

## The Salinity Challenge in the Central Valley

There are high levels of salt in portions of the Central Valley. Increasing levels of salts can reduce crop production, impair water quality, and reduce water supply and ecological functions. Salt concentrations in the groundwater are naturally high in some areas and increasing in many others. Current salinity management activities address about 15% of the annual salt load; long-term solutions are needed to address the remaining 85%.

The high levels come from: (1) the geology (2) the arid climate, and (3) intensive water use. All water use, including agricultural, industrial, and municipal increases salinity. Even using water more effectively or recycling water increases salinity. Increased salinity occurs because salt is either added or concentrated through the processes employed to use water or treat wastewater. In addition, dams have reduced the natural flushing of salt, and imported water supplies from the Delta have increased the amount of salt brought into the southern Central Valley. In the San Joaquin Valley alone, six million tons of salt accumulate every year. The recent drought increased the use of groundwater which can have higher concentrations of salt. To learn more: [Salt and Salinity Management, a Resource Management Strategy of the California Water Plan, DWR, June 2016](#)

## CV-SALTS Salinity Management Strategy

The [Central Valley Salinity Alternatives for Long-Term Sustainability](#) (CV-SALTS) was formed more than a decade ago as a collaborative management program to develop sustainable salt and nitrate management practices for the Central Valley. Working directly with the Central Valley Regional Water Quality Control Board (Regional Board), the CV-SALTS initiative released a technical plan – *Salt and Nitrate Management Plan* (SNMP) – in January 2017. The SNMP recommends modifications to regulations for nitrates and the establishment of a **Salt Control Program** with short- and long-term strategies for salinity management. On May 31, 2018, the Regional Water Quality Control Board approved the CV-SALTS SNMP based Basin Plan amendment establishing a **Salt Control Program**.

The goals of the salinity management strategy outlined in the SNMP are to (1) ensure safe drinking water supply; (2) achieve balanced salt and nitrate loadings where reasonable and feasible; and (3) implement a managed aquifer restoration program to restore groundwater quality, where reasonable and feasible.

The SNMP salinity management strategy recommends implementing a phased process to develop a long-term salinity management plan, while at the same time establishing an **Interim Permitting Approach** for salinity discharges. This two-fold strategy is intended to: (1) control the rate of soil and water degradation from salinity; (2) achieve long-term sustainability by bringing salt into balance where feasible, practicable, and reasonable; and (3) protect beneficial uses by meeting applicable water quality objectives and applying appropriate antidegradation requirements.

## Salt Control Program for the Central Valley

### Short-Term Salinity Management

During the development of the long-term plan for salt management, an **Interim Permitting Approach** will be used. This approach may include actions such as: (1) continued implementation of existing pollution prevention, watershed, and salt reduction plans; (2) continued maintenance of current salinity discharge levels; (3) enforced compliance with Interim Permit Limits; (4) implementation of new salinity management practices and source control activities; (5) monitoring of salinity discharge activities where required; and permittees may be required to (6) participation in the Prioritization and Optimization Study.

# Overview of CV-SALTS Prioritization and Optimization Study

From the Central Valley Salinity Coalition, September 2018

## Long-Term Salinity Management Planning

A *Strategic Salt Accumulation Land and Transportation Study* (SSALTS) was undertaken previously to identify and evaluate salt management strategies. Using the SSALTS findings as a foundation, the **Prioritization and Optimization Study** (P&O Study) will expand prior studies, conduct a wide-ranging analysis of existing conditions, policies and engineering alternatives to identify salt management projects and actions to achieve salt sustainability in the Central Valley.

Once the State Water Resource Control Board and Office of Administrative Law approves the **Salt Control Program** in 2019, all permitted dischargers must comply by selecting one of two compliance pathways: (1) conservative or (2) alternative. Dischargers selecting Pathway 1 must demonstrate that they meet conservative permitting requirements established in the **Salt Control Program**. Dischargers selecting Pathway 2 must participate in the regionwide P&O Study with fellow permittees. P&O study participants under Pathway 2 will be allowed to defer more stringent and costly permitting requirements associated with Pathway 1 and reevaluated after completion of the P&O Study. Therefore, participating in Pathway 2 will likely be less costly than the conservative approach in Pathway 1. Further, the P&O study is more likely to achieve the regional goals of long-term sustainability than individual efforts through Pathway 1.

As indicated in the Interim Permitting Approach, the first step to providing a coherent and workable long-term management strategy for salinity is undertaking and completing the P&O Study. The P&O Study will likely begin in 2019 or 2020, take about 10 years to complete and cost from \$10 to \$15 million. If a discharger chooses Pathway 2, compliance includes (but is not limited to) paying a minor annual fee to support the P&O Study. The Central Valley Salinity Coalition (CVSC) will administer the study as the lead entity with oversight from the Regional Board and CV-SALTS stakeholders.

## Long-Term Salinity Management Phasing

The value to everyone in the Central Valley and beyond will be a long-term, integrated **Salt Control Program** that stabilizes and cost-effectively restores water supplies while keeping businesses and communities operating in the interim. The long-term salinity management strategy will be undertaken in three phases:

### **Phase 1:**

- ◇ **Conduct expanded evaluations of existing conditions** by hydrologic region, sources of salinity, and the impact of state and federal policies that affect the management of salt in both surface and groundwaters.
- ◇ **Identify the types of and locations for physical projects.** Physical projects could include regulated brine line(s), salt sinks, regional and/or subregional de-salters, recharge areas, deep well injection, and others. Conceptual designs for preferred physical projects will be developed.
- ◇ **Identify non-physical projects** and begin implementation. These may include changes in water supply, use, and management, as well as changes in salt management policies, practices, or regulations.
- ◇ **Identify governance structure(s) and seek state and federal funding** for preferred physical projects.
- ◇ **Determine if Basin Plan amendments are necessary** to support the implementation of Phases 2 and 3.

**Phase 2:** The engineering design and environmental permitting required to implement the preferred physical projects identified in Phase 1 will be completed. Non-physical projects will continue to be implemented as needed.

**Phase 3:** Construction of physical projects will be completed during this final phase of the Salt Control Program.

## For More Information

Visit [www.salinity.com](http://www.salinity.com)

Read the [SNMP](#)

Read the [Regional Board staff report](#) for the Basin Plan amendments approved May 31, 2018.