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

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Hodges & Olivenhain Reservoir History

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Project Need

Current Reinforcing Systems Loop

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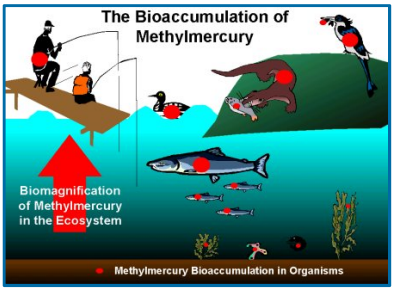
Project Need

- 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



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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

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Budget

Budget Category	DWR Grant Amount	Match/Other Cost Share
Project Administration	$75,000	$16,000
Planning/Design/Engineering/Environmental Documentation	$798,000	$284,000
TOTAL	**$873,000**	**$300,000**
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

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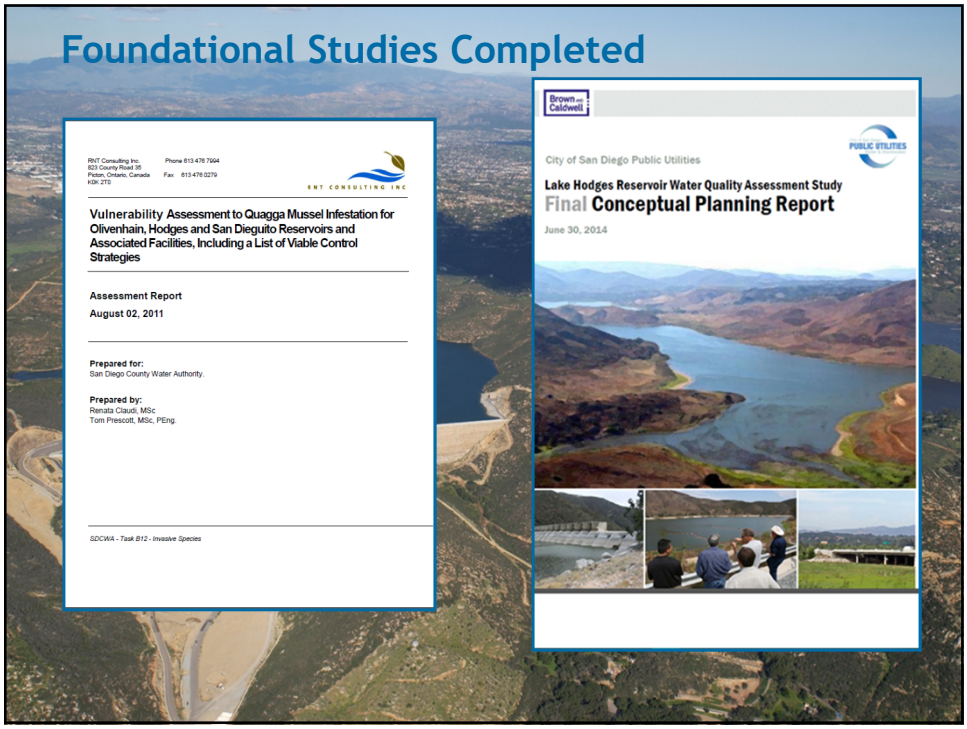
Foundational Studies Completed
RNT Consulting Inc.
823 County Road 36
Picton, Ontario, Canada
K0K 2T0
Phone 613 476 7694
Fax 613 476 0279
RNT CONSULTING INC
Vulnerability Assessment to Quagga Mussel Infestation for Olivenhain, Hodges and San Dieguito Reservoirs and Associated Facilities, Including a List of Viable Control Strategies
Assessment Report
August 02, 2011
Prepared for:
San Diego County Water Authority.
Prepared by:
Renata Claudi, MSc
Tom Prescott, MSc, PEng.
SDCWA - Task B12 - Invasive Species
Brown and Caldwell
City of San Diego Public Utilities
PUBLIC UTILITIES
Lake Hodges Reservoir Water Quality Assessment Study
Final Conceptual Planning Report
June 30, 2014

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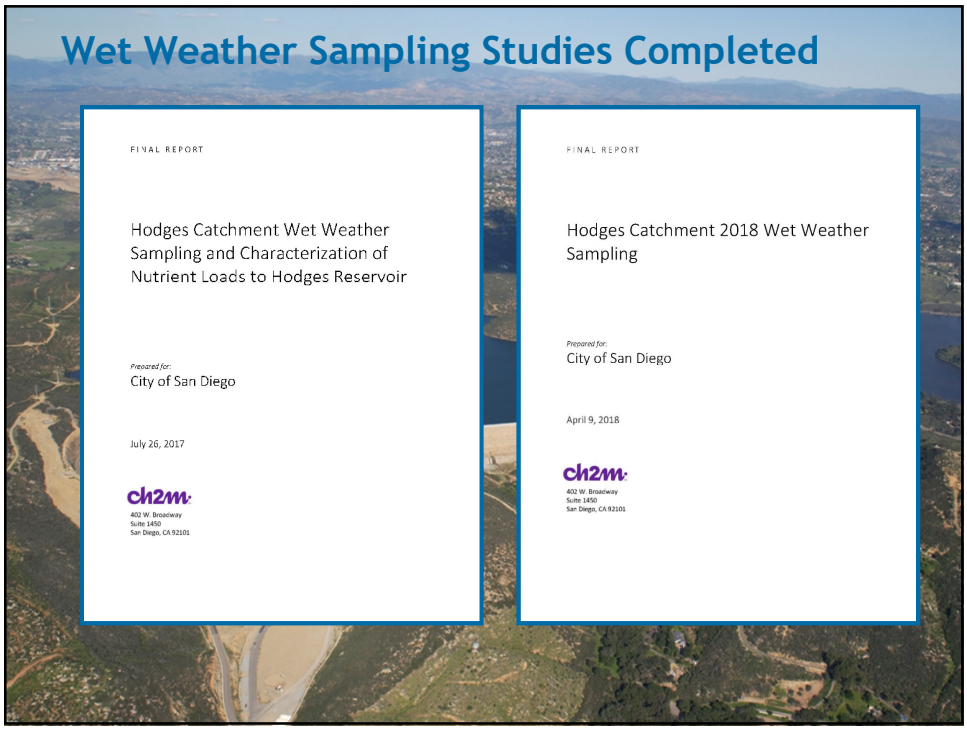
Wet Weather Sampling Studies Completed
FINAL REPORT
Hodges Catchment Wet Weather Sampling and Characterization of Nutrient Loads to Hodges Reservoir
Prepared for:
City of San Diego
July 26, 2017
ch2m
402 W. Broadway
Suite 1450
San Diego, CA 92101
FINAL REPORT
Hodges Catchment 2018 Wet Weather Sampling
Prepared for:
City of San Diego
April 9, 2018
ch2m
402 W. Broadway
Suite 1450
San Diego, CA 92101

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Tributary Stream Sampling

JACOBS

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

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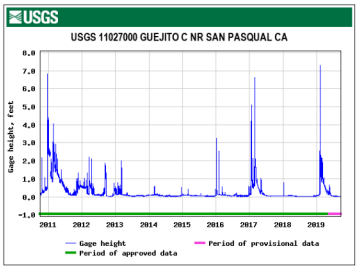
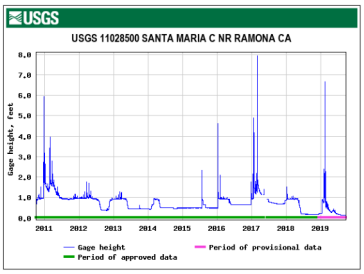
Tributary Stream Sampling

- 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





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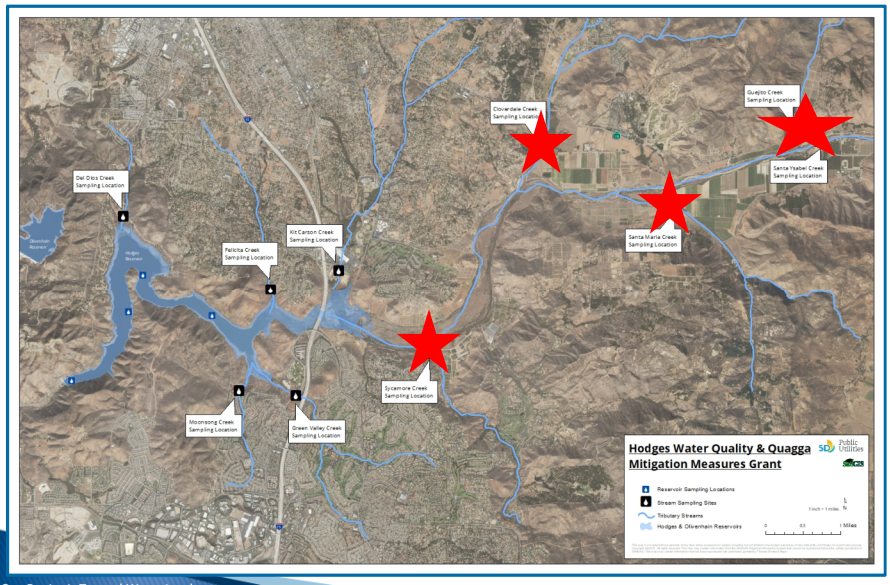
Tributary Stream Sampling



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Tributary Stream Sampling

- Left: Before & After Photo of Guejito Creek

- Right: Before & After Photo of Santa Ysabel Creek

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Tributary Stream Sampling

- Left: Before & After Photo of Sycamore Creek

- Right: Before & After Photo of Santa Maria Creek

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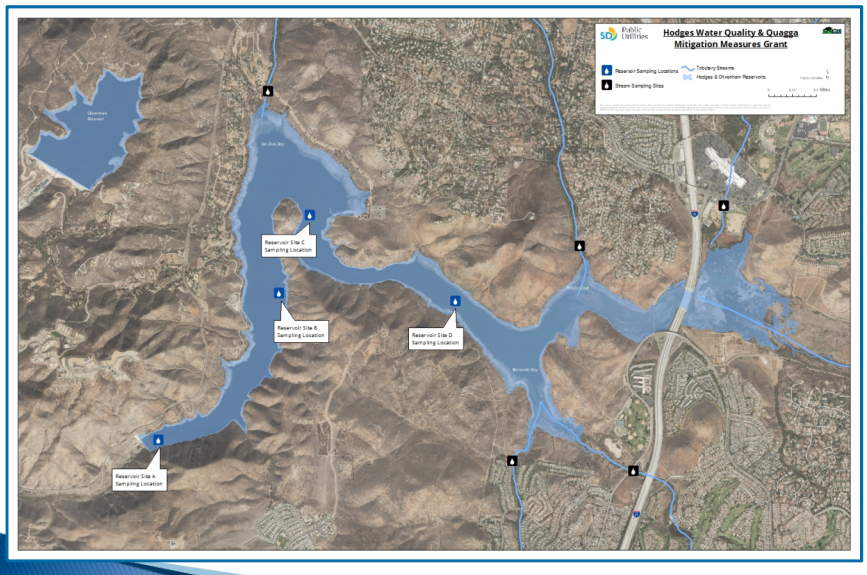
Project Location- Reservoirs



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Reservoir Sampling

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

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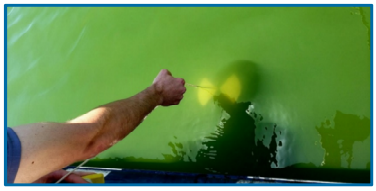

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Equipment Purchased

Eureka Data Probe

Van Dorn Bottles

Weather Station Equipment

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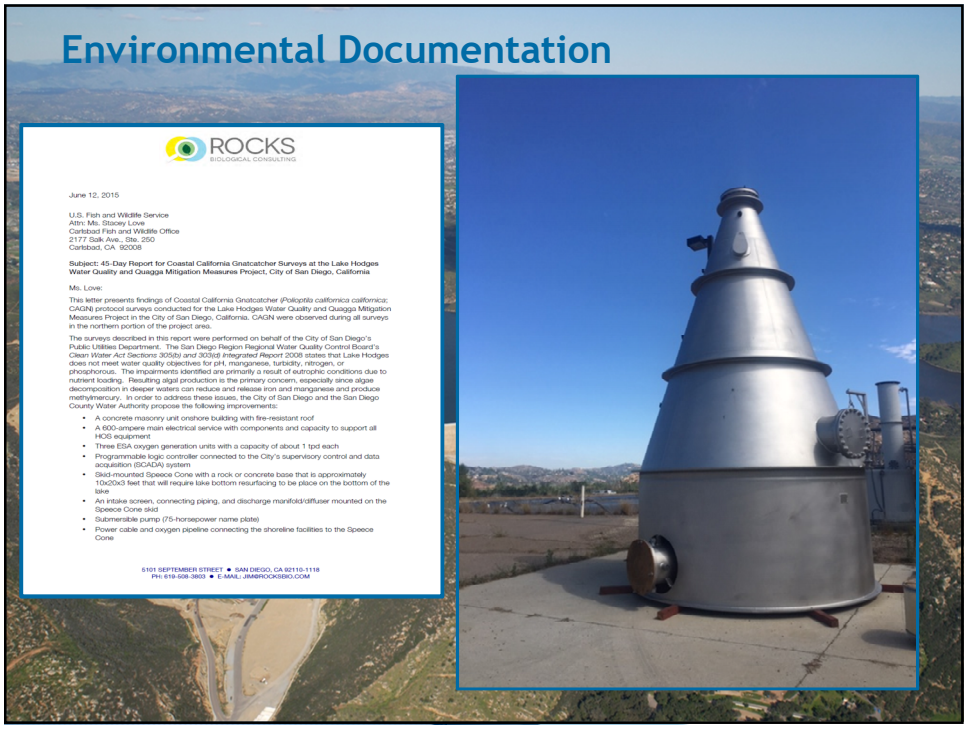
Environmental Documentation



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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

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Challenges & Lessons Learned

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

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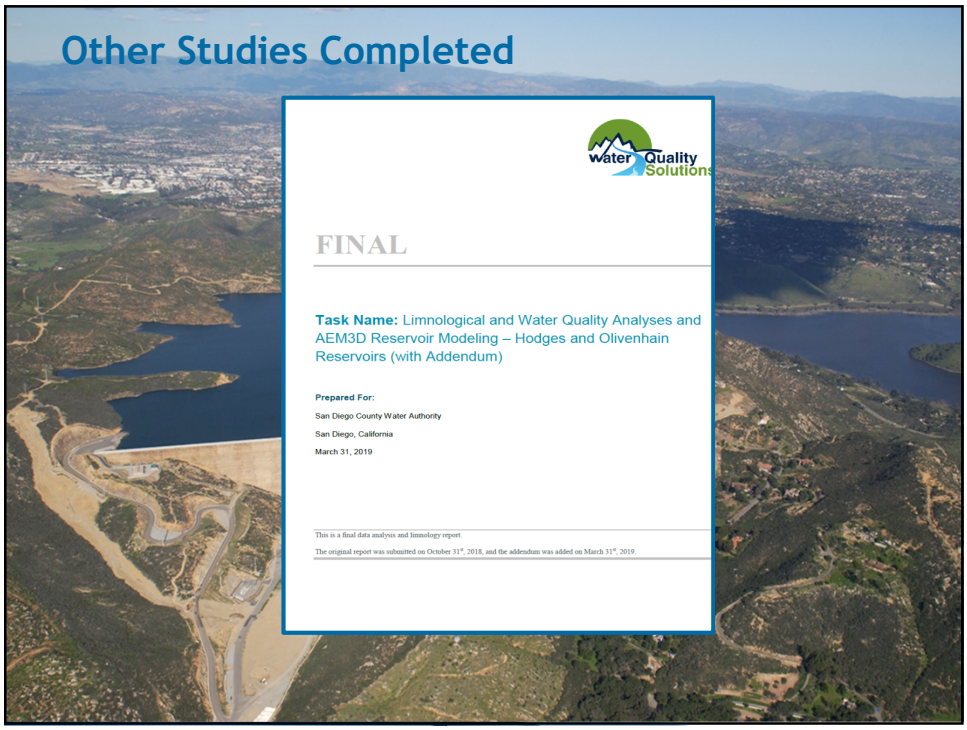
Other Studies Completed



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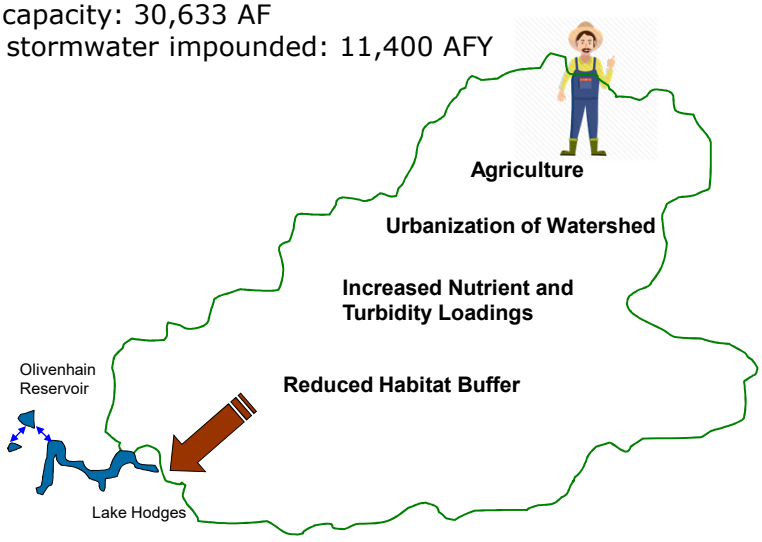
What makes this project the IRWM golden child?

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



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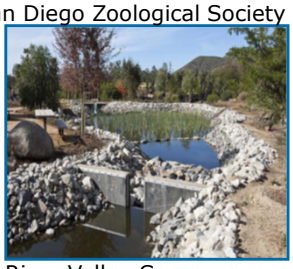
IRWM Based Solutions

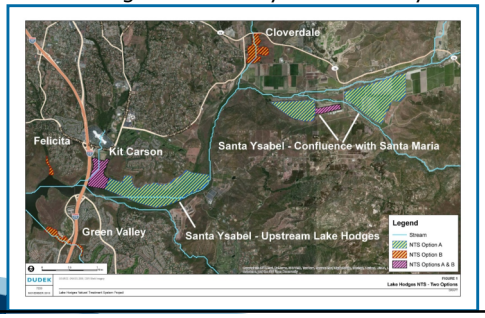
Reservoir Solutions

Watershed Solutions

San Diego Zoological Society



San Diego River Valley Conservancy



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Thank you