CMAA Southern California Water Night

San Diego County Water Authority - Capital Improvement Program

Jerry Reed, Director of Engineering
November 13, 2019
Purpose and Learning Objectives

- Who is the Water Authority and How the CIP is Developed
- Types of Projects in our CIP
- CM Opportunities at the Water Authority
- Ways to Stay in Touch with the Water Authority
San Diego County Water Authority

Wholesale water agency created in 1944

- Serves 3.3 million people and region’s $220 billion economy
- 24 member agencies (retailers)

Provides 80-90% of water used in San Diego County

- large-scale regional water infrastructure
- Invested more than $2.5 billion in the past 20 years
Pipelines - 310 Miles

4 Types of Pipe
- Welded Steel
- Prestressed Concrete Cylinder
- Reinforced Concrete
- Bar-wrapped Concrete

1,358 Line Structures
- Air Valves
- Blowoffs
- Manholes
- Pumpwells
- Vents, bifurcations, etc.

“All line structures are assessed by Asset Management staff every 4 years”
Facilities

96 Service Connections

Olivenhain Reservoir

1 Treatment Plant – 100 million gal./day

2 Hydroelectric Facilities – 44.5 Megawatts

4 Flow Regulatory Structures – 56 million gal.

7 Pump Stations – 81,550 HP
How the CIP is Developed

- Facilities Planning (Water Resources)
  - Projects resulting from detailed alternatives assessments

- Asset Management (Operations & Maintenance)
  - Rehabilitation/replacement projects for existing facilities
CIP Development - Master Plan Update

- FY2020/2021 Scoping Effort
  - Build from Demand Forecast Update in 2020 Urban Water Management Plan

- FY2022/2023 Develop Master Plan Update

- Key Objectives/Focus Areas
  - System Reliability Assessment
  - Regional Conveyance Capacity Optimization
  - Infrastructure Improvements for Operational Efficiency
  - Energy Management Assessment

- Complete Master Plan Update in 2023
  - Add projects to CIP during FY2024/2025 budget build
How the CIP is Developed - Asset Management

- Program development
- Process
  - Prioritization
  - Schedule
  - Budgeting
- Project Review
- Next steps
Process

1. Inspections
   - Plan (5-year rolling)
   - Technology scan
   - Visual

2. Data Analytics
   - Collect
   - Analyze
   - Visualize
   - Prioritize

3. Recommendations
   - CIP Project Packet
   - AM Committee
   - Board Approval
Risk Matrix

- Pipeline Sector

- Condition

- Failure Impact

High Risk
Recommended FYs 2020 & 2021
CIP Appropriation

$162.2 Million

New Facilities $49.7M
ESP $32.2M
Master Planning and Studies $9.9M
Other $4.0M
Asset Management $66.4M
Mission Trails Flow Regulatory Structure II (Winter 2020)
Mission Trails Flow Regulatory Structure II (Winter 2020)
Hauck Mesa Storage Reservoir (Summer 2020)
Flow Control Rehabilitation
Relining Program
1st Aqueduct Rehabilitation

- Pipeline Structures
  - Air Valves
  - Blow Off Valves
  - Pipe thickness
Contracting Opportunities

➢ For contractors and subcontractors:
  • Pipelines
  • Pump Stations
  • Surge Control Facilities
  • Flow Control Facilities

➢ For consultants and subconsultants:
  • Design
  • Construction Management
  • Outreach Support
  • Right-of-Way

➢ For vendors and service providers:
  • Printing
  • Janitorial
  • Supplies
  • Mechanical Maintenance
CM Services Contracts

- Construction Management Support Services
  - As-needed Construction Managers, Resident Engineers, Inspection and Administrative Staff

- As-needed In-plant and Field Inspection Support Services

- Contract RFPs in 2020
Stay in Touch with the Water Authority

sdcwa.org

WaterNewsNetwork.com

facebook.com/SanDiegoCountyWaterAuthority

Instagram.com/sdcwa

@sdcwa

youtube.com/SDCWAvideo

sdcwa.org/WaterSource
Continuing Education Credit

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Contact info:

Jerry Reed - Director of Engineering
SDCWA
jreed@sdcwa.org
858-522-6835
Questions?
Project Background

AWP East County
We’re at the End of a Very Long “Pipeline”

Sources of San Diego County’s Water Supply (2014-2018 five-year average)

- **17%** Local Supply
- **72%** Colorado River
- **11%** State Water Project
Risks of Imported Supply

Drought

Climate Change

Regulatory Restrictions

Scarcity

Future Price Uncertainty
Current System

Ray Stoyer
WRF

El Cajon: 7 mgd
Santee: 4 mgd
County: 3 mgd
Winter Gardens

Eucalyptus Hills
Lakeside

2 mgd
12 mgd
14 mgd
Project Elements

14 mgd

20 miles to Pt. Loma

Purified Water Pipeline

Up to 30% of East San Diego County's drinking water will be created locally!
Project Benefits

**The Clear Solution**

**Creates a New, Local and Reliable Drinking Water Supply.**

**Produces up to 30% of East San Diego County’s water supply.**

**Provides a safe, high-quality drinking water source.**

**Reduces our dependence on imported water.**

**Economizes long-term costs by being competitive with imported water and wastewater treatment.**

**Sustains and safeguards our economy and quality of life by providing a drought-proof and uninterruptible drinking water supply.**

**Protects sensitive ecosystems & helps the environment.**
Structure

- Padre Dam
- Helix

Water Purchase Agreements
- Progressive Design Build Contracts
- O&M & Administrator Contracts (Padre Dam)

Financing Agreements

Wastewater Services Agreements
- County
- El Cajon
- Padre Dam

Project Manager, Legal, Engineering Contracts
Financing

- **IRWM**
  - Prop. 84 Grant
  - $6M

- **SWRCB**
  - Prop. 1 Grant
  - $15M

- **SRF Loan**
  - @ 1.7%
  - $101M

- **USBOR Title XVI**
  - $16.4M Grant
  - Up to 25%

- **US EPA**
  - WIFIA Loan

- **MWD LRP**
  - Up to
  - $475/AF

- **Additional SRF Loan**

- **USBOR**
  - WaterSMART WIIN Loan
Project Opportunities
AWP East County
Procurement Packages

**Package #1**  
Water Recycling Facility/Advanced Water Purification Facility/Solids Handling  
(~$260M)

**Package #2**  
Advanced Water Purification Pipeline/Dechlorination Facility  
(~$30M)

**Package #3**  
East Mission Gorge Force Main/Residuals Bypass System  
(~$20M)

**Package #4**  
Influent Pump Station/East Mission Gorge Pump Station Retrofits  
(~$10M)
New 16 MGD WRF
- Headworks, odor control, primary clarifiers, EQ basin, bioreactors, secondary clarifiers, tertiary filters, and chlorine contact basin
- Visitor’s Center

New Solids Handling
- Thickeners, digesters, dewatering, and considerations for future energy recovery
Package #2 – AWP Pipeline/Dechlorination Facility

New Lake Jennings Inlet

- Rock water feature
- ~49,000 ft of open-cut
- ~2,600 ft of above-grade
- ~2,300 ft of trenchless
- Rock excavation
- Welded Steel Pipe

AWP Pipeline

Dechlorination Facility

Lake Jennings Inlet
New Residuals Bypass System

- Slipline existing 24 inch, ~8,800 ft long pipeline
- New 16-inch, ~3,100 ft long gravity pipeline (open-cut)
- New 12-inch, ~3,500 ft long force main (trenchless) under San Diego River
- New 1.7 MGD lift station
Package #4 – Influent Pump Station/EMG Pump Station Retrofits

**Influent Pump Station**
- Increase capacity from 2 mgd to 6 mgd
- Replace four existing 50-hp pumps with three new 200-hp (estimated) pumps
- Replace existing electrical and mechanical systems

**EMG Pump Station**
- Replace four existing 500-hp pumps with four new 600-hp (estimated) pumps
- Replace existing electrical and mechanical systems
Procurement Schedule
AWP East County
Two Step Progressive Design-Build Procurement

**Step 1**
- Industry Day
- RFQ Issued
- Pre-SOQ Meeting
- RFIs
- SOQs Received
- Possible Interviews

**Shortlist**

**Step 2**
- RFP Issued
- Pre-Proposal Meeting
- Proprietary Meetings
- RFIs
- Proposals Received
- Interviews

**Selection**
## Schedule Overview

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<td>Package 2: AWP Pipeline-Dechlorination (~$30M)</td>
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<td>Package 4: IPS-EMGPS (~$10M)</td>
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- **Package 1:** WRF-AWP-Solids (~$260M)
  - RFQ/RFP
  - Design
  - Const.

- **Package 2:** AWP Pipeline-Dechlorination (~$30M)
  - RFQ/RFP
  - Design
  - Const.

- **Package 3:** EMG FM-Bypass (~$20M)
  - RFQ/RFP
  - Design
  - Const.

- **Package 4:** IPS-EMGPS (~$10M)
  - RFQ/RFP
  - Design
  - Const.
Additional Opportunities
AWP East County
Project Support

Owner’s Representative

- Oversee all packages
- Assist JPA in project management/delivering project
- Be motivated to do great things
- Integrated Team Member

Construction Management

- Minimum 2 contracts
  - Package 1 (&4?)
  - Package 2 & 3
- Constructability Review
- Integrated Team Member
Water Night / Infrastructure

Jim Tomasulo
Director of Engineering

November 13, 2019
This evening:

- background - helix water district
- brief infrastructure review
- capital program review
We treat water for much of east county and distribute it to the 276,000 people in our service area.

**Board**
Daniel H. McMillan, President
Mark Gracyk, Vice President
DeAna R. Verbeke
Kathleen Coates Hedberg
Joel A. Scalzitti

**Employees**
149 / one per 1,800 customers
Our Infrastructure ...
Our infrastructure

<table>
<thead>
<tr>
<th>Our infrastructure</th>
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<tr>
<td>Dams and Lakes</td>
<td>Pump Stations</td>
<td>Treatment Plant</td>
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<td>Valves</td>
<td>Reservoir Tanks</td>
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<tr>
<td>Hydrants</td>
<td>Miles of Pipe</td>
<td>16,901 Valves</td>
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<td>Meters</td>
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<td>56,184 Meters</td>
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2 Dams and Lakes
1 Treatment Plant

25 Pump Stations
25 Reservoir Tanks

733 Miles of Pipe
16,901 Valves

6,498 Hydrants
56,184 Meters
FY 19/20 Capital Program Review
<table>
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<tr>
<th>Description</th>
<th>FY 2018-19</th>
<th>FY 2019-20</th>
<th>Percent Change</th>
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<tr>
<td>Capital Budget FY 2019-20 (PayGo)</td>
<td>$11,093,000</td>
<td>$11,562,000</td>
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<td>Lake Jennings/Maintenance Reserves</td>
<td>$100,000</td>
<td>$300,000</td>
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<td>Land Sale Reserves</td>
<td>$0</td>
<td>$250,000</td>
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<td>Treatment Plant Reserve Fund</td>
<td>$0</td>
<td>$1,605,000</td>
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<td>Carry Forward (HP Replacement)</td>
<td>$169,000</td>
<td>$175,000</td>
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<td>Carry Forward (CIP)</td>
<td>$1,988,000</td>
<td>$1,523,000</td>
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<td><strong>Total FY 2019-20 CIP Budget</strong></td>
<td><strong>$13,350,000</strong></td>
<td><strong>$15,415,000</strong></td>
<td><strong>15.47%</strong></td>
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HWD Capital Improvement Program

Program Summary Fiscal Year 2019-20

- Master Plan Update
- Cast-Iron Pipeline Replacement
- Small Valve Replacements
- Large Valve Repairs
- Tanks Recoating/Rehabilitation
- Pump Station Upgrades
- Treatment Plant Upgrades
HWD Capital Improvement Program

Cast-Iron Replacement Program

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>C. I. Replacement (ft) (Actual)</th>
<th>C. I. Replacement (ft) 10-15k/year (Projected)</th>
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HWD Capital Improvement Program

Project Summary Fiscal Year 2019-20

- Cast-Iron Pipeline Replacement
- Master Plan Update
- Small Valve Replacements
- Large Valve Repairs
- Tanks Recoating/Rehabilitation
- Pump Station Upgrades
- Treatment Plant Upgrades
Thank you!!!
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Coachella Valley Water District (CVWD)

- Founded in 1918

- Field of Services include:
  - Domestic Water
  - Wastewater
  - Recycled Water
  - Irrigation
  - Stormwater Protection
  - Groundwater Management
  - General District
CVWD Service Area

• Service area covers about 1,000 sq. miles.

• Serves a population of about 330,000.

• Over 109,000 active accounts for domestic water, and over 93,000 active accounts for wastewater.
Capital Improvement Projects (CIP)

• CIP budget range from $90 to $110 million

• Strive for 70 to 95 percent execution rate of the CIP budget

• CVWD CIP Portfolio:
  • 21 Projects are in the Planning Phase
  • 51 Projects are in the Design Phase
  • 35 Projects are in the Construction Phase
When/Why CVWD Utilizes Construction Management (CM) Services

• Balance Staff Workload

• Achieve a High CIP Execution Rate

• On Projects with Special Needs:
  • Grant Funded Projects
  • Alternative Delivery Method Projects
  • Projects w/Critical Facilities
  • Projects w/Extensive Community Outreach
Current Projects that are Utilizing CMs

• Highway 86 Pipeline/Booster Pump Station
• Palm Desert Critical Support Services Building
• Booster Pump Station 3501
• Palm Desert Auto Shop Building Expansion
• Talavera Water Main Replacement Phase 2
• Sun City Palm Desert Water Main Replacement Program
Highway 86 Pipeline/Booster Pump Station
Highway 86 Pipeline/Booster Station Project Team

• Engineer of Record: Dahl Engineering

• Contractor: AMES Construction

• Construction Manager: Vanir

• Project Manager: CVWD

• Project Cost: $21.7 million
Highway 86 Project
Construction Highlights

Your water is our promise

COACHELLA VALLEY
WATER DISTRICT
www.cvwd.org
Palm Desert Critical Support Services Building
Palm Desert Critical Support Services Building Project Team

• **Engineer of Record:** Ferguson Pape Baldwin Architects

• **Contractor:** Swinerton Builders

• **Construction Manager:** Vanir

• **Project Manager:** CVWD

• **Project Cost:** $14.3 million
Critical Support Services Building Lab
Critical Support Services Building Emergency Operations Center/Technology Training Center
Booster Pump Station 3501 Project Team

• **Engineer of Record:** Lee & Ro

• **Contractor:** Filanc

• **Construction Manager:** Vanir

• **Project Manager:** CVWD

• **Project Cost:** $4.26 million
Booster Pump Station 3501 Construction Highlights
Booster Pump Station 3501
Construction Highlights
Palm Desert Auto Shop Building Expansion
Palm Desert Auto Shop Building Expansion Project Team

- **Engineer of Record:** J. Milczewsky & Associates
- **Contractor:** Metro Builders
- **Construction Manager:** Vanir
- **Project Manager:** CVWD
- **Project Cost:** $1.9 million
Construction Highlights

March 14, 2019

Tuesday April 30, 2019
Talavera Water Main Replacement Phase 2 Project Team

- **Engineer of Record:** Webb & Associates
- **Contractor:** Downing Construction
- **Construction Manager:** MWH Constructors
- **Project Manager:** CVWD
- **Project Cost:** About $5.0 million
Talavera Water Main Replacement
Construction Highlights
Sun City Palm Desert Water Main Replacement
Phase 1 - Project Overview

- 3,216 LF of 18-inch diameter
- 2,343 LF of 12-inch diameter
- 22,523 LF of 8-inch diameter
- 678 Service Water Lines (Homes)
- 81 Fire Hydrants
Sun City Palm Desert Water Main Replacement Phase 1 Project Team

• Engineer of Record: Webb & Associates

• Contractor: Downing Construction

• Construction Manager: Vanir

• Project Manager: CVWD

• Project Cost: $10.9 million
Phase 1 Construction Plan

Sub-Phase A:
10,256 feet of pipe and 247 homes

Sub-Phase B:
7,991 feet of pipe and 184 homes

Sub-Phase C:
9,835 feet of pipe and 246 homes
Phase 2 of The Water Main Replacement Program
Phase 2 - Project Overview

- 2,000 LF of 18-inch diameter Zinc-Coated DIP w/V-Bio Polywrap
- 1,100 LF of 12-inch diameter Zinc-Coated DIP w/V-Bio Polywrap
- 18,200 LF of 8-inch diameter Zinc-Coated DIP w/V-Bio Polywrap
- 530 - 1-inch water services – Existing meter boxes to be removed and replaced with new meter boxes of the same size.
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