

Delta Plan Performance Measures – Staff Recommendations

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

| Ref. # | Strategy # | Policy or Rec. | Short Title | Type | Current Delta Plan Wording | Proposed Delta Plan Wording or Recommended Reclassification (in bold) | Performance Measure Components |
|--------|------------|----------------|---|---------|--|--|---|
| 3.25 | 1 | WR R1 | Percentage change in urban per capita water use | Outcome | 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. | 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>Metrics:</p> <ul style="list-style-type: none"> • Gallons per capita per day of urban water use. • Percentage change in urban per capita water use from SB X7-7 baseline years. <p>Baseline:</p> <ul style="list-style-type: none"> • 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. <p>Target:</p> <ul style="list-style-type: none"> • 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. <p>Data Sources:</p> <ul style="list-style-type: none"> • Urban Water Management Plans. • Public Water System Statistics. • State Water Resources Control Board's Conservation Reporting. <p>Notes:</p> <ul style="list-style-type: none"> • This target may be expanded if future legislation sets further goals for urban water conservation. |

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| 3.26 | 1 | WR R6 | Increase storm water use | Outcome | 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. | 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 AF/year by 2020 and by at least 1 MAF/year by 2030. | <p>Metric:</p> <ul style="list-style-type: none"> • Acre-feet per year of storm water use (e.g. capture and reuse, recharge, redirection to constructed wetlands or landscaping). <p>Baseline:</p> <ul style="list-style-type: none"> • 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. <p>Target:</p> <ul style="list-style-type: none"> • 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>Data Sources:</p> <ul style="list-style-type: none"> • Urban Water Management Plans. • Storm Water Resource Plans. <p>Notes:</p> <ul style="list-style-type: none"> • This target and baseline is likely to be changed in the coming months through the State Board's Storm Water Program's Strategy to Optimize Resource Management of Storm Water (STORMS). STORMS proposes setting new regional storm water use baselines and targets as well as regionally-based metrics for short-term and long-term storm water capture and beneficial use goals. STORMS may provide reporting that could become a data source in the future. |
| 3.27 | 1 | WR P1 | Increase local and regional supplies | Outcome | Progress toward increasing local and regional water supplies, measured by the amount of additional supplies made available (reported in 5-year increments from 2000). | <p>REMOVED</p> <p>Notes: 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 3.28).</p> | N/A because this measure is being removed. |

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| 3.28 | 1 | WR R1 WR R4 | Measurable reduction in reliance on the Delta | Output | 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. | Demonstrate that water suppliers that receive water from the Delta watershed have reduced reliance on the Delta and improved regional self-reliance. | <p>Metrics:</p> <ul style="list-style-type: none"> Volume and percent of total water used originating in the Delta watershed. Acre-feet per year of water use met from local and regional sources. Acre-feet per year of projected use of local and regional sources of supply. <p>Baseline:</p> <ul style="list-style-type: none"> Average Delta imports by hydrologic region as of Delta Plan adoption (May 2013), volume of local and regional supplies by hydrologic region as of Delta Plan adoption (May 2013). <p>Target:</p> <ul style="list-style-type: none"> Decreasing trend in volume of water imported from the Delta or percent of total water use met by Delta imports. Increase in local and regional supplies. The Delta Plan calls for “significant” reduction in reliance on the Delta, but not a specific amount of reduction or a specific timeframe. <p>Data Sources:</p> <ul style="list-style-type: none"> CA Water Plan. Urban Water Management Plans. Central Valley Project/ State Water Project Export Reports. |
| 3.31 | 1 | WR R6 | Meeting and setting goals | 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, | REMOVED Notes: Progress made in achieving existing goals will be covered in other performance measures including 3.25, 3.26, and 3.27. Setting expanded future goals is covered by administrative | N/A because this measure is being removed. |

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| | | | | | and water supply development. | measure WR R06-01. | |
| 3.34 | 1 | WR R1 | Agricultural water use efficiency | Output | N/A: new measure | Demonstrate an increase in efficiency in agricultural water use. | <p>Metrics: These metrics were defined by Department of Water Resources in Methodology for Quantifying the Efficiency of Agricultural Water Use, 2012.</p> <ul style="list-style-type: none"> Total water use fraction. Water management fraction. <p>Baseline::</p> <ul style="list-style-type: none"> 2012 Agricultural Water Management Plans or first available data as they are reported by water suppliers (see note). <p>Target::</p> <ul style="list-style-type: none"> Increase in efficiency. <p>Data Source:</p> <ul style="list-style-type: none"> Agricultural Water Management Plans. <p>Notes:</p> <ul style="list-style-type: none"> These metrics are currently included in some Agricultural Water Management Plans but are not required. Department of Water Resources has indicated that although these metrics are not currently required reporting, they are the ideal metrics for measuring agricultural water use efficiency. If they become a required element for Agricultural Water Management Plans, Department of Water Resources plans to include these metrics in the CA Water Plan aggregated to the basin level. |
| 3.32 | 2 | WR R9 | Groundwater management planning | Output | Information in updated Bulletin 118 is included in the next (2013) California Water Plan Update and in the 2015 UWMPs and AWMPs. | <p>Administrative Measure: Information in updated Bulletin 118 is included in the next (2018) California Water Plan Update and in the 2020 UWMPs and AWMPs.</p> <p><u>Notes:</u> Wording changed to reflect requirements of the 2014 Sustainable Groundwater Management Act.</p> | N/A because this measure is being reclassified as administrative. |

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| 3.33 | 2 | WR R11 | Recover and Manage Critically Overdrafted Basins | Outcome | N/A: new measure | Demonstrate progress towards decreasing the overall rate of groundwater depletion in critically overdrafted basins. | <p>Metrics:</p> <ul style="list-style-type: none"> Change in groundwater in storage. Groundwater elevations. <p>Baseline:</p> <ul style="list-style-type: none"> Regional groundwater estimates for California's Central Valley using satellite-based gravimetric sensors are available back to October of 2003. California Department of Water Resources has a network of long-term wells in the San Joaquin Valley (3124 wells) and Sacramento Valley (599 wells) that will be used to assess sub-basin groundwater trends. <p>Target:</p> <ul style="list-style-type: none"> Decreasing rate of groundwater depletion in critically overdrafted basins <p>Data Sources:</p> <ul style="list-style-type: none"> US Geological Survey's Central Valley Hydrologic Model. Gravity Recovery and Climate Experiment (GRACE). Sustainable Groundwater Management Plans. California Statewide Groundwater Elevation Monitoring (CASGEM). CA Water Plan. |
| 3.29 | 3 | WR R12 ER P1 RR P1 | Improve export reliability | Outcome | Progress toward improved reliability of Delta water exports and reductions in the vulnerability of Delta exports to disruption. | Demonstrate that water available to be exported through the Delta is not disrupted. | <p>Metric:</p> <ul style="list-style-type: none"> Percent of Central Valley Project/State Water Project allocations delivered each year. <p>Baseline:</p> <ul style="list-style-type: none"> N/A because this measure has a prescribed target and is not showing a change from a baseline. <p>Target:</p> <ul style="list-style-type: none"> Actual deliveries are within 10% of allocations. <p>Data Source:</p> <ul style="list-style-type: none"> Central Valley Project/State Water Project allocation and delivery reports. |
| 3.30 | 3 | WR R12 WR R14 | Increase delivery predictability | Outcome | Progress toward increasing the predictability of water deliveries from the Delta in a variety of water year types. | REMOVED <u>Notes:</u> This measure is duplicative and addressed by 3.29. | N/A because this measure is being removed. |

Delta Plan Performance Measures – Staff Recommendations

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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| 4.28 | 1 | ER R1 | Adopt Delta Flow Objectives | Output | The SWRCB adopts Delta flow objectives by June 2, 2014. | Administrative Performance Measure: The SWRCB adopts Delta flow objectives by June 2, 2014. | N/A |
| 4.31 | 1 | ER R1 | Progress towards restoring in-Delta flows | 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 more natural functional flow patterns to support ecological floodplain processes in the Yolo Bypass. Progress will likely require modifications to infrastructure and/or water management protocols that increase floodplain connectivity. <u>Notes:</u> The State Water Board is in the process of developing and implementing flow objectives for the Delta. This process may inform performance measures in the Delta in the future. Currently the Yolo Bypass flows will be used as a valuable indicator in the with which to measure success of floodplain inundating flow within the Delta. | Metric: <ul style="list-style-type: none"> • Frequency of achieving >17,000 acres of inundation for 14 or more consecutive days in the Yolo Bypass. Baseline: <ul style="list-style-type: none"> • Between 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. Target: <ul style="list-style-type: none"> • >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. Data Sources: <ul style="list-style-type: none"> • River discharge and river stage at select measurement stations, e.g., Fremont Weir. Data provided by California Department of Water Resources (DWR) and hosted by California Data Exchange Center (CDEC). • CDEC installs, maintains, and operates a hydrologic data collection network including flow data obtained at stations along the Sacramento and San Joaquin Rivers. • Yolo Bypass Salmonid Habitat Restoration and Fish Passage Implementation Plan, 2012. |

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| 4.33 | 1 | ER R1 | Adopt flow objectives for major tributaries | Output | The SWRCB adopts flow objectives for the major tributaries by 2018 (or as soon as reasonably possible). | Administrative Performance Measure: The SWRCB adopts flow objectives for the major tributaries by 2018 (or as soon as reasonably possible). | N/A |
| 4.38 | 1 | ER R1 | Spring pulse flows | Outcome | N/A: New measure | Progress toward restoring more natural functional flow patterns along the Sacramento River using pulse flows during the Spring. | <p>Metric:</p> <ul style="list-style-type: none"> Flows exceeding base flows. A flow, e.g. 5 to 10 times greater than the base flow, during the period of Spring flows. <p>Baseline:</p> <ul style="list-style-type: none"> Long-term historical hydrograph data retrieved from USGS stations from below Shasta. <p>Target:</p> <ul style="list-style-type: none"> At least one spring flow event 5 to 10 times within the base flow each year. <p>Data Source:</p> <ul style="list-style-type: none"> Long-term USGD gauge records along the Sacramento mainstem and Shasta Rivers. |
| 4.39 | 1 | ER R1 | Recession flows | Outcome | N/A: New measure | Progress toward restoring more natural functional flow patterns with gradual recession flows. | <p>Metric:</p> <ul style="list-style-type: none"> Rate of change in the hydrograph on the receding limb as measured from Spring high flows to Summer low flows. <p>Baseline:</p> <ul style="list-style-type: none"> Long-term historical hydrograph data retrieved from USGS stations from below Shasta. <p>Target:</p> <ul style="list-style-type: none"> Not to exceed daily drops in flow >10%. <p>Data Source:</p> <ul style="list-style-type: none"> Long-term USGD gauge records along the Sacramento mainstem and Shasta Rivers. |

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| 4.27 | 2 | ER R2 | Acres of habitat restored | 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. | <p>Delta habitat projects are constructed including the 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.</p> <p><u>Notes:</u></p> <p>The opportunity to align 30,000 acres from EcoRestore was not added because at least 3,500 acres of the 30,000 acres will not occur within the PRHAs. These 3,500 acres of carbon sequestration/subsidence reversal projects are already noted in Chapter 5 and are not part of the PRHAs because they will by design occur in subsided areas of the Delta not suitable for floodplain or tidal wetland restoration.</p> | <p>Metric:</p> <ul style="list-style-type: none"> Number of acres of restoration projects constructed by habitat type, including progress toward the biological opinions' targets of restoring 8,000 acres of tidal wetland and 17,000-20,000 acres of floodplain habitat in the Priority Restoration Habitat Areas (PRHAs). <p>Baseline:</p> <ul style="list-style-type: none"> 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. <p>Target:</p> <ul style="list-style-type: none"> 8,000 acres of tidal wetland and 17,000-20,000 acres of floodplain habitat restored in the PRHAs. <p>Data Sources:</p> <ul style="list-style-type: none"> The California EcoRestore program tracks and reports on habitat restoration progress in acres by habitat type on their website. Fish Restoration Program (FRP) annual reports contain acreage totals related to implementing the fish habitat restoration requirements and related actions of the biological opinions and the Incidental Take Permit (ITP) in the Delta, Suisun Marsh, and Yolo Bypass. The FRP is focused on restoring 8,000 acres of intertidal and sub-tidal habitat in the Delta and Suisun Marsh. Fishery Agency Strategy Team (FAST). USFWS, NMFS, DFW, and USBR are a part of FAST. FAST has a specific process for crediting DWR and USBR projects towards meeting the BOs. Confirmed credits are provided after project construction. The Delta Conservancy tracks habitat restoration projects progress using the publically accessible EcoAtlas database. |
| 4.29 | 2 | ER R2 | Progress towards BiOps' | 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>REMOVED</p> <p><u>Notes:</u></p> <p>This measure was merged with the focus of 4.29, which has the BiOps targets. Changed the focus the performance measure 4.27, pilot scale habitat restoration projects, to the current focus of the implementation of restoration.</p> | N/A |
| 4.30 | 2 | ER R2 | Progress toward "doubling goal" for wild CV salmonids | 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, US 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 US Fish and Wildlife Service, California Department of Fish and Wildlife, and others.</p> | <p>Metric:</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"> Sacramento River: |

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| | | | | | | | <ul style="list-style-type: none"> o American River o Feather River o Sacramento River mainstem • San Joaquin River: <ul style="list-style-type: none"> o Tuolumne River o Merced River o Stanislaus River o Mokelumne River <p>Baseline:</p> <ul style="list-style-type: none"> • Salmon population numbers relative to the period of 1967-1991. <p>Target:</p> <ul style="list-style-type: none"> • As defined by the Central Valley Project Improvement Act (CVPIA) “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.” <p>Data Sources:</p> <ul style="list-style-type: none"> • Long-term monitoring surveys conducted by the US Fish and Wildlife Service, California Department of Fish and Wildlife, and others. • ChinookProd, a spreadsheet database maintained by the USFWS Anadromous Fish Restoration Program (AFRP) to assess progress toward the CVPIA doubling goal. Data for ChinookProd is obtained from CDFW’s Grand Tab, which provides estimates based on counts of fish entering hatcheries and migrating past dams, carcass surveys, live fish counts, and ground and aerial red counts. • Estimates are provided by CDFW, USFWS DWR, EB MUD, USBR, the lower Yuba River Management team, and the Fisheries Foundation of California. Grand Tab does not characterize whether fish are wild or hatchery origin, just whether the adults are spawning in natural or hatchery areas. |
| 4.32 | 2 | ER R2 | Progress toward occurrence & use of protected & restored habitat by native species | 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 adaptive management strategies for the protection and restoration of these areas. | <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><u>Notes:</u></p> <p>Each project site is different, and each individual project will therefore have its own baseline and target. As such, the individuals conducting surveys will set appropriate baselines and targets.</p> | <p>Metrics:</p> <ul style="list-style-type: none"> • Assess native fish: <ul style="list-style-type: none"> o Relative abundance of native fish in and near restoration project sites. • Assess native birds: <ul style="list-style-type: none"> o Counts of waterfowl in the Delta. <p>Baseline:</p> <ul style="list-style-type: none"> • Baselines are set from monitoring prior to restoration at each site. <p>Target:</p> <ul style="list-style-type: none"> • 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. |

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| | | | | | | | <p>Data Sources:</p> <ul style="list-style-type: none"> Monitoring data for individual restoration projects. Protected sites (Cosumnes River Preserve, Yolo Bypass Wildlife Area, and the Stone Lakes NWR) also have monitoring data for many species, including birds and terrestrial wildlife. California Estuary Monitoring Workgroup (CEMW) is tasked with identifying key questions to assess the ecological health of the San Francisco Bay-Delta Estuary. The data can be found through the California Estuaries Portal. State of the Estuary Report. IEP Tidal Wetland Monitoring Project Work Team will collaborate in the design of monitoring programs for fish and food web resources in restored tidal wetlands in the Bay Delta system. This work is associated with FRP. |
| 4.37 | 2 | ER R2 | Landscape metrics to assess ecological functions | Outcome | N/A: New measure | <p>Assess the extent and distribution of specific ecological functions, use metrics for specific species or guilds of wildlife and define how the functions quantify.</p> | <p>Metrics:</p> <ul style="list-style-type: none"> Assess the function ‘Provides habitat and connectivity for fish’. <ul style="list-style-type: none"> Inundation extent, duration, timing, and frequency. Marsh to open water ratio. Adjacency of marsh to open water by length and marsh patch size. Ratio of looped to dendritic channels (by length and adjacent habitat type). Assess the function ‘Provides habitat and connectivity for marsh wildlife’. <ul style="list-style-type: none"> Marsh area by patch size (patch size distribution). Marsh area by nearest neighbor distance. Marsh core area ratio. Marsh fragmentation index. Assess the function ‘Provides habitat and connectivity for waterbirds’. <ul style="list-style-type: none"> Ponded area in summer by depth and duration. Wetted area by type in winter. Assess the function ‘Provides habitat and connectivity for riparian wildlife’. <ul style="list-style-type: none"> Riparian habitat area by patch size. Riparian habitat length by width class. Assess the function ‘Provides habitat and connectivity for marsh-terrestrial transition zone wildlife’. <ul style="list-style-type: none"> Length of marsh-terrestrial transition zone by terrestrial habitat type. <p>Baseline:</p> <p>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:</p> <ul style="list-style-type: none"> Managed wetlands: 0 |

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| | | | | | | | <ul style="list-style-type: none"> • Urban/Barren: 0 • Agriculture/Non-native: 0 • Stabilized interior dune vegetation: 1,032 • Willow riparian scrub/shrub: 1,637 • Willow thicket: 3,567 • Grassland: 9,108 • Alkali seasonal wetland complex: 9,193 • Vernal pool complex: 11,262 • Water: 13,772 • Valley foothill riparian: 15,608 • Oak woodland/savanna: 20,460 • Wet meadow/Seasonal wetland: 37,561 • Freshwater emergent wetland: 193,224 <p>Target:</p> <ul style="list-style-type: none"> • 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. <p>Data Source:</p> <ul style="list-style-type: none"> • SFEI. |
| 4.34 | 4 | ER R7 | Implement the 2014 ERP Conservation Strategy | Output | The DFW and other appropriate agencies fully implement the list of "Stage 2 Actions for Nonnative Invasive Species." | <p>Administrative Performance Measure:</p> <p>The DFW and other appropriate agencies fully implement the 2014 ERP "Conservation Strategy" list for Strategic Goal 5.</p> | N/A |
| 4.35 | 4 | ER P5 | Progress towards decreasing trends in new/existing nonnative invasive spp., and abundance/distribution of existing nonnative invasive spp. | 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>* Established invasive nonnative aquatic plants will be reported on in Chapter 6.</p> <p><u>Notes:</u></p> <p>A thorough assessment of progress toward managing invasive nonnative species in the Delta includes targeting new and existing species.</p> | <p>Metrics:</p> <ul style="list-style-type: none"> • Assess progress managing nonnative fish: <ul style="list-style-type: none"> ○ Relative abundance of individual native fish and individual nonnative fish in the Delta. ○ Number of newly identified nonnative fish species. • Assess progress managing invasive nonnative vegetation: <ul style="list-style-type: none"> ○ Number of newly identified invasive nonnative plant species reported in the Delta. ○ Coverage, in acres, of invasive nonnative plant species (e.g. Arundo donax and Phragmites australis) in the Delta. <p>Baseline:</p> <ul style="list-style-type: none"> • Number of new invasive nonnative species set at zero. • Abundance of existing specific nonnative species set at the adoption of the Delta Plan May 2013. |

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| | | | | | | | <p>Target:</p> <ul style="list-style-type: none"> 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. <p>Data Sources:</p> <ul style="list-style-type: none"> Long-term animal and plant monitoring surveys are conducted by the Interagency Ecological Program agencies. Programs aimed to prevent introduction of new species: <ul style="list-style-type: none"> CDFW’s Marine Invasive Species Program (MISP). California State Lands Commission (SLC). State of the Estuary Report data. California Estuaries Portal. Invasive Species Council of California (ISCC). The ISCC also appointed the California Invasive Species Advisory Committee (CISAC) to develop and prioritize an Invasive Species Action plan. Calflora, iNaturalist and CalWeedMapper applications. IEP data. UC Davis Suisun Marsh sampling. |
| 4.36 | 5 | ER R9 | Percent of hatchery fish that are marked and tagged | Output | N/A: New measure | All hatchery anadromous salmonids marked and tagged. | <p>Metric:</p> <ul style="list-style-type: none"> Percent marked and tagged as reported by NMFS and CDFW. <p>Baseline: As of May 2013 (Delta Plan adoption date):</p> <ul style="list-style-type: none"> 100% marked and tagged for Chinook salmon winter run, spring run and late fall run. 25% marked and tagged for Chinook salmon fall run. 0% tagged and 100% marked for steelhead. <p>Target:</p> <ul style="list-style-type: none"> 100% of hatchery fish are marked and tagged. <p>Data Sources:</p> <ul style="list-style-type: none"> NMFS reports. CDFW reports. |

Delta Plan Performance Measures – Staff Recommendations

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

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|--------|------------|----------------|--|--------|--|--|---|
| 5.27 | 1 | DP R1 | Designate NHA for Delta and Suisun Marsh | Output | Congress designates the Delta and Suisun Marsh as an NHA by January 1, 2014. | Administrative Performance Measure: Congress designates an NHA that includes the Delta and Suisun Marsh by January 1, 2014. | N/A |
| 5.24 | 2 | DP R7 | Subsidence reversal acreage | Output | The DWR and others increase the extent of their subsidence reversal and carbon sequestration projects to 5,000 acres by January 1, 2017. | The DWR and others increase the extent of their subsidence reversal and carbon sequestration projects to 5,000 acres by January 1, 2017. | <p>Metric:</p> <ul style="list-style-type: none"> • Acres of subsidence reversal and carbon sequestration projects. <p>Baseline:</p> <ul style="list-style-type: none"> • Baseline is set at 905 acres because from 2008-2011, 905 acres were converted and will be included towards meeting the target. <p>Target:</p> <ul style="list-style-type: none"> • 5,000 acres by January 1, 2017. <p>Data Sources:</p> <ul style="list-style-type: none"> • DWR’s Subsidence Reversal Projects, West Delta Program (FESSRO). • California Wetland Protocol Group, fact sheets and web site information. • Regional Conservation Partnership Program- for federal funding to construct wetlands for carbon reduction and subsidence reversal. • California EcoRestore program. • AB 32 Greenhouse Gas Reduction Fund (“Cap-and-Trade”). • Wetlands Restoration for Greenhouse Gas Reduction Program. This DFW program, to support the creation of over 2,000 acres of managed wetlands on state-owned lands and over 1,500 acres on private lands. |

| Ref. # | Strategy # | Policy or Rec. | Short Title | Type | Current Delta Plan Wording | Proposed Delta Plan Wording or Recommended Reclassification (in bold) | Performance Measure Components |
|--------|------------|----------------|---|---------|---|--|---|
| 5.25 | 2 | DP P1 | No further Delta rural farmland loss | Outcome | No further rural farmland in the Delta is lost to urban development. | <p>Prevent further Delta rural farmland loss to urban development in areas designated for agricultural use in Delta Plan regulations. Track agricultural conversions to habitat restoration.</p> <p><u>Notes:</u> Mapping classifications, terminology, and use of thresholds will be defined by the Farmland Mapping and Monitoring Program.</p> | <p>Metrics:</p> <ul style="list-style-type: none"> • Acres of farmland lost to urban development. • Acres of farmland converted to habitat restoration. <p>Baseline:</p> <ul style="list-style-type: none"> • Number of acres of Delta rural farmland designated for agriculture in Delta Plan regulations at the time of Delta Plan adoption, May 2013. <p>Target:</p> <ul style="list-style-type: none"> • Zero acres of farmland lost to urban development within areas designated for agricultural use in the Delta Plan regulations. <p>Data Source:</p> <ul style="list-style-type: none"> • Department of Conservation's (DOC) Farmland Mapping and Monitoring Program (FMMP) data. |
| 5.26 | 2 | DP P2 | Minimize water and habitat project impacts on local land uses | Output | Water management, ecosystem restoration, and flood management projects minimize conflicts with adjoining uses by including adequate mitigation measures to avoid adverse effects. | Water management, ecosystem restoration, and flood management projects avoid, minimize, or mitigate conflicts with adjoining uses by including adequate mitigation measures to avoid adverse effects. | <p>Metric:</p> <ul style="list-style-type: none"> • Percent of projects that avoid, minimize, or mitigate adverse effects to less than significant levels. <p>Baseline:</p> <ul style="list-style-type: none"> • 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. <p>Target:</p> <ul style="list-style-type: none"> • 100% consistency with the Delta Plan, measured on an annual basis. <p>Data Sources:</p> <ul style="list-style-type: none"> • Council Certification of Consistency. The Council has developed an online certification of consistency form in which the user will provide the necessary detailed findings of consistency. • Council Planning Division. Planning staff will utilize web-based resources, state and other databases, and outreach to relevant personnel to carry out research and project analyses. • CEQAnet database provides environmental documents. • Fish Restoration Program meeting materials. • Delta Restoration Network (DRN) explores appropriate platforms that will allow for the synthesis of data at appropriate scales. Receive information by attending meetings. • Delta Protection Commission data and meeting materials. • West Delta Program (FSSRO), DWR oversees Delta subsidence reversal projects. • Outreach: External experts from DWR's West Delta Program. |

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| 5.29 | 2 | DP R3 | Progress toward Delta Legacy Communities | 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. | Progress toward preparing and implementing plans for each Delta legacy community. | <p>Metric:</p> <ul style="list-style-type: none"> Number of projects initiated to achieve legacy community plan objectives. <p>Baseline:</p> <ul style="list-style-type: none"> Set at zero, 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. <p>Target:</p> <ul style="list-style-type: none"> Target number of projects are to be determined as plans are developed. <p>Data Sources:</p> <ul style="list-style-type: none"> Legacy community plans. DPC, Delta counties, incorporated legacy towns (Rio Vista, Isleton), Delta community organizations involved in developing and implementing community plans. |
| 5.28 | 3 | DP R9 | Include recreation facilities in ecosystem projects | Output | Recreation facilities are included in new ecosystem restoration projects. | Recreation facilities are included in new ecosystem restoration projects. (DP R11) | <p>Metric:</p> <ul style="list-style-type: none"> Percent of new ecosystem restoration projects that include recreational facilities. <p>Baseline:</p> <ul style="list-style-type: none"> There have been no projects since the adoption of the Delta Plan, May 2013. <p>Target:</p> <ul style="list-style-type: none"> 100% of new ecosystem restoration projects include recreation facilities. <p>Data Sources:</p> <ul style="list-style-type: none"> Environmental documents/comments from project proponents. Staff would also utilize web-based resources, state and other databases, and outreach to relevant personnel to carry out research and project analysis. Delta Protection Commission (DPC) data and meeting materials. The DPC reports on and provides a balance between conservation, development of Delta land resources, and improved flood protection. This includes agriculture, wildlife habitat and recreational activities. Sacramento-San Joaquin Delta Conservancy (Delta Conservancy) data and meeting materials. Delta Land Management Workgroup data. DWR Land Use Subcommittee Workgroup that focuses on land use in the context of habitat restoration and flood management. Ecosystem Restoration Program (ERP). The principle activity is to manage funded grant projects within the ERP Focus Area. |

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| 5.32 | 3 | DP R8 | Promote value-added crop processing | Outcome | N/A: New measure | Increase in value-added crop processing. | <p>Metric:</p> <ul style="list-style-type: none"> Revenues (dollars) associated with value-added crop processing. <p>Baseline:</p> <ul style="list-style-type: none"> Adoption of the Delta Plan May 2013. <p>Target:</p> <ul style="list-style-type: none"> Upward trend as measured by the metric above. <p>Data Source:</p> <ul style="list-style-type: none"> Economic Sustainability Plan. |
| 5.33 | 4 | DP R11 | Delta recreation and tourism activities and success | Outcome | N/A: New measure | Delta recreation and tourism trends. | <p>Metrics:</p> <ul style="list-style-type: none"> Acres of accessible state and federal owned land to the public for recreation and tourism. Linear (Feet) of shore line accessible for public recreation. Number of fishing licenses bought per year by county. <p>Baseline:</p> <ul style="list-style-type: none"> Adoption of the Delta Plan May 2013. <p>Target:</p> <ul style="list-style-type: none"> Upward trend as measured by the metrics above. <p>Data Sources:</p> <ul style="list-style-type: none"> Department of Parks and Recreation Park (CDPR) Access Tool. CDPR Community FactFinder. CDPR Grant Allocations. Statewide Comprehensive Outdoor Recreation Plan (SCORP). California Department of Fish and Wildlife License Statistics. California Protected Areas Data Portal (CPAD). |

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| 5.30 | 5 | DP R18 | Track cargo tonnage and jobs at ports | 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><u>Notes:</u></p> <p>It is recognized that this measure needs to be broadened to include socioeconomic indicators. UC Davis, under contract with the DPC, recently developed a Regional Opportunity Index (ROI) for the Delta. The ROI is based on a long list of metrics, and to select a subset of metrics from this list to use as Delta Plan performance measures is premature. Socioeconomic metrics will be developed in consultation with the DPC, and may be based on the ROI.</p> | <p>Metrics:</p> <ul style="list-style-type: none"> • Tonnage of port cargo. • Agriculture revenue (dollars). • Recreation spending (dollars). <p>Baseline:</p> <ul style="list-style-type: none"> • Adoption of the Delta Plan May 2013. <p>Target:</p> <ul style="list-style-type: none"> • Upward trend as measured by the metrics above. <p>Data Sources:</p> <ul style="list-style-type: none"> • DPC's Economic Sustainability Plan. • Port of Stockton annual report. • City of West Sacramento Annual Financial report. • City of West Sacramento, Port of West Sacramento Business Plan. • USACE Waterborne Commerce Statistics Center. • DPC's Regional Opportunity Index for the Delta, developed by UC Davis. |

Delta Plan Performance Measures – Staff Recommendations

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

| Ref. # | Strategy # | Policy or Rec. | Short Title | Type | Current Delta Plan Wording | Proposed Delta Plan Wording or Recommended Reclassification (in bold) | Performance Measure Components |
|--------|------------|----------------|---|---------|---|---|--|
| 6.22 | 1 | WQ-R1 | Meet control plan objectives | 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 Basin Plan objectives. | <p>Metric:</p> <ul style="list-style-type: none"> • The reduction in the number of impaired water bodies on the 303d list. <p>Baseline:</p> <ul style="list-style-type: none"> • Adoption of the Delta Plan May 2013. <p>Target:</p> <ul style="list-style-type: none"> • Water quality objectives in the respective Control Plans listed, are met. • TMDLs are being developed and Basin Plan amendments are being implemented for those water bodies not meeting the water quality objective (i.e. those listed under the Clean Water Act 303 (d) list). <p>Data Sources:</p> <ul style="list-style-type: none"> • SWRCB website database: State Board Bay-Delta Plan efforts. • CVRWQCB website database: Central Valley Regional Board Basin Planning. • SFBRWQCB website database: San Francisco Basin Planning. |
| 6.19 | 2 | | Salinity Management/ Salinity Trends | Outcome | N/A: New measure | Monitor salinity in the Delta, utilizing extensive existing electrical conductivity (D1641) and X2 measurement data that meets State Water Resources Control Board objectives. | <p>Metric:</p> <ul style="list-style-type: none"> • Daily electrical conductivity and X2. <p>Baseline:</p> <ul style="list-style-type: none"> • Average annual salinity levels from 1995 to 2015. <p>Target:</p> <ul style="list-style-type: none"> • Meeting State Water Resources Control Board objectives for ecosystem purposes. • Meeting all other salinity objectives for urban and agricultural use. <p>Data Sources:</p> <ul style="list-style-type: none"> • California Data Exchange Center (CDEC) data. • Delta Compliance report provides daily flow and water quality status by station. • Real Time Data and Forecasting Comprehensive Program (RTDF-CP) report. • Bay-Delta Live visual model of salinity changes in the Delta over time. • My Water Quality Portal. |

| Ref. # | Strategy # | Policy or Rec. | Short Title | Type | Current Delta Plan Wording | Proposed Delta Plan Wording or Recommended Reclassification (in bold) | Performance Measure Components |
|--------|------------|----------------|-------------------------------------|--------|---|--|---|
| | | | | | | | <ul style="list-style-type: none"> Historic Fresh Water and Salinity Conditions in the Western Sacramento-San Joaquin Delta and Suisun Bay report – SWRCB February 2010. |
| 6.23 | 3 | WQ-R5 | Construct No-Bay Aqueduct AIP | Output | DWR begins constructing the North Bay Aqueduct Alternate Intake Project as soon as possible after the environmental impact report is completed. | DWR begins constructing the North Bay Aqueduct Alternate Intake Project as soon as possible after the environmental impact report is completed. | <p>Metric:</p> <ul style="list-style-type: none"> Project completed. <p>Baseline:</p> <ul style="list-style-type: none"> The Notice of Preparation (NOP) For the North Bay Aqueduct Alternate Intake Project Environmental Impact Report (EIR) was published on November 24, 2009. <p>Target:</p> <ul style="list-style-type: none"> According to the project manager for the North Bay Aqueduct Alternate Intake Project, the final EIR projected date is September/October 2016. <p>Data Sources:</p> <ul style="list-style-type: none"> Department of Water Resources “current projects” information web page. Outside source: Department of Water Resources project manager. |
| 6.28 | 3 | WQ-R6 | Protect groundwater beneficial uses | Output | N/A: New measure | Protect groundwater beneficial uses. Groundwater meets drinking water quality standards in the Central Valley for levels of nitrate 10ppm NO3-N and arsenic 10ppb As. | <p>Metrics:</p> <ul style="list-style-type: none"> Number of groundwater wells used for domestic water supplies that exceed arsenic and nitrate drinking water limits in the San Joaquin Valley. Percentage of population with access to clean drinking water in the San Joaquin Valley.¹ <p>Baseline:</p> <ul style="list-style-type: none"> Water Quality standards in the Central Valley for levels of nitrate 10ppm NO3-N and arsenic 10ppb As. Baseline of population with access to clean drinking water in the Central Valley will be established once this performance measure is adopted. <p>Target:</p> <ul style="list-style-type: none"> Maintain or reduce nitrate and arsenic levels from baseline levels. Increase percent of population with access to clean drinking water in the Central Valley from baseline. <p>Data Sources:</p> <ul style="list-style-type: none"> Track access to clean drinking water through permitting from State Water Resources Control Board. USGS data. California Environmental Protection Agency data. US Environmental Protection Agency data. SWRCB data and My Water Quality Portal. |

¹ 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.

| Ref. # | Strategy # | Policy or Rec. | Short Title | Type | Current Delta Plan Wording | Proposed Delta Plan Wording or Recommended Reclassification (in bold) | Performance Measure Components |
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| | | | | | | | <ul style="list-style-type: none"> SWRCB Drinking Water Programs. |
| 6.18 | 4 | WQ-R8 WQ-R11 WQ-R12 | Meet dissolved oxygen standards | Outcome | Progress toward consistently meeting applicable DO standards in the Delta by 2020. | Progress toward consistently meeting applicable DO standards in the Delta by 2020 (i.e. Stockton Deep Water Ship Channel, Suisun Marsh, Old and Middle River, and Sacramento Deep Water Ship Channel). | <p>Metric:</p> <ul style="list-style-type: none"> Milligrams of dissolved oxygen per liter of water (mg/L). <p>Baseline:</p> <ul style="list-style-type: none"> 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. <p>Target:</p> <ul style="list-style-type: none"> Meet water quality objectives for DO in the Stockton Deep Water Ship Channel, Suisun Marsh, Old and Middle River, and Sacramento Deep Water Ship Channel. Maintain or exceed the minimum DO concentrations of: <ul style="list-style-type: none"> 5 mg/L at all times. 6 mg/L from September through November. <p>Data Sources:</p> <ul style="list-style-type: none"> DO data and graphs from CDEC. Stockton Deep Water Ship Channel monthly DO data reports from the Day-Delta Office, DWR. NOAA National Estuarine Research Reserve System (NERRS) Centralized Data Management website. Outreach: External experts with water boards. |
| 6.20 | 4 | WQ-R9 | Implement Delta Regional Monitoring Program (RMP) | Output | A Delta regional water quality monitoring program is implemented within the first 5 years of the Delta Plan. | <p>Administrative Performance Measure:</p> <p>A Delta regional monitoring program is implemented within the first 5 years of the Delta Plan.</p> | N/A |
| 6.21 | 4 | WQ-R8 | Concentration of pesticides | Output | TMDLs for critical pesticides (i.e., diazinon, chlorpyrifos, and pyrethroids) in the waters and sediments of the Delta are met by 2020. | TMDLs for critical pesticides (i.e., diazinon, Pyrethroids and chlorpyrifos) in the waters and sediments of the Delta are met by 2020. | <p>Metric:</p> <ul style="list-style-type: none"> Progress in developing and meeting TMDLs. <p>Baseline:</p> <ul style="list-style-type: none"> December 2004 monitoring baseline to align with USEPA Total Maximum Daily Load (TMDL) report. <p>Target:</p> <p>As defined within applicable TMDL and published in the Central Valley (CV) 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); and proposed amendments for the control of Pyrethroid pesticides (May 2015). Target date is defined in the Delta Plan as year 2020. Other compliance dates are defined in management plans submitted by dischargers.</p> |

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|--------|------------|----------------|-------------|------|----------------------------|---|--|
| | | | | | | | <p>Following are in micrograms/liter:</p> <ul style="list-style-type: none"> • Chlorpyrifos: <ul style="list-style-type: none"> ○ 0.025, acute, 1-hour average ○ 0.015, chronic, 4-day average ○ Not to be exceeded once in a three year period • Diazinon: <ul style="list-style-type: none"> ○ 0.16, acute, 1-hour average ○ 0.10, chronic, 4-day average ○ Not to be exceeded once in a three year period. • Bifenthrin (Pyrethroid): <ul style="list-style-type: none"> ○ 0.06, acute, 1-hour average ○ 0.01, chronic, 4-day average ○ Not to be exceeded once in a three year period. • Cyfluthrin (Pyrethroid): <ul style="list-style-type: none"> ○ 0.07, acute, 1-hour average ○ 0.01, chronic, 4-day average ○ Not to be exceeded once in a three year period. • Cypermethrin (Pyrethroid): <ul style="list-style-type: none"> ○ 0.04, acute, 1-hour average ○ 0.01, chronic, 4-day average ○ Not to be exceeded once in a three year period. • Esfenvalerate (Pyrethroid) : <ul style="list-style-type: none"> ○ 0.2, acute, 1-hour average ○ 0.03, chronic, 4-day average ○ Not to be exceeded once in a three year period. • Lambda-cyhalothrin (Pyrethroid): <ul style="list-style-type: none"> ○ 0.03, acute, 1-hour average ○ 0.01, chronic, 4-day average ○ Not to be exceeded once in a three year period. • Permethrin (Pyrethroid): <ul style="list-style-type: none"> ○ 6, acute, 1-hour average ○ 1, chronic, 4-day average ○ Not to be exceeded once in a three year period. <p>Data Sources:</p> <ul style="list-style-type: none"> • Excel export from California Environmental Data Exchange Network (CEDEN) website. • Excel export of pesticide monitoring data not already in CEDEN, Region #5, TMDLs. • TMDL Outcome Measures Report Cards (Water Boards Annual Performance Report), Office of Research, Planning & Performance. • Preliminary TMDL Implementation progress reports, US EPA, and Sacramento. |

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| | | | | | | | <ul style="list-style-type: none"> California Pesticide Information Portal (CalPIP): DPR Pesticide Use Report Database, Summaries, and related links. NPDES: National Pollutant Discharge Elimination System (NPDES) permit, for point source water quality data obtained from water permits, USEPA and CA Water Boards. East San Joaquin Water Quality Coalition: The Coalition represents “dischargers” specifically comprising agricultural and growers. The coalition is an alternative source of non-point source pesticide load data. SWRCB 2010 303(d) Integrated Report: Format: List of impaired water bodies, by region and water body name. Donald P. Weston publications on pesticides. |
| 6.24 | 4 | WQ-R8 | Reduce inorganic nutrients | 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><u>Notes:</u></p> <p>According to the Central Valley Regional Water Quality Control Board, the Delta has long been recognized as having elevated concentrations of nutrients. These high nutrient levels were not clearly linked to widespread water quality problems except for periodic low oxygen levels. However, the effects of nutrients on the Delta are now being reassessed.</p> <p>The Water Board staff developed a Strategic Work plan, which contains a nutrient strategy that included tasks, deliverables and a timeline. The goal is to develop a Delta Nutrient Research Plan to determine whether nutrient concentrations cause or contribute to water quality problems in the Delta.</p> | <p>Metric:</p> <ul style="list-style-type: none"> Concentration and/or loads of ammonium, nitrate, and phosphate at key Delta water quality monitoring locations. <p>Baseline:</p> <ul style="list-style-type: none"> Nutrient concentrations, loads, and trends during the period of 2004-2013. <p>Target: N/A</p> <ul style="list-style-type: none"> Nutrient Strategic Plans or TMDLs have not been developed. Numeric nutrient endpoint/criteria are also under development. <p>Data Sources:</p> <ul style="list-style-type: none"> National Water Quality Monitoring Council- Water Quality Portal. CEDEN. Brandon Schlegel and Joseph L. Domagalski publication on “Riverine Nutrient Trends in the Sacramento and San Joaquin River Basins, California: A Comparison to State and Regional Water Quality Policies”. |

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|--------|------------|----------------|-----------------------------|---------|--|---|--|
| 6.25 | 4 | WQ-R8 | Reduce measureable toxicity | Outcome | Trends in measurable toxicity from pesticides and other pollutants in Delta water will be downward over the next decade. | Trends in measurable toxicity from pesticides, including herbicides, insecticides, and fungicides , and other pollutants (i.e. pharmaceuticals, personal care products, and selenium) in Delta water will be downward over the next decade. | <p>Metric:</p> <ul style="list-style-type: none"> Measurable toxicity testing using fish, invertebrates, and the USEPA approved test methods for algae. <p>Baseline:</p> <ul style="list-style-type: none"> Trends associated with 2008 levels. Stream Pollution Trends (SPoT) Monitoring Program, monitors trends in toxicity and pollution of California water, which was implemented in 2008. <p>Target:</p> <ul style="list-style-type: none"> Downwards trend of measurable toxicity results for Delta water bodies. <p>Data Sources:</p> <ul style="list-style-type: none"> SWRCB, Stream Pollution Trends Monitoring Program (SPoT). SWRCB, Surface Water Ambient Monitoring Program (SWAMP). San Francisco Estuary Institute, contaminant data. SWRCB, (CEDEN). USGS database. |
| 6.26 | 1, 4 | WQ-R3 WQ-R8 | Lessen harmful algal blooms | Outcome | HABs will lessen in severity and spatial coverage in the Delta over the next decade. | HABs will lessen in their abundance and spatial coverage in the Delta over the next decade. | <p>Metrics:</p> <ul style="list-style-type: none"> Aerial distribution estimates of harmful algal blooms (HABs), by acres in the Delta, (e.g. microcystis). Abundance of harmful algal blooms (HABs), in the Delta, (e.g. microcystis). <p>Baseline:</p> <ul style="list-style-type: none"> Sighting records with DWR dates back to the 1999-2000. <p>Target:</p> <ul style="list-style-type: none"> Trend in reducing abundance and spatial coverage based on the 2000-2015 baseline data. <p>Data Sources:</p> <ul style="list-style-type: none"> California Environmental Data Exchange Network data (CEDEN). Delta RMP monitoring program. Outreach: External experts with UC Davis water quality programs or DWR's water quality staff. |

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| 6.27 | 1, 4 | WQ-R3 WQ-R8 | Lessen nuisance non-native plants | Outcome | The spatial distribution and productivity of nuisance nonnative aquatic plants will decline over the next decade. | <p>The spatial distribution and coverage of nuisance nonnative aquatic plants will decline over the next decade.</p> <p><u>Notes:</u></p> <p>The only data available Delta-wide and for multiple years, is water hyacinth. Monitoring of the entire Delta or discrete units of concern must be conducted for other aquatic invasive species of concern. Individual baselines for each aquatic invasive plant species will be established due to individual plant ecology.</p> <p>Although a baseline has been established based on the 2000-2004 UC Davis data, DPR/DBW and NASA are currently conducting Delta-wide land surveys for water hyacinth. The survey is analyzing historical satellite imagery of the Delta, and will provide a more accurate baseline for the spatial distribution and coverage, as well as help detect any future trends.</p> | <p>Metric:</p> <ul style="list-style-type: none"> • Acreage of invasive aquatic plants in the Delta (e.g. water hyacinth and others as data becomes available). <p>Baseline:</p> <ul style="list-style-type: none"> • 2000-2004 UC Davis water hyacinth monitoring surveys. <p>Target:</p> <ul style="list-style-type: none"> • Water hyacinth is trending downward. <p>Data Sources:</p> <ul style="list-style-type: none"> • Department of Parks and Recreation/ Division of Boating and Waterways annual reports. • Department of Parks and Recreation/ Division of Boating and Waterways, NASA, and United State Department of Agriculture – Agricultural Research Service published studies. • UC Davis experts regarding aerial mapping of spatial extent using remote sensing data. • Floating and Submerged Aquatic Vegetation section in the State of the Estuary Report. • California Estuary Monitoring Workgroup Portal. • USDA-ARS conducts research to develop new methods and technologies for aquatic weed control programs in the Delta and throughout the Western US. • Individual monitoring reports from specific sites. |

Delta Plan Performance Measures – Staff Recommendations

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

| Ref. # | Strategy # | Policy or Rec. | Short Title | Type | Current Delta Plan Wording | Proposed Delta Plan Wording or Recommended Reclassification (in bold) | Performance Measure Components |
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| 7.20 | 1 | RR-R1 | Implement multi-hazard emergency response | 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). | <p>Metric:</p> <ul style="list-style-type: none"> • Percent of recommendations implemented. <p>Baseline:</p> <ul style="list-style-type: none"> • 0% (0/11) of recommendations implemented. <p>Target:</p> <ul style="list-style-type: none"> • 100% (11/11) of recommendations implemented. <p>Data Source:</p> <ul style="list-style-type: none"> • Interviews with Department of Water Resources, CA Governor's Office of Emergency Services, and local emergency agencies. |
| 7.21 | 1 | RR-R1 | Reduce casualties and economic damages | Outcome | No lives are lost in the Delta as a result of flood emergencies, and economic damages associated with Delta flood emergencies decrease | No lives are lost in the Delta as a result of flood emergencies, and economic damages associated with Delta flood emergencies decrease. | <p>Metrics:</p> <ul style="list-style-type: none"> • Number of lives lost in the Delta as a result of flood emergencies. • Dollars of National Flood Insurance Program (NFIP) claims in the Delta. <p>Baseline:</p> <ul style="list-style-type: none"> • Number of lives lost within the Delta in recent history is zero according to the National Oceanic and Atmospheric Administration's Storm Events Database. • 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. <p>Target:</p> <ul style="list-style-type: none"> • Zero lives lost from floods. • Reduction in dollars of NFIP claims. <p>Data Sources:</p> <ul style="list-style-type: none"> • National Oceanic and Atmospheric Administration Storm Events Database. • National Flood Insurance Program Claims Database. |

| Ref. # | Strategy # | Policy or Rec. | Short Title | Type | Current Delta Plan Wording | Proposed Delta Plan Wording or Recommended Reclassification (in bold) | Performance Measure Components |
|--------|------------|----------------|---|---------|--|---|--|
| 7.22 | 3 | RR-P1 | Levees below HMP | Output | Delta land acreage and the number of reclamation districts with levees below HMP are reduced. | <p>Levees reducing flood risk to Delta land and reclamation districts are improved.</p> <p><u>Notes:</u> HMP is no longer an appropriate levee standard goal because FEMA has terminated its HMP reimbursement MOU.</p> | <p>Metrics:</p> <ul style="list-style-type: none"> Percent of urban area in the Delta protected by levees meeting FEMA's 100-year protection standard. Percent of Delta land protected by levees at or above the PL 84-99 standard. <p>Baseline:</p> <ul style="list-style-type: none"> 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. <p>Target:</p> <ul style="list-style-type: none"> 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. <p>Data Sources:</p> <ul style="list-style-type: none"> FEMA lists of Accredited and Provisionally Accredited Levees. FEMA Flood Insurance Rate Maps. Department of Water Resources' lists of active levee projects. <p>Notes:</p> <ul style="list-style-type: none"> These metrics do not reflect Delta Plan regulatory policy and will be further refined upon completion of the Delta Levees Investment Strategy. |
| 7.23 | 3 | RR-P1 | Water delivery facilities - freshwater aqueducts | 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>REMOVED</p> <p><u>Notes:</u> Levee improvements are addressed in 7.22.</p> | N/A because this measure is being removed. |
| 7.24 | 3 | RR-P1 | Water delivery facilities - EBMUD, CCWD, CVP, SWP | 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 deliveries are not interrupted by floods or earthquakes in the Delta.</p> <p><u>Notes:</u> Wording changed to track all water deliveries interrupted by disasters. Removed references to specific suppliers.</p> | <p>Metrics:</p> <ul style="list-style-type: none"> Number of water delivery interruptions caused by floods or earthquakes in the Delta. Acre-feet of water not delivered due to disruptions caused by floods or earthquakes in the Delta. <p>Baseline:</p> <ul style="list-style-type: none"> N/A because this measure has a prescribed target and is not showing a change from a baseline. <p>Target:</p> <ul style="list-style-type: none"> No water delivery interruptions. <p>Data Source:</p> <ul style="list-style-type: none"> Historical delivery/diversion reports. |

| Ref. # | Strategy # | Policy or Rec. | Short Title | Type | Current Delta Plan Wording | Proposed Delta Plan Wording or Recommended Reclassification (in bold) | Performance Measure Components |
|--------|------------|----------------|--|---------|---|---|---|
| 7.27 | 4 | RR-P2 | Plan for sea level rise | Output | New residential development takes into account sea level rise in flood protection planning and development. | New residential development takes into account sea level rise in flood protection planning and development. | <p>Metric:</p> <ul style="list-style-type: none"> Number of proposed actions covered by the Delta Plan policy to require flood protection for residential development in rural areas (RR-P2). <p>Baseline:</p> <ul style="list-style-type: none"> N/A because this measure has a prescribed target and is not showing a change from a baseline. <p>Target:</p> <ul style="list-style-type: none"> 100% of proposed actions to which RR-P2 are applicable meet the requirements of RR-P2. <p>Data Source:</p> <ul style="list-style-type: none"> Council Certification of Consistency. The Council has developed an online certification of consistency form in which the use will provide the necessary detailed findings of consistency. Delta Interesting Actions Log. Council Planning Division utilizes web-based resources and outreach to relevant external personnel to track proposed activities which have the potential to become covered actions. |
| 7.26 | 3, 7 | RR-P1 | FEMA reimbursement for emergency response and recovery | Outcome | Emergency response and recovery costs are eligible for FEMA reimbursement. | <p>Emergency response and recovery costs are eligible for federal reimbursement.</p> <p>Notes: FEMA has terminated its HMP reimbursement MOU. This measure has been expanded to measure all federal emergency response and recovery eligibility.</p> | <p>Metrics:</p> <ul style="list-style-type: none"> Miles of levee active in US Army Corps of Engineers' Rehabilitation and Inspection Program (RIP). National Flood Insurance Program market penetration in the Delta. Ratings of Delta communities participating in the National Flood Insurance Program Community Rating System. <p>Baseline:</p> <ul style="list-style-type: none"> Miles of levee active in RIP, NFIP market penetration, and community ratings at the time of Delta Plan adoption, May 2013 or nearest available date. <p>Target:</p> <ul style="list-style-type: none"> Increasing trend. <p>Data Sources:</p> <ul style="list-style-type: none"> US Army Corps of Engineers' National Levee Database. National Flood Insurance Program Database, county property parcel data. National Flood Insurance Program Flood Insurance Manual. |
| 7.25 | 5 | RR-R5 | Construct bypass & floodway | Output | DWR and the CVFPB construct a bypass and floodway on the San Joaquin River near Paradise Cut. | <p>REMOVED</p> <p>Notes: This project is far from implementation and is currently being tracked through administrative performance measures.</p> | N/A because this measure is being removed. |