



Quality ■ Value ■ Reliability ■ Customer Service
For all of San Diego...every day!



City Council Environment Committee

Operations Optimization for Public Utilities Department

August 5, 2015



PUD Facility and System Overview



Water System

- 3 water treatment plants
- 3,200+ miles of distribution pipeline
- 49 water pump stations/128 pressure zones

Wastewater System

- 3 wastewater treatment plants
- Biosolids processing facility
- 3,000+ miles of collection pipeline
- 8 large and 73 smaller wastewater pump stations



City of San Diego Water System

Miramar WTP



- 144 million gallons per day (MGD)
- Opened 1962
- American Water Works Association's (AWWA) Partnership for Safe Water Program Director's Award (2012-2014) and President's Award in 2013 and 2014

Alvarado WTP



- 200 MGD
- Opened 1950
- Outstanding Projects and Leaders (OPAL) Gala Award in 2013

Otay WTP



- 34 MGD
- Opened in 1914
- AWWA's Partnership Program Director's Award for 6 consecutive years

City of San Diego Wastewater System

North City and South Bay WRPs



- 45 MGD
- Opened in 1997, and SBWRP in 2002
- Platinum and Gold Performance Awards for perfect ocean outfall permit compliance

Point Loma WWTP



- 240 MGD
- Opened in 1963
- Platinum Peak Performance Award for 20th year of perfect ocean outfall permit compliance

Metro Biosolids Center



- 120,000 tons of biosolids processed annually
- Opened in 1998



Combined Facilities Produce 20.8 Megawatts of Power

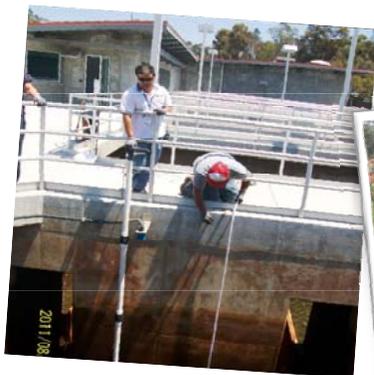
Management for Value

- **Internal Efficiency Studies**
 - ❑ Triggered by strategic and efficiency initiatives
 - ❑ Quarterly performance metrics monitoring
- **Operation Optimization study (OOS)**
 - ❑ Provide extensive experience and knowledge
 - ❑ Comprehensive operational review



Key Project Objectives

- Sustainable solutions:
 - Savings (chemicals, energy and biosolids)
 - Operational efficiency (risk and safety)
 - Business case evaluations
- Building on previous PUD improvement efforts
- Partnership with staff, unions, and SD Works



Overall Approach



CH2M HILL integrates Utility O&M, Management Consulting and Engineering.

Partnering with PUD streamlines efficient delivery and knowledge transfer.

Initial Observations

- Facilities and systems have been effectively operated and maintained
- Staff demonstrates technical and managerial skills
- Meeting or exceeding regulatory compliance
- Engaged in continuous improvement





Evaluation Overview and Results



FOCUS *on Chemicals, Energy and Biosolids*

Evaluation Criteria

- Operational risk and sustainable profile
- Needed investment
- Short term savings (through 5-yr after project completion)
- Long term savings (through year 2035)
- Internal rate of return (IPR)

Opportunity Categories

Category 1

No investment; quick wins

Category 2

Minor investments; O&M budgets

Category 3

Capital improvements; >\$50,000

Examples of Projects and Potential Savings

- ◆ **PT Loma WWTP - Reduce chemical disinfection dosage**
Average annual savings expected \$2,600,000
- ◆ **SDG&E Rate Schedule Changes for Pump Station #2**
Average annual savings expected - \$1,420,000
- ◆ **Rate Schedule Changes for 11 Water Pump Stations**
Average annual saving expected - \$294,000
- ◆ **Alvarado Water Treatment Plant - Coagulation alternative & pH Optimization**
Average annual saving expected \$282,000

Next Steps



Review of facilities and system organization and data utilization process

Complete final report

2015

2016

AUG

SEP

OCT

NOV

DEC

JAN

FEB



Evaluate supply chain/warehousing process



Complete business case evaluations of identified opportunities

QUALITY

We surpass quality and safety standards.



OUR COMMITMENTS

Quality ■ Value ■ Reliability ■ Customer Service
 For all of San Diego...every day!



VALUE

We operate and invest wisely.



CUSTOMER SERVICE

We are responsive, professional and courteous.

RELIABILITY

We consistently provide dependable services.



THE CITY OF SAN DIEGO PUBLIC UTILITIES DEPARTMENT



Quality, Value, Reliability
 – In Every Drop! 

MISSION

To ensure the quality, reliability, and sustainability of water, wastewater, and recycled water services for the benefit of ratepayers and citizens served.

VISION

We are an industry leader in the delivery of water, wastewater, and recycled water services.