TMDL DIGEST

A Summary of the Franklin Creek Nutrient TMDL

Prelude

What is a Total Maximum Daily Load (TMDL)?

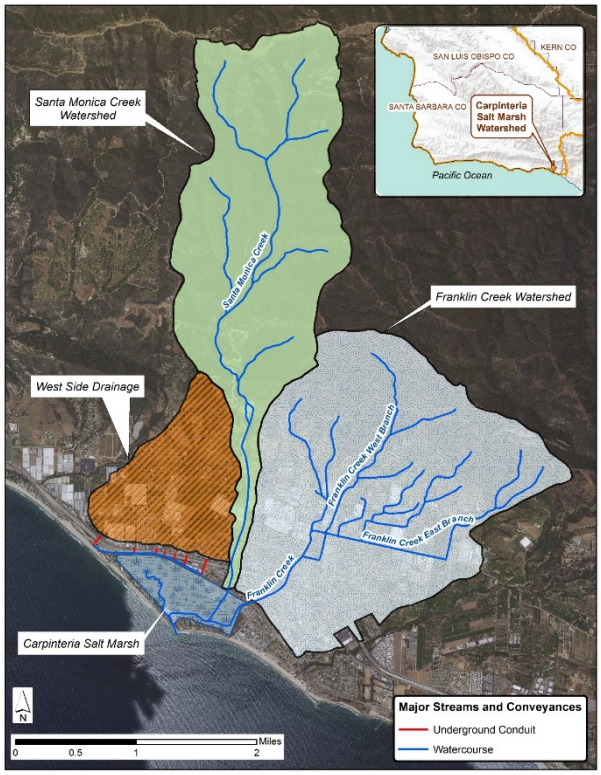
TMDLs are strategies to improve water quality and restore clean water. The federal Clean Water Act requires every state to evaluate its water quality data and maintain a list of waters that are "impaired" because the water does not meet water quality standards. The Clean Water Act further requires states to develop and implement a plan to reduce pollutants so that the waterbody is no longer impaired and can be removed from the impaired waters list.

Total Maximum Daily Load (TMDL) is a term used to describe the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. A TMDL study identifies the probable sources of pollution, establishes the maximum amount of pollution a waterbody can receive and still meet water quality standards, and allocates that amount to all probable contributing sources.

Project Description

Franklin Creek is on the impaired waters list due to excessive levels of nitrate. The TMDL study has established nutrient TMDLs for waters within the Franklin Creek watershed.

It should be noted that the Carpinteria Salt Marsh is also identified on the impaired waters list due to excessive nutrients and organic enrichment/low dissolved oxygen. A future TMDL study will address this impairment.



Project Area

The Franklin Creek watershed (watershed) is the easternmost of three watersheds that drain into the Carpinteria Salt Marsh (see figure). The watershed encompasses an area of approximately 5 square miles in southeastern Santa Barbara County. The upper watershed is primarily National Forest Land (chaparral) and the creek descends through lower lands comprised of orchards (avocado), agriculture (nurseries, greenhouses), and urban areas. Franklin Creek then flows through the Carpinteria Salt Marsh before entering the Pacific Ocean.

Major tributaries to the main channel of Franklin Creek include the Franklin Creek East Branch, Franklin Creek West Branch, and High School Creek.

What are the Sources of Water Quality Problems?

The primary sources of nutrients are fertilizer application, runoff from agricultural lands and urban lands (residential, industrial and commercial), as well as base flow of nitrate impacted groundwater into streams within the Franklin Creek watershed.

The TMDL Process

TMDLs are developed by Central Coast Water Board staff (staff) and must go through an approval process before they can go into effect. The Franklin Creek Nutrient TMDL was approved by the Central Coast Water Board (March 23, 2018), the State Water Resources Control Board (November 6, 2018), and the California Office of Administrative Law (March 4, 2019, which is the effective date). Final approval by the U.S. Environmental Protection Agency is pending.

TMDL Summary

This section provides a condensed summary of the Total Maximum Daily Loads (TMDLs) and implementation plan to reduce nutrient (nitrogen and phosphorus compounds) pollution in Franklin Creek. These TMDLs are effective as of its approval by the California Office of Administrative Law on March 4, 2019.

Impaired[1] Stream: Franklin Creek

TMDL Nutrient Pollutants: Nitrogen and phosphorus compounds (nitrate, total nitrogen, and total phosphorus).

Other Conditions Addressed: Nutrient-response indicators: dissolved oxygen, oxygen saturation, chlorophyll *a*, and microcystins (algal toxins).

TMDL Goals: Reduce nutrient pollution in streams to restore and enhance viable freshwater habitat for fish, wildlife, and invertebrates; and meet water quality objectives for drinking water supply and groundwater recharge.

Sources of Nutrients to the Franklin Creek Watershed:

- Irrigated agricultural lands fertilizer application (nurseries, greenhouses, and croplands).
- Irrigated agricultural lands fertilizer loading to shallow groundwater and groundwater seepage to streams.
- Urban, industrial, and commercial stormwater discharges.

Impairment Causes:

- High nitrate concentrations that exceed water quality objectives to protect municipal and domestic water supply beneficial uses.
- High nitrate concentrations that exceed water quality objectives to protect groundwater recharge beneficial uses.
- High nutrient (nitrogen and phosphorus compounds) concentrations that promote biostimulatory substances that are detrimental aquatic habitat beneficial uses.

TMDLs to Attain Water Quality Standards and Rectify the Impairments: Time schedule to attain water quality standards are based on March 4, 2019 OAL approval date:

In 10 years (by March 2029) or sooner:

- Attain year-round nitrate concentration of no more than 10.0 mg/L as nitrogen

In 15 years (by March 2034) or sooner:

- Attain wet season (Nov 1 – April 30) total nitrogen concentration of no more than 8 mg/L and total phosphorus concentration of no more than 0.3 mg/L

In 25 years (by March 2044) or sooner:

- Attain dry season (May 1 – Oct 31) total nitrogen concentration of 1.1 mg/L and total phosphorus concentration of 0.075 mg/L.

Actions to Correct the Impairments:

- ***Owners/operators of irrigated lands****:* Implement and comply with the Central Coast Water Board's Agricultural Order to minimize nutrient loading to surface and groundwaters from fertilizers and irrigation, and to make incremental progress towards attaining load allocations on or before the time schedules.
- ***Urban, industrial, and construction stormwater entities***: Implement and comply with existing State Water Resources Control Board's General Permits.

[1] Waterbody does not meet water quality standards.