

## Ranking of Water Quality Actions by Agricultural, Urban and Ecosystem Sub-teams

Action	Description	Agriculture	Urban	Ecosystem
1	Dilution SJ-Timing	Moderate	High	Moderate
2	Dilution SJ-Acquired water/Willing seller	Moderate	Low	Moderate
3	Dilution SJ-Acquired water/incentives	Low	Low	Low
4	Dilution SJ-Acquired water/conservation	Low	Negative	Low
5	Dilution SJ-Acquired water/wastewater reclamation	Low	Negative	Low
6	Dilution SJ-Acquired water/treat&recycle ag drainage	Low	Low	Low
7	Dilution SJ-groundwater	Moderate	Low	Low
8	Old River Modification	Moderate	Negative	Low
9	Delta Long Term Protection Plan	High	High	Refer to another committee
10	Ag/Increased enforcement of source control of ag drainage	Low	High	Eliminate
11	Ag/Expansion of existing source control for ag drainage	Moderate	High	High
12	Ag/High-quality water	High	Moderate	Low - Moderate
13	Ag/Retirement or fallowing of lands	Moderate	High	High
14	Ag drainage/evaporation ponds	Low	Moderate	Low
15	Ag drainage/treatment in wetlands	Low	Negative	Moderate
16	Ag drainage/treatment by reverse osmosis	Low	Low	Low
17	Detention of urban runoff	Low	Low	Moderate
18	Urban runoff/enforcement of existing source control regs	Moderate	Moderate	Moderate
19	Urban runoff/incentives for source control	High	Moderate	High
20	Urban runoff/better planning	High	Moderate	High
21	Watershed Management Coordination	High	Moderate	High
22	On-site mine drainage remediation	High	High	High
23	Control boat discharges	Low	High	High
24	Wastewater effluent treatment in wetlands	Low	Negative	Moderate
25	Wastewater discharges/credit trd.	High	Moderate	?
26	DBPs/Phased conversion of WTP	High	Low	Low - Moderate
27	POTW discharges/reclamation	Low	Low	Low
28	Drinking water filtration system upgrades	Low	Low	Low
29	Riparian habitat-Sac River	Low	Moderate	Moderate
30	Riparian habitat-SJ River	Low	Moderate	Moderate
31	Toxicity Testing	Low	High	High

### Water Quality Actions

1. Reduce the concentration of pollutants entering the Delta and its tributaries during low flow periods by **altering the timing of agricultural drainage discharge** from the San Joaquin Valley to better match discharges with dilution flows. Priority given to those lands with costly and severe drainage problems.
2. Reduce the concentration of pollutants entering the Delta and its tributaries during low flow periods by acquiring dilution water (50,000 to 100,000 acre-feet) **from willing sellers**. Action primarily targeted at San Joaquin River.
3. Reduce the concentration of pollutants entering the Delta and its tributaries during low flow periods by acquiring dilution water (50,000 to 100,000 acre-feet). Water would be acquired **by providing incentives for more efficient water management of dams, including reservoir re-operation**. Action is primarily targeted at San Joaquin River.
4. Reduce the concentration of pollutants entering the Delta and its tributaries during low flow periods by acquiring dilution water (50,000 to 100,000 acre-feet) through **urban water conservation**. Action is primarily targeted at the San Joaquin River. Conservation might be achieved through use of incentives for implementation of BMPs by more suppliers and water users. Implementation of the action would reduce demand for existing water and may make dilution water available (including transfers), especially on San Joaquin River.
5. Reduce the concentration of pollutants entering the Delta and its tributaries during low flow periods by acquiring dilution water (50,000 to 100,000 acre-feet) through **wastewater reclamation**. Action is primarily targeted at the San Joaquin River. Reclamation projects could include: recharge groundwater, using for agricultural irrigation, recycling and treating for potable or non-potable urban use, use of grey water, and storage for use in meeting X2 standards. Reclamation programs would focus on facilities that currently discharge treated wastewater to salt sinks or other degraded bodies of water that are not reusable.

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6. Reduce the concentration of pollutants entering the Delta and its tributaries during low flow periods by acquiring additional dilution water through **treatment and recycling of agricultural drainage**. Recycled water would be used for irrigation purposes to reduce export demand where feasible while maintaining appropriate salt leaching requirements. Additional water would be used for dilution especially on the San Joaquin River.
7. Reduce the concentration of pollutants entering the Delta and its tributaries during low flow periods by acquiring additional water through enhanced seasonal recharge and **development of additional groundwater supplies**. Water would be used for dilution, especially on San Joaquin River
8. Improve water circulation in the Delta by **development of improvements at the head of Old River** to block fish movement into Old River and by **management of water flow and stage down Old River**.
9. Reduce vulnerability of Delta water quality to salinity intrusion through **implementation of the Delta Long-Term Protection Plan (including levees O&M)**
10. Reduce surface water concentrations of pesticides, concentrated mineral salts, and microbial agents by increased **enforcement of source control regulations for agricultural drainage**. Action may include; restriction of spraying adjacent to waterways, reduction in runoff volumes, reduction in concentration of pollutants in runoff and reduction in leachate concentrations and volumes.
11. Reduce surface water concentrations of pesticides, concentrated mineral salts, and microbial agents by expansion and extension of existing agricultural source control program. Action may include provision of incentives or other means to modify field drainage systems to reduce drainage volumes, manage irrigation tailwater to reduce pesticide residues, adopting BMPs to reduce rainfall induced discharge of pesticides to watercourses, higher water use efficiency to reduce the amount of agricultural drainage and reduced agrochemical loading, use of Efficient Water Management Practices (EWMPs) or expansion of existing EWMPs by ore suppliers and water users.

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12. Maintaining current irrigation. Avoid increased salt loads by water quality.
13. Reduce surface water concentrations of pesticides, concentrated mineral salts, and microbial agents by provisions of **incentives for retirement or fallowing** of lands (especially during drought). Action targeted at San Joaquin Valley and Delta lands that contribute to drainage problems on the San Joaquin and/or detrimental water quality problems within the Delta. Areas targeted would be those with the most severe drainage problems and where most cost effective. Action would also reduce demand for irrigation water. Under this program CALFED would establish a program to retire, by compensated purchase, marginally-productive (and voluntarily retired by landowners) agricultural lands that have drainage problems and are trace element source areas.
14. Reduce surface water concentrations of pesticides, concentrated mineral salts and microbial agents by **concentration and disposal of agricultural drainage water** through evaporation ponds to control agricultural drainage.
15. Control agricultural drainage by **treating drainage in constructed wetlands**. Treatment will allow some filtration and reduction in biological oxygen demand. Action is primarily targeted at Delta agricultural drainage. Wetlands treatment would be initiated as a pilot program to establish its feasibility and expanded appropriately.
16. Control agricultural drainage by **treating 20 to 30 percent of the drainage** by means such as reverse osmosis and then recycling or augmenting river flows with the treating water.
17. Reduce urban and industrial constituent loadings to the Delta by **detention and strategic release of 20 to 30 percent of runoff water**. Highest priority are areas contributing largest loadings of pollutants of concern.
18. Reduce urban and industrial constituent loadings through **enforcement of existing source control regulations** for urban and industrial runoff. Measures used may include use of real economic penalties.
19. Reduce urban and industrial constituent loadings through **provision <sup>of</sup> incentives for additional source control** of urban and industrial runoff.

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20. Reduce urban and industrial constituent loadings through **better planning of new developments** to reduce urban and industrial runoff.
21. Focus on point and non-point source control and habitat restoration through **coordination and/or development of incentives with ongoing watershed management programs** that promote and protect Delta water quality and fisheries. Geographic focus includes programs both inside and outside the Delta that contribute to or are able to mitigate problems within the Delta. ~~Watershed-management programs should~~
22. Reduce tributary and Delta heavy metals loadings by **implementation of moderate onsite mine drainage remediation measures** developed in site-specific studies at the Walker, Malakoff Diggins, Leviathon, Iron Mountain and Penn mine site and control runoff from these and other high priority mine sites based on current water quality objectives for pollutants. Fund remediation through pollution-credit trading (i.e., reduce loading from mines in-lieu of more costly, but less effective wastewater treatment plant upgrades) or other means.
23. Control **discharges of domestic wastes from boats** within the Delta and its tributaries by more extensive enforcement of existing regulations.
24. Reduce loadings of pollutants to the Delta by **treatment** of a portion of upstream municipal **wastewater effluent in wetlands**.
25. Reduce point source pollution through control of industrial and municipal wastewater treatment discharges in a cost-effective manner. Methods may include encouragement of **pollution credit trading**.
26. Reduce concentrations of disinfection byproduct precursors (DBPs) by provision of **incentives for phased conversion of municipal wastewater treatment facilities** that produce large concentrations of DBPs to processes that do not produce DBPs.

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27. Reduce point source pollution through control of industrial and municipal wastewater treatment discharges. Methods may include **incentives for reclamation and reuse of industrial and municipal water.**
28. Improve source drinking water quality through provision of **incentives for filtration system upgrades** to meet EPA Drinking Water Quality Standards. Prioritize recipients may be targeted using criteria that includes number of service connections and upgrade costs needed to meet Maximum Contaminant Level Goals.
29. **Improve riparian habitat** through restoration of riverine channel features including riparian vegetation **on the Sacramento River (including tributaries)** upstream of the Delta.
30. **Improve riparian habitat** through restoration of riverine channel features in the **San Joaquin River (including tributaries)** upstream of the Delta. Work would include restoration of channel configurations on 25 to 35 miles of degraded San Joaquin River to deepen the channel and improve water temperatures.
31. Identify potential toxicity in water and sediment through **toxicity testing and toxicity identification evaluations** or other appropriate methods.
32. Provide incentives for farmers to increase implementation of integrated pest management.