

# CV-SALTS Stakeholder Identified Issues with Beneficial Uses – Draft Version 3

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## 1. Triennial Review Issues in Regional Board Work plans

### 1.1. Tulare Lake Basin Plan Area

The Tulare Lake Basin Plan area has identified the following issues that relate to changes in or related to Beneficial Uses or Objectives in the triennial review.

#### 1.1.1. Beneficial Use Designations

Where a Regional Board has evidence that a use neither exists nor likely can be feasibly attained; the Regional Board should initiate (or support) appropriate basin plan amendments to consider dedesignating the use. An action is to contact Fresno Office for list of these areas.

#### 1.1.2. Lower Kings River Salinity

The Lower Kings River exceeds water quality objectives for salinity during drought periods. Additional studies are needed to adequately define the salinity problems and (determine appropriate beneficial uses and) develop policies.

#### 1.1.3. Groundwater Quality Objectives for Salinity

The Basin Plan contains sub-basin water quality objectives for incremental salinity increases in groundwater. The Basin Plan objectives should be modified to clarify (1) the intent of the objectives, (2) how the objectives are to be implemented in site-specific requirements, and (3) the means of measuring compliance. This issue may or may not need review of Beneficial Uses.

#### 1.1.4. Tulare Lake Groundwater

Identification of areas within the Tulare Lake Basin where the groundwater is adversely impacted by salts and chemicals to the extent that the groundwater no longer supports all its beneficial uses (and validate those beneficial uses)

#### 1.1.5. Dissolved Oxygen Objectives

The dissolved oxygen objective for Reach III of the Kings River (Pine Flat Dam to Friant-Kern) may not be achievable due to natural conditions. A study should be conducted to (determine the beneficial uses on the reach and if nitrate is a precursor of DO issues then) investigate the conditions and establish more appropriate objectives, if necessary.

### 1.2. Sacramento-San Joaquin Basin Plan Area

The Sacramento-San Joaquin Basin Plan area has identified the following issues that relate to changes in or related to Beneficial Uses or Objectives in the triennial review.

### **1.1.6. Beneficial Use Designations**

See the Description in the Triennial Review Issue 1 in the discussion in Attachment 1.

### **1.1.7. Regulatory Actions in Agricultural Dominated Water Bodies and Agricultural Conveyance Facilities**

See the Description in the Triennial Review Issue 3 in the discussion in Attachment 1.

### **1.1.8. Dissolved Oxygen Problems in the San Joaquin River near Stockton**

Connection between Nitrate and reduced DO have the potential to affect beneficial uses, to the extent that salt and nitrate are significant factors in the DO issue review the Beneficial uses in the area??

See the Description in the Triennial Review Issue 5 in the discussion in Attachment 1.

### **1.1.9. Policies for Maintaining Water Quality for Drinking Water**

Beneficial uses for drinking water should be reviewed to ensure they are appropriate in waterbodies that are included in the policy to be maintained.

See the Description in the Triennial Review Issue 8 in the discussion in Attachment 1.

## **2. East San Joaquin River Area Streams**

In a “typical” year (non severe El Nino), most streams draining the Sierra Nevada mountains never reach the San Joaquin River but instead percolate into the groundwater or are used for crop irrigation in fields with riparian rights. Some stream beds are also used to transfer irrigation district water from canals to the stream beds then back into canals for downstream crop irrigation. Such transfers occur over a three or four month period during the Spring/summer and only when mountain runoff supplies are adequate. Each of these conditions needs to be considered when determining beneficial uses. More broadly this may be described as “Drainages or waterways that do not reach “waters of the state” except for extremely wet years or only during limited seasonal periods”.

## **3. Tulare Lake Drainage and Water Storage District Areas**

Tulare Lake interests would like the region considered and reviewed for re or de-designating the region from a MUN beneficial use designation. The reasons for doing so include the following:

1. It is a closed basin with no natural waterways
2. The first waters encountered have very high ECs (some above sea water)
3. The Corcoran clay layer (more than 1,000 feet of dense clay) separates the perched first waters and the next waters, assuming you can find some.
4. The perched saline waters create farming problems and therefore drives irrigation very high efficiencies.
5. The Tulare Lake Drainage District is collecting and disposing of the subsurface saline waters. The disposal of the salts, approximately 150,000 tons of salt each year, is cleaning up soils/water.
6. There are no urban wells or usable groundwater within the District.

#### **4. MUN designation where no MUN uses exist or would be allowed**

Some water bodies (surface and groundwater) are currently designated to have an MUN Beneficial Use but are prohibited from use as MUN by other regulation or water rights. These waterbodies should be evaluated for redesignation or dedesignation.

#### **5. Waterbody Subcategorization**

Specific waterbodies may need subcategories to appropriately protect the beneficial uses in the most efficient manner. Subcategorization would allow a better fit between use and objective to reduce over or under protection. This has to be balanced with the work and monitoring required to document these categories and attain compliance.

#### **6. Tributary Rule Issues**

Implementation of the policy related to the Tributary Rule is an important concept and the connections between upper and lower watershed are critical to attainment of objectives to maintain beneficial uses. However due to unique issues with hydrology in the San Joaquin and Tulare Lake basins the tributary may be insufficiently protective or over protective. Reviewing beneficial uses to evaluate the appropriateness of the Beneficial Uses afforded by the Tributary rule versus those that may be due to the water body may be needed. Additionally, definitions of hydraulic connections need clarification, especially in surface waters for application of the tributary rule when and how a connection is considered a tributary is important.

#### **7. First Encountered Groundwater**

Issues with first encountered groundwater likely extend beyond beneficial use evaluation but the following are proposed as connections:

1. First encountered groundwater considered appropriate for MUN, whether or not it would meet standards (i.e. – does not meet drinking water standards).
2. Point of application for groundwater (directly under facilities fence line, next well/use, etc).

#### **8. Ag Drains and Canal Issues**

Inland surface waters work in prior years provided some information on the prevalence of Ag Drains and Canals and proposed some methods of working with them to protect beneficial uses without excessive regulation. This approach was not accepted by EPA but should be reassessed in light of the changes in those issues and the opportunities for appropriate beneficial uses to be assigned to the water bodies.

#### **9. Groundwater Specific Use or Area**

Some existing areas do not support groundwater beneficial uses. Historic areas where saline soils and groundwater exist may not be adequately characterized to allow appropriate beneficial uses to be

designated. These should be evaluated and if possible mapped based on occurrence to allow appropriate management for the actual beneficial uses.

## **10. Effluent Dominated Waterbodies**

What beneficial uses apply or should apply to these waterbodies and what requirement or limits are appropriate for designation as an effluent dominated waterbody are appropriate.

## **11. Exceptions for Sources of Drinking Water**

Issues with the application of 88-63 should be reviewed with beneficial uses defined to help with the identification or to inform the following issues:

1. 88-63 actual exceptions
2. Does it apply w/o BPA
3. Broader application – all MUN, not consistent with BPA
4. Tributary Rule

## **12. Interpretation of the Narrative Objectives**

Beneficial uses should also be reviewed to insure that the information needed to better inform the setting of numerical objectives from previous narrative objectives.

## **13. Uniformity Issues**

Work should consider in review of beneficial uses the need for developing uniform treatment of specific factors that will affect the objectives and permit or WDR requirements. An example could be uniform leaching values and development of process so they are consistently applied.

## **14. Outreach Workshop Identified Issues**

The April 2010 workshops revealed that the public perceives that their use of water is impacted by salinity in many areas.

### **10.1. Agricultural irrigation use**

(AGR) was indicated most frequently in both Woodland and Tulare workshops as an impacted use.

### **10.2. Drinking water**

(MUN) was mentioned almost as frequently as an impacted use.

### **10.3. Industrial processing use**

(PRO) was mentioned,

### **10.4. Other use designations**

IND, NAV, POW, REC-1, REC-2, GWR, NAV, POW, REC-1/REC-2, COMM, AQUA, WARM, COLD, BIOL, RARE, MIGR, SPWN, and SHELL—were not mentioned.

## 10.5. Fresh

FRSH, or “uses of water for natural or artificial maintenance of surface water quantity or quality” was not cited specifically, and this use designation is generally used less often than more precise designations such as MUN or AGR, but some comments could be inferred as also being applicable to impacts to FRSH use.

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## 15. Beneficial Use Definitions

**Municipal and Domestic Supply (MUN)** - Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.

**Agricultural Supply (AGR)** - Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation (including leaching of salts), stock watering, or support of vegetation for range grazing.

**Industrial Service Supply (IND)** - Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization.

**Industrial Process Supply (PRO)** - Uses of water for industrial activities that depend primarily on water quality.

**Ground Water Recharge (GWR)** - Uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.

**Freshwater Replenishment (FRSH)** - Uses of water for natural or artificial maintenance of surface water quantity or quality.

**Navigation (NAV)** - Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.

**Hydropower Generation (POW)** - Uses of water for hydropower generation.

**Water Contact Recreation (REC-1)** - Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.

**Non-contact Water Recreation (REC-2)** - Uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing or aesthetic enjoyment in conjunction with the above activities.

**Commercial and Sport Fishing (COMM)** - Uses of water for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.

**Aquaculture (AQUA)** - Uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.

**Warm Freshwater Habitat (WARM)** - Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

**Cold Freshwater Habitat (COLD)** - Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

**Estuarine Habitat (EST)** - Uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).

**Wildlife Habitat (WILD)** - Uses of water that support terrestrial or wetland ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

#### **Preservation of Biological Habitats of Special**

**Significance (BIOL)** - Uses of water that support designated areas or habitats, such as established refuges, parks, sanctuaries, ecological reserves, or Areas of Special Biological Significance (ASBS), where the preservation or enhancement of natural resources requires special protection.

#### **Rare, Threatened, or Endangered Species**

**(RARE)** - Uses of water that support aquatic habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened or endangered.

**Migration of Aquatic Organisms (MIGR)** – Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish.

**Spawning, Reproduction, and/or Early Development (SPWN)** - Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.

**Shellfish Harvesting (SHELL)** - Uses of water that support habitats suitable for the collection of filterfeeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sports purposes.

*Definitions from the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, 4<sup>th</sup> ed.*

# Attachment 1

## Sacramento-San Joaquin 2005 Triennial

Review

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### Issue 1: Beneficial Use Designations

Discussion: The Basin Plan designates beneficial uses to surface waters in three different ways: (1) Table II-1 lists existing and potential beneficial uses that apply to surface waters of the basins; (2) The beneficial uses of any specifically listed water body generally apply to its tributary streams; and (3) The Basin Plan implements State Water Board Resolution 88-63 (“Sources of Drinking Water Policy”) by assigning municipal and domestic supply uses (MUN) to all unlisted water bodies.

The Basin Plan states that all ground waters in the Region is suitable or potentially suitable for municipal and domestic water supply (MUN), agricultural supply (AGR), industrial service supply (IND), and industrial process supply (PRO).

Dischargers to both effluent and agricultural dominated water bodies question the appropriateness of the designated beneficial uses. Adjustments to designated beneficial uses for surface and ground waters can only be made through the Basin Plan amendment process. Because all the water bodies in the region have designated beneficial uses, changes to beneficial uses that result in less stringent criteria must be supported by a use attainability analysis as described in 40 CFR 131.10(g). Further discussion regarding issues specific to effluent or agricultural dominated water bodies is contained in Issues No. 2 and 3.

The State Water Board determined in Order No. 2002-0015, “... where a Regional Board has evidence that a use neither exists nor likely can be feasibly attained, the Regional Board must expeditiously initiate appropriate basin plan amendments to consider ddesignating the use. Moreover, the Regional Board can require dischargers to the affected waterbody to provide assistance, through data collection, water quality-related investigations, or other appropriate means, to support and expedite the basin plan amendment process.”

Current Action: Planning staff is currently working on an assessment of certain beneficial uses in Alamo Creek, Ulatis Creek and Cache Slough, which is tributary to the Delta. Staff is also providing support for two relevant amendments which have been adopted by the Central Valley Water Board and are undergoing approval by the State Water Board, Office of Administrative Law and/or the US Environmental Protection Agency: the de-designation of four beneficial uses of Old Alamo Creek and the ddesignating of certain aquatic life uses for West Squaw Creek, tributary to Shasta Lake.

Current Resources: Stakeholders have funded staff to work on the Alamo Creek watershed and West Squaw Creek.

Additional Action: Because of the large number and size of the unlisted water bodies, developing a logical system of grouping some of the waterbodies and assigning beneficial uses to the groups would involve the most efficient use of resources. Staff would assemble and work with a stakeholder group to define the issues associated with any general classification system and to determine the best and most efficient approach to the assignment of beneficial uses. One possible conclusion of additional studies would be that categorizing the waterbodies will be technically infeasible and beneficial uses will need to be addressed on a site-specific basis.

### **Issue 3: Regulatory Actions in Agricultural Dominated Water Bodies and Agricultural Conveyance Facilities**

Discussion: In agricultural environments, a complex network of modified natural and constructed channels convey irrigation supplies to farms and export agricultural drainage water to natural streams. Many of these waterways lack habitat and physical flow characteristics to sustain the full range of aquatic life and other beneficial uses. Based on information that the Central Valley Water Board staff collected in 1992, it is estimated that more than 130 natural water bodies, totaling more than 1100 miles, are dominated by agricultural drainage and supply water in the Sacramento and San Joaquin River Basins. There are more than 4100 water bodies, totaling over 9300 miles, which are constructed facilities designed to carry agricultural drainage and supply water. There are more than 75 water bodies, totaling almost 600 miles that are natural dry washes that have been altered to carry agricultural supply or drainage water.

Some of these water bodies were deliberately modified for the purpose of providing support to the agricultural industry. Stakeholders have commented that fully protecting the designated beneficial uses would result in loss of the agricultural functionality of the water body. Therefore, stakeholders have requested that the Central Valley Water Board develop plans and policies that recognize that the functionality of the modified water body should take precedence over any perceived beneficial uses. Table II-I of the Basin Plan lists surface water bodies and beneficial uses that are designated for those water bodies. The Basin Plan states that the beneficial uses of any specifically identified water body generally apply to its tributary streams. Many of the agricultural dominated water bodies have designated beneficial uses through application of this tributary statement. Adjustments to these beneficial uses can only be made through the Basin Plan amendment process that would need to include all the considerations that are specified in Porter-Cologne and be consistent with requirements of the Clean Water Act. Issue List and Workplan -10- 2005 Triennial Review

Current Action: Certain water bodies are both effluent dominated and agriculturally dominated. Issues that are identified as part of the work on Effluent Dominated Water Bodies (EDWs) that relate to Agricultural Dominated Water Bodies will be addressed as part of the EDWs effort. See Issue No. 2 for more details on the status of EDWs. In addition, beneficial use adjustments were identified as a separate issue (see Issue No. 1 for more details regarding beneficial uses).

- o A policy to identify which water bodies are agricultural dominated water bodies and, if needed, further subcategorization of these types of water bodies;
- o Beneficial use adjustments through Use Attainability Analyses (UAAs); and
- o Site-specific objectives or basin-wide objectives applicable to this special situation.

Each of these evaluations may require separate studies for each water body.

## **Issue 5: Dissolved Oxygen Problems in San Joaquin River near Stockton**

Discussion: Low dissolved oxygen concentrations in the San Joaquin River in the vicinity of Stockton annually impact or threaten to impact beneficial uses. Basin Plan water quality objectives are frequently violated during high temperature periods in late summer and early fall. Adult San Joaquin River fall run Chinook salmon migrate up river between September and December to spawn in the Merced, Tuolumne, and Stanislaus Rivers. The San Joaquin River population has experienced severe declines and is considered a species of concern by the US Fish and Wildlife Service. Low dissolved oxygen in the San Joaquin River can act as a barrier to migration. Low dissolved oxygen levels can kill or stress salmon and other species present in this portion of the Delta. The San Joaquin River is on the Clean Water Act Section 303(d) list of impaired water bodies due to low dissolved oxygen. In addition, this part of the Delta was listed as a Toxic Hot Spot under the Bay Protection and Toxic Cleanup Program and a Cleanup Plan was adopted to address this issue.

An amendment regarding the dissolved oxygen in this part of the Delta has been adopted by the Central Valley Water Board and approved by the State Water Board. The amendment presents a phased approach to address this issue.

Current Action: The Central Valley Water Board will be reviewing the allocation and prohibitions in the recently adopted amendment by December 2009 as more information is developed. Staff will also be addressing the low dissolved oxygen impairment in Old River and Middle River (from the San Joaquin River to the Delta-Mendota canal).

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## Issue 8: Policies for Maintaining Water Quality for Drinking Water

Discussion: The Sacramento/San Joaquin Delta is the source of drinking water for two thirds of the state's population (over 23 million people). In addition, the Sacramento and San Joaquin rivers, the two principal rivers discharging to the Delta, and their tributaries, are sources of drinking water for many Central Valley communities. The Sacramento and San Joaquin rivers receive pollutants from various activities in the Central Valley including agriculture, mining, confined animal facilities, and urban runoff and municipal and domestic wastewater. These pollutants include pesticides, trace elements, metals, nutrients, and pathogens. The Delta and segments of the Sacramento and the San Joaquin rivers are listed in the Clean Water Act Section 303(d) list due to impairment of beneficial uses by many of these pollutants. Due to increased intensity of development and coincident population growth, the demand for high quality drinking water will increase. Additionally, development within the watershed may increase the pollutant loads into these waters posing a greater threat to drinking water supplies.

State Water Board Resolution No. 88-63 (Sources of Drinking Water Policy), which is incorporated into the Basin Plan, recognizes municipal and domestic water supply (MUN) beneficial uses in all surface waters with a few limited exceptions. Maximum contaminant levels (MCLs) to protect drinking water supplies are contained in Title 22 of the California Code of Regulations and have been incorporated by reference into the Basin Plan for the protection of waters designated MUN. There are MCLs for some of the drinking water constituents of concern such as arsenic, salinity, nitrates, some pesticides, volatile organics, disinfection byproducts (trihalomethanes) and radiological constituents. However, there are no MCLs for other drinking water constituents of concern such as precursors to disinfection by-products (organic carbon and bromide).

In response to directives in the 1996 Reauthorization of the federal Safe Drinking Water Act, the USEPA has been developing more stringent regulations with respect to controlling and reducing levels of disinfection by-products (DBPs) and pathogens.

High levels of organic carbon in source waters makes control of trihalomethanes and haloacetic acid compounds difficult if chlorine is the disinfectant and high levels of bromide in source waters makes control of bromate difficult if ozone is the disinfectant. The recent rules requiring reductions in DBPs and increased removal of pathogens are particularly challenging for water systems with source waters high in organic carbon and bromide.

The Sacramento River generally has low concentrations of organic carbon (generally around 2 mg/L); however, the San Joaquin River and the Delta have higher concentrations. In addition to the two major rivers, Delta agricultural drainage and the smaller rivers that flow into the Delta are sources of organic carbon. As urban areas develop within the Delta, there is increasing concern that urban runoff and wastewater will contribute organic carbon to Delta waters. The tidal exchange between the Delta and San Francisco Bay brings bromide into the Delta. Median Delta bromide concentrations are more than 6 times the national median. The combination of organic carbon and bromide make it difficult and expensive for Delta water purveyors to meet the current and anticipated regulations. Drinking water purveyors are also concerned over taste and odor problems from algae associated with high nutrient levels. There are also concerns over the presence of algal species that are known to produce algal toxins.

In addition to pathogens and DBP precursors, concerns have also been expressed with salinity. See Issue No. 10 for more details regarding development of a salt management policy.

The promulgation of drinking water regulations raises concerns regarding water constituents not previously regulated by the Central Valley Water Board. In addition, the CALFED Record of Decision (ROD) adopted targets of 3 mg/L TOC and 50 ug/L bromide at Delta pumping plants or an equivalent

level of public health protection. The ROD obligates the Central Valley Water Board, with support from the CALFED agencies and the Department of Health Services (DHS), to develop and adopt a policy to protect sources of drinking water in the Central Valley. The technical studies needed to support the policy include identification of key sources of drinking water contaminants and an evaluation of the feasibility and cost of controlling contaminants at the source rather than removing them at water treatment plants. The policy will include identification and implementation of appropriate pollutant source control measures, focused regulatory and/or incentive programs targeting pollutants of concern, and development of a monitoring and assessment program. Any policy developed would need to be adopted into the Basin Plan and would require approval of the State Water Board, OAL, and USEPA.

Current Action: Central Valley Water Board Staff are working with CUWA, CALFED, the Department of Water Resources (DWR) and other interested stakeholders to develop a monitoring program to support the development of a drinking water policy. CUWA has successfully applied for a grant from the State Water Board to assist in this work.

Current Resources: Stakeholders have funded staff to develop a drinking water policy. Stakeholders have also successfully applied for a grant to provide funds for technical studies to support policy development.

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