Water Quality Report Card		Pathogens in the Sonoma Creek Watershed		
Regional Water Board:	San Francisco Bay, Region 2		Conditions Improving	
Beneficial Uses Affected:	REC-1, REC-2	STATUS	🗹 Data Inconclusive	
			Improvement Needed	
			□ Targets Achieved/Water Body Delisted	
Implemented Through:	WDR, Sanitary Sewer Overflow,	Pollutant Type:	☑ Point Source ☑ Nonpoint Source □Legacy	
		Pollutant Source:	Municipal Wastewater	Onsite Wastewater
			Treatment Discharges	Treatment Systems
Effective Date:	December 7, 2007		Sanitary sewer lines	Confined animal facilities
Attainment Date:	N/A		Grazing	Urban storm runoff

Exceedance Geomean

%

Water Quality Improvement Strategy

The Sonoma Creek Watershed is in the California Coast Range to the north of San Pablo Bay. The San Francisco Bay Regional Water Board adopted the Sonoma Creek Pathogen TMDL to address pathogen impairments in the watershed. E.coli is closely linked to the presence of human pathogens in freshwater and is commonly used as a bacterial indicator species with a numeric target. The primary sources of pathogens identified in the TMDL include septic systems, sanitary sewer system failures, municipal stormwater runoff, municipal wastewater treatment discharge, livestock grazing, and diaries. Multiple actions have been taken to implement the TMDL including: 1) implementing the statewide Onsite Wastewater Treatment Systems (OWTS) Policy to reduce pathogens from septic systems; 2) implementing statewide Waste Discharge Requirements (WDR) for Sanitary Sewer Systems; 3) incorporating TMDL loads into the small municipal stormwater NPDES permit to regulate urban runoff; 4) adopting the dairy permits in 2015 and 2016; and 5) reissuing the grazing operation permit in the Napa and Sonoma Watersheds in 2017. Future implementation actions include grazing and dairy inspections, approval of the Sonoma County OWTS management plan, and continued monitoring.

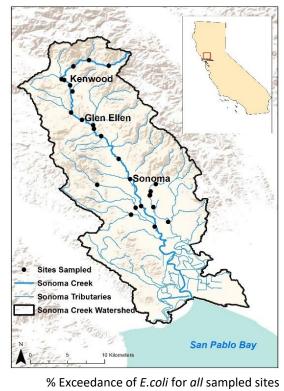
TMDL E. coli Numeric Targets

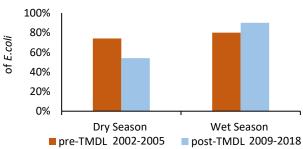
Indicator	TMDL (MPN/100 mL)		
E. coli	Geomean < 126 (MPN/100 mL)		
	90th percentile < 409 (MPN/100 mL)		

Water Quality Outcomes

- Water quality improvements include a 20% decrease in percent exceedance of E. coli geomean during the dry season (April – August) (top graph).
- Exceedance frequency of E.coli geomean increased 10% during the post-TMDL wet season (December March).
- Water quality during the dry and wet seasons is still not meeting the TMDL target for the percent exceedance geomean of E. coli.
- When looking across all single samples, we observed a minor reduction in the mean E. coli concentrations following TMDL adoption in both seasons (bottom graph).

Sonoma Creek Watershed





Mean of E.coli for all sampled sites

