

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

STAFF SUMMARY REPORT: Derek Beauduy
MEETING DATE: April 12, 2023

ITEM: 4

California Department of Transportation, Update on Compliance with Cease and Desist Order No. R2-2019-0007, Implementing Trash Requirements

DISCUSSION

This item provides an update on the California Department of Transportation's (Caltrans') compliance with the subject [Cease and Desist Order](#), as [amended](#) (CDO), which the Board first issued to Caltrans in February 2019 to control trash discharges. We updated the Board in December 2022 on Caltrans' compliance with the CDO's June 30, 2022, benchmark of 4,000 acres of significant trash generating areas (STGAs) controlled for trash. In December 2022 we determined that Caltrans had not demonstrated compliance with the June 2022 benchmark. That determination was based on our review of Caltrans' September 30, 2022, Trash Reduction Annual Report (Annual Report) and our field inspections. Caltrans is making progress, but has not yet attained compliance with the June 2022 benchmark. Accordingly, we propose the following steps Caltrans can take to come into compliance and timely achieve future benchmarks:

- Expedite installation of structural trash control devices on- and off-right of way (ROW), including faster and more-extensive implementation of Caltrans' new inlet-based full trash capture device and a significant pilot effort for hydrodynamic separators;
- Continue to provide resources for planning, design, and construction to support the success of off-ROW local partnership projects;
- Conduct studies to substantiate the efficacy of enhanced maintenance measures (EMMs) and other non-structural controls; and
- Either continue to use an existing accepted visual trash assessment methodology used by Bay Area municipalities, or complete work to support Caltrans' proposed alternative "Level of Service" visual trash assessment methodology sufficient to use it to characterize trash levels on Caltrans ROW.

At the December 2022 Board meeting Caltrans agreed to submit a corrective action plan (Plan) that proposes sufficient short- and long-term trash control actions to attain compliance with the June 2022 benchmark and achieve future benchmarks. Caltrans submitted the Plan on March 13, 2023.

Similar to the Annual Report, the Plan claims compliance with the June 2022 benchmark through implementation of EMMs such as trash pickups on over 1,900 acres of ROW. While EMMs have improved trash conditions along many sections of Caltrans ROW, the Plan does not include information sufficient to support the claimed compliance. The [December 2022 Staff Summary Report](#) (December 2022 SSR) describes how our field inspections of areas where EMMs were claimed as compliant found that trash controls were not implemented to a level to

achieve full trash capture equivalency (FTCE) in some areas, because substantial amounts of trash remained on the ROW. The December 2022 SSR also described that Caltrans' visual assessment method used to verify the effectiveness of EMMs to keep an area at a low trash generating level was not yet acceptable. Caltrans needs additional time to perform field evaluation studies to better assess the effectiveness of EMMs, which will take a year to complete to obtain data through next rainy season. We are working with Caltrans to ensure the studies are adequate while accounting for worker safety and other viable concerns and constraints that affect EMMs.

BACKGROUND

Consistent with the requirements of the Caltrans Statewide NPDES Municipal Stormwater Permit ([Order No. 2012-0011-DWQ, as amended](#)) and the [Statewide Trash Amendments](#) to the Water Quality Control Plans for Ocean Waters and for Inland Surface Waters, Enclosed Bays, and Estuaries, Caltrans must control discharges of trash from STGAs of its ROW by no later than 2030. The Board adopted the CDO because Caltrans had not appropriately characterized STGAs within its ROW or proposed an acceptable plan and schedule to timely control trash discharges via full trash capture devices or full trash capture equivalency controls. The CDO established the following enforceable ROW acreage of trash control benchmarks and a schedule for their achievement, as well as planning and reporting requirements sufficient to demonstrate that Caltrans will substantially control trash discharges from the STGAs on its ROW by 2026, and fully control those discharges by 2030.

- 2,000 acres or more by June 30, 2020;
- 4,000 acres or more by June 30, 2022;
- 6,000 acres or more by June 30, 2024;
- 8,800 acres or more by June 30, 2026; and
- All additional significant trash generating areas of ROW identified by visual assessments conducted in 2021, 2025, and 2029 by December 2, 2030.

Trash control is typically accomplished via the implementation of full trash capture devices or via a combination of alternative measures equivalent to full trash capture, such as source controls to prevent the discharge of trash in the first place, and trash removal from streets and highways before it can discharge to the storm drain, such as by street sweeping or maintenance crews.

PLAN IMPROVEMENTS NEEDED

The Plan projects that Caltrans will achieve future benchmarks through implementation of EMMs, roadside vegetation controls, on-ROW structural controls, and off-ROW structural controls installed through cooperative agreements with local municipalities. This includes a projected significant increase in structural control implementation between 2024 and 2026. However, to achieve the 2024 and 2026 benchmarks, Caltrans proposes to use non-structural trash control measures—consisting of EMMs, vegetation controls, and homeless encampment removal—to achieve full trash capture equivalence for about 2,800 and 3,100 acres of ROW, respectively. However, Caltrans has yet to complete actions sufficient to demonstrate the claimed benefits for non-structural measures.

A key action needed to demonstrate the benefit of non-structural measures is an acceptable visual assessment method to evaluate trash levels on Caltrans ROW. The Plan relies on "Level of Service" observations completed by Caltrans maintenance staff, but as we described

in the December 2022 SSR, there are shortcomings with this approach that must be addressed before it can be acceptable. These include the following: correlate level of service observations with the existing “on land visual trash assessment” approach used by Bay Area municipalities; address areas of ROW that are not immediately visible using the level of service approach; pick up (capture) trash particles down to 5 mm; and develop a level of service assessment approach sufficient for its observations to be transparent, consistent, and repeatable.

The Plan indicates Caltrans has planned and funded projects that will achieve nearly 2,700 additional acres of ROW treated by 2024 by Caltrans or local structural trash capture projects. For Caltrans’ proposed compliance path to be successful, Caltrans must either demonstrate the effectiveness of EMMs or alternatively expand on the progress it has made to identify additional locations to install trash capture devices in areas that were previously deemed infeasible for treatment. This includes installing its recently approved trash capture inlet-based housing device and completing a substantial pilot test of hydrodynamic separator (HDS) devices, which are widely used trash capture devices that can capture trash from larger watersheds as compared to inlet-based devices. Accordingly, the Plan indicates Caltrans will reduce dependency on EMMs to meet future benchmarks by deployment of trash capture devices that reduce worker exposure to high-speed traffic.

The Plan projects 100 acres controlled by new inlet-based devices by June 2024 and 200 acres by June 2026. We understand that this is a conservative estimate and we have urged Caltrans to find additional projects and locations to install these devices. That should include evaluating every project in construction and in the planning and development pipeline for trash capture installation and installing the new inlet-based trash capture device where feasible.

In addition, Caltrans District 4 staff has acknowledged support for implementing a pilot project to install multiple HDS devices that could control trash from hundreds of acres of ROW in the Region. The Plan does not include any acres treated by HDS devices due to expressed concerns about potential worker safety and vector control issues. However, Caltrans is currently evaluating locations that are feasible for HDS units and intends to execute a pilot project to install multiple HDS units by the 2026 benchmark.

To demonstrate that trash is appropriately controlled by EMMs and meets FTCE, Caltrans must demonstrate that the EMMs, potentially in combination with other measures are implemented at a level and frequency that exceeds the rate of trash generation in all areas of the associated ROW. EMMs must also be conducted at appropriate times of the year (e.g., prior to and during the rainy season) sufficient to prevent trash discharges from the storm drains, control trash particles 5 mm and greater, and appropriately control the range of trash discharged from the entirety of the ROW, including landscaped roadside areas. The Plan does not acknowledge the known EMM program performance deficiencies, but it includes a field study, which we will work with Caltrans to improve, that could substantiate that a given set of EMM actions could meet the FTCE standard.

The Plan does not sufficiently address the issues with the level of service visual assessment methodology that we described in the December 2022 SSR and Board meeting, and which we have continued to discuss with Caltrans staff. Specifically, the Plan does not demonstrate the level of service methodology is sufficient to determine whether trash control measures implemented consistently achieve FTCE. Appendix C of the Plan describes the level of service

approach of conducting quarterly driving assessments to determine trash generation ratings. However, our Fall 2022 field inspections of more than 1,000 acres of Caltrans ROW found there are areas claimed as non-STGA based on level of service that still had significant levels of trash. The Plan does not demonstrate how the visual assessment, as conducted at highway driving speeds, will identify these substantial amounts of trash, including small trash pieces like cigarette butts, and observe areas beyond the paved ROW where vision is limited (e.g., steep slopes).

Caltrans also projects use of other non-structural trash control measures to meet future CDO benchmarks, including over 1,200 acres of vegetation control credits. While Caltrans' Vegetation Trash Control Pilot Study Report (Report) evaluated the effectiveness of vegetation to control trash, we have not come to agreement on the combination of roadside conditions and maintenance frequency that would achieve FTCE. Our review of the Report raised concerns in accepting vegetation controls as effective trash control measures to achieve FTCE, because the Report did not include the following:

- A robust technical analysis of how factors such as rainfall intensity and vegetation type may impact vegetation's effectiveness to trap trash;
- An acceptable protocol to identify the types of vegetation and drainage pathways that result in effective trash control; and
- A plan to conduct maintenance, over the long term, to remove accumulated trash from the vegetated areas at a frequency sufficient to prevent subsequent discharge of trash to the storm drain or nearby waterbodies.

Homeless encampment removal can result in substantial local reductions in trash discharges, but it has substantial challenges. Caltrans has removed encampments from 500 acres of ROW and is working with local municipalities to ensure removal of these encampments is sustained and that areas cleared are not re-encamped. Caltrans coordinates encampment removal activities with local municipalities to provide services and temporary and transitional housing to residents and offers trash collection services to manage encampments in-place and prevent the discharge of trash to the storm drain system and surface waters.

We will continue to meet regularly with Caltrans staff to monitor trash control implementation progress, identify additional trash control project opportunities, further develop trash control implementation feasibility criteria, and discuss acceptable methods to assess and demonstrate the effectiveness of non-structural trash control measures.