Hodges Water Quality and Quagga Mitigation Measures Project

San Diego Integrated Regional Water Management Program - Regional Advisory Committee
October 2, 2019

Goldy Herbon
Senior Water Resources Specialist

Hodges & Olivenhain Reservoir History
Project Need

- Water Quality Challenges
  - High Manganese/Sulfur Concentrations
  - High Organic Carbon Concentrations
  - Low DO
  - Algae (taste/odor)
  - Fish Kills
  - Methyl Mercury
  - Urban Runoff, Ag Runoff and Sewage Spills
- Quagga Mussel Infestation
Project Scope

- Increase coordinated efforts to improve water quality in Hodges Reservoir and Olivenhain Reservoir
- Produce plans to decrease levels of pollutants in Hodges Reservoir
- Evaluate Quagga Mussel Population in Olivenhain Reservoir and attached facilities
## Budget

<table>
<thead>
<tr>
<th>Budget Category</th>
<th>DWR Grant Amount</th>
<th>Match/Other Cost Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Administration</td>
<td>$75,000</td>
<td>$16,000</td>
</tr>
<tr>
<td>Planning/Design/Engineering/Environmental Documentation</td>
<td>$798,000</td>
<td>$284,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$873,000</strong></td>
<td><strong>$300,000</strong></td>
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**Total Project Cost** $1,173,000

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### Overview of Work Completed

- Five Technical Studies
- Three Monitoring Programs
- Enhanced Water Quality Monitoring Equipment
Foundational Studies Completed

Vulnerability Assessment to Quagga Mussel Invasions for Ciboleno, Hodges and San Dieguito Reservoirs and Associated Facilities, Including a List of Viable Control Strategies

Assessment Report
August 12, 2011

Prepared for:
The Metropolitan Water District
Prepared by:
Kendall Steed, P.E.
Turnbull, BWG

Wet Weather Sampling Studies Completed

Hodges Catchment Wet Weather Sampling and Characterization of Nutrient Loads to Hodges Reservoir

Prepared by:
City of San Diego
July 25, 2017

Hodges Catchment 2018 Wet Weather Sampling

Prepared by:
City of San Diego
April 5, 2018
Tributary Stream Sampling

- Hodges Nutrient Identification Study
  - Performed wet-weather sampling at 10 locations across Hodges 248 square mile watershed

- Hodges Nutrient Identification Study
  - 5 of the sampling locations are located along episodic tributary streams, water quality data during flow periods identified as a major data gap
Tributary Stream Sampling

- Left: Before & After Photo of Guejito Creek
- Right: Before & After Photo of Santa Ysabel Creek
Tributary Stream Sampling

- Left: Before & After Photo of Sycamore Creek
- Right: Before & After Photo of Santa Maria Creek

Project Location- Reservoirs
Reservoir Sampling

- Data Collected
  - Reservoir profiles
  - Methylmercury accumulation
  - Nutrient concentrations
  - Sediment-Oxygen demand

Equipment Purchased

- Eureka Data Probe
- Van Dorn Bottles
- Weather Station Equipment
Environmental Documentation

Benefits

- Cross jurisdictional collaboration
- Data sharing
- Improved water quality modelling and validation
- Management actions investigated
- Projects that will improve water quality at Hodges Reservoir
- Protect water treatment infrastructure reliability
Challenges & Lessons Learned

- Project Manager Change
- Reallocation of Funds
  - Staying within scope and identifying new project needs.

Other Studies Completed

FINAL

Task Name: Limnological and Water Quality Analyses and AEM3D Reservoir Modeling – Hodges and Olivenhain Reservoirs (with Addendum)

Prepared For:
San Diego County Water Authority
San Diego, California
March 31, 2020

This is a final draft report.
The final report was submitted on Tuesday, April 1, 2020, and all references are updated on March 31, 2020.
What makes this project the IRWM golden child?

- Storage capacity: 30,633 AF
- Average stormwater impounded: 11,400 AFY

IRWM Based Solutions

Reservoir Solutions

San Diego Zoological Society

Watershed Solutions

San Diego River Valley Conservancy
Thank you