducing concentrations of inorganic nutrients (ammonium, nitrate, and phosphate) in Delta waters over the next decade.	<p>Progress toward reducing concentrations and/or loads of inorganic nutrients (ammonium, nitrate, and phosphate) in Delta waters over the next decade.</p> <p><b>Metric:</b></p> <ul style="list-style-type: none"> <li>• Concentration and/or loads of ammonium, nitrate, and phosphate at key Delta water quality monitoring locations.</li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li>• Nutrient concentrations, loads, and trends during the period of 2004-2013.</li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li>● <del>Nutrient Strategic Plans or TMDLs have not been developed. Numeric nutrient endpoint/criteria are also under development. Water shall not contain biostimulatory substances which promote aquatic growth in concentrations that cause nuisance or adversely affect beneficial uses.</del></li> </ul>
6.9	4	WQ R8	Outcome	Trends in measurable toxicity from pesticides and other pollutants in Delta water will be downward over the next decade.	<p>Trends in measurable toxicity from pesticides, including herbicides, insecticides, and fungicides, and other pollutants (<del>i.e. pharmaceuticals, personal care products, and selenium</del>) in Delta water will be downward over the next decade.</p> <p><b>Metric:</b></p> <ul style="list-style-type: none"> <li>• Measurable toxicity testing using fish, invertebrates, and the USEPA approved test methods for algae.</li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li>• Trends associated with 2008 levels. (<u>The Stream Pollution Trends Monitoring Program monitors trends in toxicity and pollution of California waters, which and</u> was implemented in 2008.)</li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• Downward trend of measurable toxicity results for Delta water bodies.</li> </ul>
6.10	1, 4	WQ R3 WQ R8	Outcome	HABs will lessen in severity and spatial coverage in the Delta over the next decade.	<p><del>Harmful algal blooms will lessen in their</del> <u>Trends in the</u> abundance and spatial coverage <u>of harmful algal blooms</u> in the Delta <del>over the next decade.</del></p> <p><b>Metrics:</b></p> <ul style="list-style-type: none"> <li>• Aerial distribution estimates of harmful algal blooms (e.g., microcystis), by acres in the Delta.</li> <li>• Abundance of harmful algal blooms (e.g., microcystis) in the Delta.</li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li>• Sighting records with the Department of Water Resources during the period of 1999-2000.</li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• <u>Downward</u> <del>Trend</del> in <del>reducing</del> abundance and spatial coverage of harmful algal blooms <u>over the next decade.</u></li> </ul>

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6.11	1, 4	WQ R3 WQ R8	Outcome	The spatial distribution and productivity of nuisance nonnative aquatic plants will decline over the next decade.	<p><del>The Trends in the</del> spatial distribution and coverage of nuisance nonnative aquatic plants <del>will decline in the Delta over the next decade.</del></p> <p><b>Metric:</b></p> <ul style="list-style-type: none"> <li>• Acreage of invasive aquatic plants in the Delta (e.g., water hyacinth and others as data becomes available).</li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li>• 2000-2004 University of California Davis water hyacinth monitoring surveys.</li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• Downward trend in water hyacinth acreage <u>over the next decade.</u></li> </ul>

## Delta Plan Performance Measures Amendment: Staff Recommendation

### Delta Plan Chapter 7: Reduce Risk to People, Property, and State Interests in the Delta

#### Strategies supporting this chapter:

1. Improve Emergency Preparedness and Response
  2. Finance and Implement Local Flood Management Activities
  3. Prioritize Flood Management Investment
  4. Improve Residential Flood Protection
  5. Protect and Expand Floodways, Floodplains, and Bypasses
  6. Integrate Delta Levees and Ecosystem Function
  7. Limit State Liability
- **Administrative** performance measures describe decisions made by policy makers and managers to finalize plans or approve resources (funds, personnel, projects) for implementation of a program or group of related programs.
  - **Output** (also known as “driver”) performance measures evaluate the factors that may be influencing outcomes and include on-the-ground implementation of management actions, such as acres of habitat restored or acre-feet of water released, as well as natural phenomena outside of management control (such as a flood, earthquake, or ocean conditions).
  - **Outcome** performance measures evaluate responses to management actions or natural outputs.

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7.1	1	RR R1	Output	Responsible local, State, and federal agencies with emergency response authority implement the recommendations of the Sacramento-San Joaquin Delta Multi-Hazard Coordination Task Force (Water Code section 12994.5).	Responsible local, State, and federal agencies with emergency response authority implement the recommendations of the Sacramento-San Joaquin Delta Multi-Hazard Coordination Task Force (Water Code section 12994.5) <u>by January 1, 2014.</u>  <b>Metric:</b> <ul style="list-style-type: none"><li>• Percent of recommendations implemented.</li></ul> <b>Baseline:</b> <ul style="list-style-type: none"><li>• 0% (0/11) of recommendations implemented.</li></ul> <b>Target:</b> <ul style="list-style-type: none"><li>• 100% (11/11) of recommendations implemented.</li></ul>
7.2	1	RR R1	Outcome	No lives are lost in the Delta as a result of flood emergencies, and economic damages associated with Delta flood emergencies decrease.	<del>No lives are lost</del> <u>Trends in loss of life</u> in the Delta as a result of flood emergencies, and economic damages associated with Delta flood emergencies <del>decrease</del> .  <b>Metrics:</b> <ul style="list-style-type: none"><li>• Number of lives lost in the Delta as a result of flood emergencies.</li><li>• Dollars of National Flood Insurance Program (NFIP) claims in the Delta.</li></ul> <b>Baseline:</b> <ul style="list-style-type: none"><li>• Number of lives lost within the Delta in recent history is zero according to the National Oceanic and Atmospheric Administration’s Storm Events Database.</li><li>• NFIP claims can date back as far as the initial NFIP Flood Insurance Rate Maps for a given area. Some areas of the Delta have maps dating back as far as 1978.</li></ul> <b>Target:</b> <ul style="list-style-type: none"><li>• Zero lives lost from floods.</li><li>• Reduction in dollars of NFIP claims.</li></ul>

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7.3	3	RR P1	Output	Delta land acreage and the number of reclamation districts with levees below HMP are reduced.	<p><del>Levees reducing flood risk to Delta land and reclamation districts are improved. Level of flood risk reduction provided by Delta levees.</del></p> <p><b>Metrics:</b></p> <ul style="list-style-type: none"> <li>Percent of urban area in the Delta protected by levees meeting <u>the Federal Emergency Management Agency's (FEMA's)</u> 100-year protection standard.</li> <li>Percent of Delta land protected by levees at or above the PL 84-99 standard.</li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li>Percent of urban area in the Delta protected by levees meeting FEMA's 100-year protection standard and percent of Delta land protected by levees at or above the PL 84-99 standard at the time of Delta Plan adoption, May 2013.</li> </ul> <p><b>Target:</b></p> <p><del>100% of urban areas in the Delta are protected by levees meeting FEMA's 100-year protection standard, 100% of Delta land should be protected by levees at or above the PL 84-99 standard. Target pending completion of the Delta Levees Investment Strategy.</del></p>
7.4	3	RR P1	Output	Freshwater aqueducts passing through the Delta and the primary freshwater channel pathways through the Delta are protected by levees that provide adequate protection against floods and other risks of failure.	<p><b>REMOVED</b></p> <p><u>Notes:</u></p> <p>Levee improvements are addressed in Performance Measure 7.3.</p>
7.5	3	RR P1	Outcome	Water deliveries to East Bay Municipal Utilities District, Contra Costa Water District, the CVP, and the SWP are not interrupted by floods or earthquakes.	<p>Water delivery <del>ies are not interrupted</del> <u>nsed</u> by floods or earthquakes in the Delta.</p> <p><b>Metrics:</b></p> <ul style="list-style-type: none"> <li>Number of water delivery interruptions caused by floods or earthquakes in the Delta.</li> <li>Acre-feet of water not delivered due to disruptions caused by floods or earthquakes in the Delta.</li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li>N/A because this measure has a prescribed target and is not showing a change from a baseline.</li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li>No water delivery interruptions.</li> </ul>
7.6	4	RR P2	Output	New residential development takes into account sea level rise in flood protection planning and development.	<p><del>New residential development takes into account</del> <u>Consideration of</u> sea level rise in flood protection planning <del>and development for new residential development in the Delta.</del></p> <p><b>Metric:</b></p> <ul style="list-style-type: none"> <li>Number of proposed actions covered by the Delta Plan policy to require flood protection for residential development in rural areas (RR P2).</li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li>N/A because this measure has a prescribed target and is not showing a change from a baseline.</li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li>100% of proposed actions to which RR P2 are applicable meet the requirements of RR P2.</li> </ul>
7.7	3, 7	RR P1	Outcome	Emergency response and recovery costs are eligible for FEMA	<p><u>Trends in eligibility for federal reimbursement of</u> <del>E</del>emergency response and recovery costs <del>are eligible for federal reimbursement.</del></p>

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				reimbursement.	<p><b>Metrics:</b></p> <ul style="list-style-type: none"> <li>• Miles of levee active in U.S. Army Corps of Engineers' Rehabilitation and Inspection Program.</li> <li>• NFIP market penetration in the Delta.</li> <li>• Ratings of Delta communities participating in the NFIP Community Rating System.</li> </ul> <p><b>Baseline:</b></p> <ul style="list-style-type: none"> <li>• Miles of levee active in the Rehabilitation and Inspection Program, NFIP market penetration, and community ratings at the time of Delta Plan adoption, May 2013 or nearest available date.</li> </ul> <p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• Increasing trend.</li> </ul>
7.8	5	RR R5	Output	DWR and the CVFPB construct a bypass and floodway on the San Joaquin River near Paradise Cut.	<p><b>REMOVED</b></p> <p><u>Notes:</u></p> <p>This project is currently being tracked through an administrative performance measure.</p>