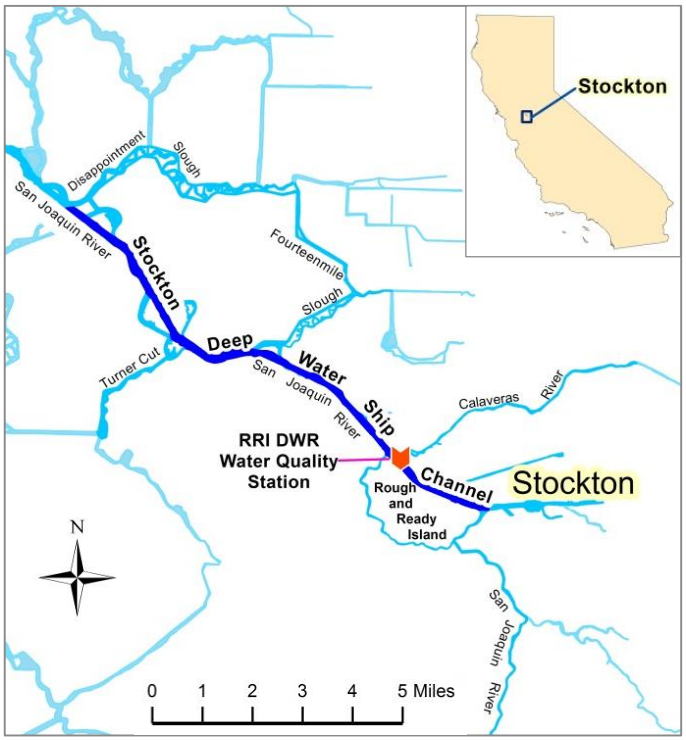
Water Quality Report Card		Dissolved Oxygen in the Stockton Ship Channel
Regional Water Board:	**Central Valley, Region 5**	**STATUS** ☑ Conditions Improving ☐ Data Inconclusive ☐ Improvement Needed ☐ Targets Achieved/Waterbody Delisted
Beneficial Uses Affected:	SPWN, COLD, WARM	
Implemented Through:	401 Certifications, NPDES Permits, MS4 Permits, WDR, ILRP	
Effective Date:	February 27, 2007	
Attainment Date:	2020	**Pollutant Type:** ☑ Point Source ☑ Nonpoint Source ☐ Legacy

Water Quality Improvement Strategy

The Stockton Deep Water Ship Channel (DWSC), a stretch of the tidal San Joaquin River (SJR) from Channel Point to Disappointment Slough, experiences seasonal periods of low dissolved oxygen (DO), and annually exceeds its water quality objectives. In 1998, DWSC was added to the 303(d) list due to low DO. The low DO conditions result from loading of upstream oxygen-demanding substances from point and nonpoint sources, reduced flow through the channel, and increased residence time due to channel geometry. The low DO conditions stress aquatic species, and can delay Chinook salmon migrating upstream on the SJR. To address the impairment, Region 5 adopted the TMDL for Low Dissolved Oxygen in the SJR, which became effective in 2007. Implemented through NPDES permits, 401 Certifications, the Irrigated Lands Regulatory Program (ILRP), and MS4 permits, the TMDL is designed to bring the impaired reach of the DWSC into compliance with DO objectives. The TMDL also required the City of Stockton Regional Wastewater Control Facility (Stockton RWCF) , identified as a primary point source of oxygen-demanding substances, to significantly reduce its ammonia discharges to the SJR (upstream of the DWSC), as ammonia is more toxic in low DO conditions.

Stockton Deep Water Ship Channel

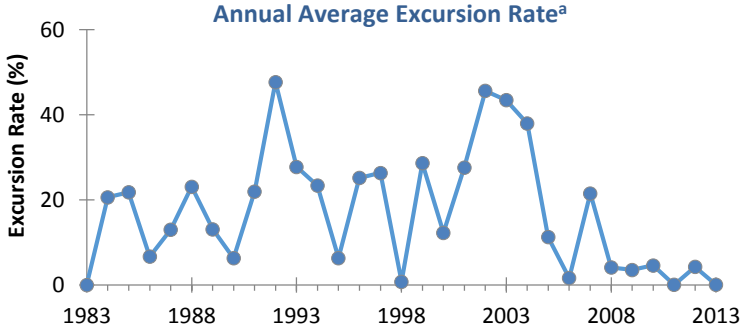


Water Quality Outcomes

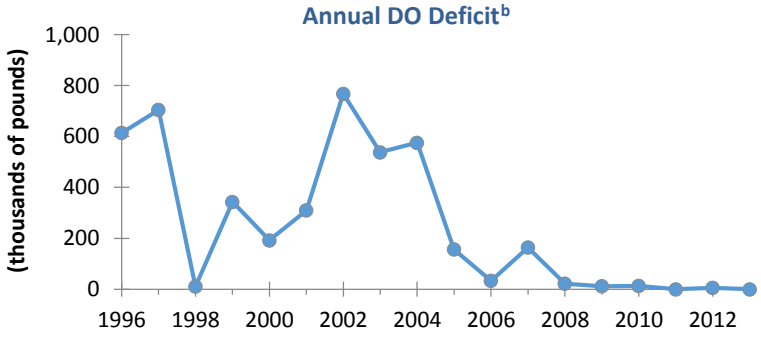
- *Since 2007, water quality monitoring data have demonstrated improved DO conditions in the DWSC. The annual average excursion rate has dropped from historical highs in the 40 percent range to less than 3 percent between 2008 and 2013. There has also been a significant drop in the annual DO deficit.*
- *The Stockton RWCF was upgraded in 2007. The upgrade has significantly reduced its ammonia discharges to the SJR.*
- *An aeration facility has been constructed in the DWSC at the Port of Stockton. A funding agreement between the Port and other vested stakeholders allows aeration to be provided as needed.*
- *Based on current water quality trends and updated regulatory programs, Region 5 staff anticipates attainment of the DO objective (6.0 mg/L from 1 September - through 30 November, and 5.0 mg/L at all other times) by 2020.*

Stockton Deep Water Ship Channel Dissolved Oxygen Conditions, 1983-2013

Annual Average Excursion Rate[a]



Annual DO Deficit[b]



[a] The excursion rate is the number of DO measurements from the monitoring station below the water quality objective, divided by the total number of such measurements recorded that month, shown as a percent. A lower excursion rate indicates fewer exceedances of the DO water quality objective, and improved water quality. The TMDL does not establish a target for annual average excursion rate.

[b] The difference between the actual amount of DO in the waterbody, and the applicable water quality objective. A lower deficit indicates improved water quality. The TMDL does not establish a target for annual DO deficit.

Original report card released September 2012, updated October 2014