# COASTAL COMMISSION STAFF QUESTION: WATER QUALITY INFORMATION FROM THE SAN JOAQUIN CORRIDOR (SR-73)?

Reply:

## Background

In 1993, during the design of SR-73, Caltrans recommended a filter system using a compost medium be considered for the road's runoff management system. California Corridor Constructors, as the toll road's design/build contractor, worked with Stormwater Management Inc. to design and construct a system for the toll road comprised of 39 Compost Stormwater Filters (CSF) along the 15-mile route. The CSF unit was a proprietary system consisting of an open, concrete box divided into several cells that contain compost media.

Caltrans approved the plans for the runoff system during the design review process and accepted the system. During the review process, Caltrans knew the maintenance requirements and costs.

The filters worked exactly the way they were supposed to during construction. In 1996, when the toll road was opened to the public for operation, Caltrans accepted the facility and the filtration system as part of the State Highway System. According to the Cooperative Agreement between TCA and Caltrans, upon acceptance of the toll road into the State Highway System, Caltrans is required to maintain and repair the facility in accordance with all requirements of the State Highway System.

For a variety of reasons, Caltrans determined that it could not cost-effectively maintain the CSF's, including weeding, cleaning of the filters, and replacement of the filter compost. Without the proper maintenance during roadway operation, the CSF's did not function as intended, and the San Diego Regional Water Quality Control Board issued a "cease and desist" order to Caltrans requiring them to immediately begin corrective actions on the compost filters in 2001. In response to the order, Caltrans submitted a project report to water board staff recommending the removal and replacement of the filters.

### Caltrans Storm Water Management and Lessons Learned Since 1996

Since 1996, Caltrans has substantially expanded and improved its storm water systems facilities and management. In 1999, the State Water Resources Control Board issued an NPDES permit to Caltrans for Storm Water Discharges from Caltrans properties, facilities and activities (Order No. 99-06-DWQ). . This NPDES Permit applies to all Caltrans facilities, both during construction and operation. The NPDES Permit requires annual evaluation and reporting.

To implement the statewide NPDES permit, Caltrans has adopted a Storm Water Management Plan (SWMP) that includes treatment control Best Management Practices (BMPs) that meet the mandated Maximum Extent Practicable (MEP) standard to be incorporated into Caltrans facilities. Caltrans also completed a five-year study, at a cost of over $15 million: the BMP Retrofit Pilot Program. This study was completed in conjunction with the U.S. Environmental Protection Agency and environmental groups (Natural Resources Defense Council, Santa Monica Baykeeper and San Diego Baykeeper). This study "is thought to be the most comprehensive test of common stormwater management BMPs ever conducted, and the first significant evaluation in a climate of Southern California's type." (BMP Retrofit Pilot Program, Final Report, 2004 CTSW-RT-01-050, page 1-24).

This report was used as a primary reference in the development of the Caltrans Statewide Water Quality Practice Guidelines, the SWMP and the California State Water Quality Best Management Practices Municipal Handbook.

The Caltrans BMP Retrofit Pilot Program determined the removal efficiency for structural BMPs in the southern California highway environment. The study computed the removal efficiency for structural BMPs at 39 sites in Los Angeles and San Diego Counties. In all, over 13, 400 chemical analyses were performed on paired samples in the study to determine removal efficiencies of the BMPs for a variety of chemical constituents and indicators. The results are reflected in Caltrans determination to approve certain treatment BMPs, including Extended Detention Basins and biofiltration swales, which are BMPs to be included in FTC-S. The Caltrans approved treatment BMPs are considered to be technically and fiscally feasible. Caltrans' has found these BMPs to be constructible, maintainable and effective at removing pollutants to the MEP.

**CONCLUSIONS**

Caltrans has completed extensive studies of BMP effectiveness, cost, maintenance and feasibility, as previously described. Caltrans has been operating under it's NPDES permit for almost 8 years, and has gained additional experience to apply to stormwater treatment in that time. The FTC-S project design features, the extended detention basins, reflect this knowledge and experience.

As described in Section 4.0 of the Runoff Management Plan (RMP), after evaluating Caltrans approved BMPs, it was determined that Extended Detention Basins would be the primary BMP for the SOCTIIP Alternatives, with biofiltration swales and strips also included as feasible. As indicated by Caltrans, these BMPs have been found to be constructible, maintainable and effective at removing pollutants.

Caltrans has also developed extensive maintenance protocols. Caltrans' NPDES permit requires Caltrans to maintain adequate funding to implement an effective stormwater program, including their maintenance program. In addition, TCA has committed, as a project mitigation measure, to monitor Caltrans' maintenance of the BMPs for five years to assure compliance with maintenance criteria and schedules. The TCA will provide annual reports to the San Diego Regional Water Quality Control Board, documenting the maintenance of the BMPs.