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

STAFF SUMMARY REPORT: Graham Brown
MEETING DATE: August 13, 2025

ITEM: 6

Napa River Sediment Total Maximum Daily Load and Habitat Enhancement Plan Update – Informational Item

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DISCUSSION:

This item provides an update on the Napa River Sediment Total Maximum Daily Load (TMDL) and Habitat Enhancement Plan, adopted by the Board in 2009. This update includes a summary of the TMDL's findings and requirements, efforts to implement the required actions, and a discussion of the most recent monitoring data which is informing development of a new Water Quality Report Card for the Napa River.

Under Section 303(d) of the Clean Water Act, states are required to identify impaired water bodies and the pollutants causing the impairment. To address these issues, regulatory plans known as TMDLs are developed to evaluate water quality conditions, identify pollutant sources, and define allowable pollutant loads and implementation actions. In California, TMDLs are adopted by Regional Water Boards through amendments to water quality control plans. In the San Francisco Bay Region, these amendments are incorporated into Chapter 7 of the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan).

Background - The Napa River and its tributaries have been degraded by excessive deposition of sand and fine gravel, which has impaired spawning and rearing habitat for Chinook salmon and steelhead, contributing to their population declines. Over 50 percent of the sediment delivered to the river is attributed to human activities, including road networks, channel incision, vineyard operations, and intensive historical grazing.

In response, the Water Board developed a sediment TMDL and implemented it through a coordinated program that includes habitat enhancement along 14 miles of the mainstem Napa River and regulatory controls on nonpoint source sediment discharges from unpaved roads, vineyards, and rangelands. The TMDL sets numeric targets for all significant source categories, associated implementation actions, and a monitoring plan and schedule for evaluating progress, with the goal to reduce human-caused sediment inputs by 50 percent by 2029.

Implementation - Napa County, in partnership with local landowners, state and federal agencies, and supported by various grants, including Measure A and Water Board 319(h) funds, has led several major habitat restoration and sediment reduction efforts along the Napa River and its tributaries. These include the 4.5-mile Rutherford Reach and 9-mile Oakville to Oak Knoll restoration projects, which focused on reducing bank

erosion, enhancing riparian and aquatic habitat, and meeting sediment TMDL goals through techniques such as floodplain bench creation, biotechnical bank stabilization, and removal of invasive species. All projects include long-term monitoring and adaptive management, and reflect a collaborative, multi-agency approach to improving the health of the Napa River watershed.

In July 2017, the San Francisco Bay Regional Water Board adopted a General Permit to regulate water quality impacts from vineyard properties in the Napa River and Sonoma Creek watersheds. The permit applies to parcels with five acres or more of vineyard and sets performance standards to control erosion, nutrient runoff, and pesticide discharge. Additional requirements apply to hillside vineyards, including managing stormwater and sediment from unpaved roads. Vineyard owners or operators must enroll in the permit, develop and verify a farm plan, implement practices to meet water quality standards, submit annual reports, and participate in water quality monitoring.

Nearly all required vineyard properties, approximately 1,100, are currently enrolled under the vineyard permit, covering about 37,000 acres of land planted with vines and 77,000 acres of land in total. Across more than 90 percent of this enrolled acreage, performance standards for controlling sediment discharge from vineyards have been met. Many properties have also achieved standards for reducing sediment from unpaved roads and, where applicable, have implemented practices to protect or enhance stream and riparian habitat.

Water Quality Assessment - Streambed permeability, a measure used to estimate how much fine sediment is in the streambed, was monitored during the development of the sediment TMDL in water years 2003 and 2004, and again in 2013 after significant habitat restoration and farm plan implementation had taken place. Between 2004 and 2013, streambed permeability either improved, indicating less fine sediment, or remained similar to 2004 levels.

However, through this monitoring, we found that permeability is a relatively imprecise way to track fine sediment levels. As a result, starting in water year 2022, we began directly measuring the percentage of fine sediment in the streambed instead. Sampling results from 2022 and 2023 show that the amount of sand and fine gravel in the streambed is now approaching target conditions. The next round of streambed monitoring is scheduled for water years 2026 and 2027.