Thank you!
for attending the October 2017 Scholarship Luncheon and Update from Metropolitan Water District hosted by the Society of American Military Engineers, Orange County Post

Please find attached the slides presented by:
Mr. John Arena
Business Outreach Program Manager, MWD
Thank you again to Our **Platinum Sponsor!**
Metropolitan Water District Capital Investment Plan (CIP)

SAME of Orange Co.
October 26, 2017
Metropolitan Water District

- Regional water wholesaler
- 26 Member Agencies
- 6 counties
- Serving approximately 19 million residents
- 5,200 square mile service area
- $1 trillion economy
Metropolitan’s Water Supplies

- Southern California Water Portfolio
  - 45% Local Supplies
    - Los Angeles Aqueduct
    - Conservation
    - Groundwater
    - Recycling
    - Desalination
  - 30% State Water Project (through the Delta)
  - 25% Colorado River
**Metropolitan Conveyance System**

- 242 mile Colorado River Aqueduct (CRA)
- 5 Pumping Plants
- 1.3 MAFY Capacity
5 Treatment Plants – 2,640 MGD
9 Reservoirs – 1,072,000 AF
830 Miles of Pipeline

Metropolitan Distribution System

Joseph Jensen Water Treatment Plant
LOS ANGELES
F.E Weymouth Water Treatment Plant
VENTURA
SAN BERNARDINO
RIVERSIDE
ORANGE
SAN DIEGO

PCCP
Reinf. Conc.
Steel
163 mi
279 mi
378 mi

Other
10 mi

Pacific Ocean
Capital Investment Plan 2011/12 - 2020/21

- Infrastructure
- CRA Reliability
- Treatment Plant Reliability
- Distribution System Reliability
- Right of Way & Infr. Protection
- PCCP Reliability
- System Reliability
- Minor Capital Projects
- Regulatory Compliance
- Cost Efficiency & Productivity
- Water Quality/ORP
- System Flexibility/Supply Reliability
- Regional Recycled Water Demo Plant
FY 2016/17 – 2017/18 CIP Summary

Biennial Budget Process
- Thorough & rigorous review of all projects
- Prioritized to maintain reliability and regulatory compliance
- Continuing focus on Infrastructure Reliability
- Capital project priorities & needs reviewed annually

Procedure
- Solicit project proposals from end-user
- Management screening
- Cross-functional evaluation team scoring
- Prioritization within funding target
- Executive Review
CIP Scoring/Prioritization Criteria

- Justification
  - Delivery Reliability
  - Regulatory Compliance
  - Water Quality, Health & Safety, Environmental
  - Supply Reliability
  - Business Operations

- Project Directives
  - Compliance notices
  - Board actions

- Potential Service Disruption

- Cost efficiency/productivity
CIP Scoring/Prioritization Criteria

Risk Multiplier

- Likelihood of facility/component failure
- Likelihood of water quality, health & safety, or environmental impact
- Likelihood of missed opportunity
- Likelihood of not meeting service demands
FY 2016/17 Capital Investment Plan
Original Budget Estimate = $246 Million

- Treatment Reliability: $64 M
- CRA Reliability: $34 M
- Recycled Water: $3.1 M
- System Flexibility: $1.3 M
- Water Quality/ORP: $29 M
- Cost Efficiency: $7.0 M
- Regulatory: $7.0 M
- Minor Cap: $4.8 M
- Dist. Syst. Reliability: $55 M
- ROWIP: $5.8 M
- PCCP: $14 M
- System Reliability: $22 M
FY 2017/18 Capital Investment Plan
Original Budget Estimate = $240 Million

- Treatment Reliability $35 M
- CRA Reliability $48 M
- Recycled Water $6 M
- System Flexibility $6 M
- Water Quality/ORP $6 M
- Cost Efficiency $5 M
- Minor Capital $4 M
- Regulatory $5 M
- RowIP $7 M
- PCCP $25 M
- System Reliability $42 M
1. CRA Reliability

<table>
<thead>
<tr>
<th>Project Description</th>
<th>FY 2017/18 Estimate</th>
<th>Total Project Estimate (non-escalated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch House Seismic Upgrade</td>
<td>$ 6 million</td>
<td>$ 12 million</td>
</tr>
<tr>
<td>Pumping Plant Sump System Rehab.</td>
<td>$ 5 million</td>
<td>$ 21 million</td>
</tr>
<tr>
<td>Overhead Crane Replacement</td>
<td>$ 5 million</td>
<td>$ 7 million</td>
</tr>
<tr>
<td>Main Pump Power Cables</td>
<td>$ 5 million</td>
<td>$ 12 million</td>
</tr>
<tr>
<td>Total 38 Projects</td>
<td>$ 48 million</td>
<td>$ 360 million</td>
</tr>
</tbody>
</table>
9 pumps per plant
- 8 duty & 1 spare
- 225 cfs pump capacity

Primary Components
- Pump units
- Motors
- Discharge valves

Auxiliary systems
- Lubrication
- Cooling
- Elect. power supply

Total Est. Cost: $100 M
## 2. Treatment Plant Reliability

<table>
<thead>
<tr>
<th>Project Description</th>
<th>FY 2017/18 Estimate</th>
<th>Total Project Estimate (non-escalated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jensen Electrical Upgrades</td>
<td>$ 9 million</td>
<td>$ 73 million</td>
</tr>
<tr>
<td>Diemer Filter Bldg. Upgrades</td>
<td>$ 4 million</td>
<td>$ 45 million</td>
</tr>
<tr>
<td>Diemer Basin Rehabilitation</td>
<td>$ 1 million</td>
<td>$ 58 million</td>
</tr>
<tr>
<td>Weymouth Filter Rehabilitation</td>
<td>$ 3 million</td>
<td>$ 54 million</td>
</tr>
<tr>
<td>Total 24 Projects</td>
<td>$ 36 million</td>
<td>$ 399 million</td>
</tr>
</tbody>
</table>
2. Treatment Plant Reliability

Diemer Filter Valve Replacement

Diemer Basin Rehabilitation
## 3. Distribution System Reliability

<table>
<thead>
<tr>
<th>Project Description</th>
<th>FY 2017/18 Estimate</th>
<th>Total Project Estimate (non-escalated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palos Verdes Reservoir Rehab</td>
<td>$ 8 million</td>
<td>$ 37 million</td>
</tr>
<tr>
<td>Orange County C&amp;D Facility</td>
<td>$ 7 million</td>
<td>$ 11 million</td>
</tr>
<tr>
<td>Sepulveda Canyon Control Facility Improvements</td>
<td>$ 4 million</td>
<td>$ 48 million</td>
</tr>
<tr>
<td>Orange County Feeder Lining Replacement</td>
<td>$ 2 million</td>
<td>$ 34 million</td>
</tr>
<tr>
<td>Total 34 Projects</td>
<td>$ 45 million</td>
<td>$ 428 million</td>
</tr>
</tbody>
</table>
3. Distribution System Reliability

Orange County Feeder Relining

Orange County C&D Facility
3. Distribution System Rehabilitation

Etiwanda Pipeline Relining
4. ROW & Infrastructure Protection

- **Assessment**
  - Access, erosion, security
  - Encroachments
  - Recommend improvements

- **Regional Permitting**
  - Programmatic EIR
  - Resource agency permitting
  - Program-wide mitigation

- **Current status**
  - Design/Environmental
  - Contracts to be advertised late 2015

- **Total Est. Cost:** $63 M
## 4. ROW & Infrastructure Protection

<table>
<thead>
<tr>
<th>Project Description</th>
<th>FY 2017/18 Estimate</th>
<th>Total Project Estimate (non-escalated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange County Region</td>
<td>$ 4 million</td>
<td>$ 19 million</td>
</tr>
<tr>
<td>Western San Bernardino Region</td>
<td>$ 0.5 million</td>
<td>$ 10 million</td>
</tr>
<tr>
<td>Los Angeles Region</td>
<td>$ 1 million</td>
<td>$ 10 million</td>
</tr>
<tr>
<td>Riverside &amp; San Diego Region</td>
<td>$ 1 million</td>
<td>$ 19 million</td>
</tr>
<tr>
<td><strong>Total 8 Projects</strong></td>
<td><strong>$ 7 million</strong></td>
<td><strong>$ 63 million</strong></td>
</tr>
</tbody>
</table>
5. PCCP Reliability

- Identified 5 At-Risk Feeders
- 100 miles rehabilitation
- $2.4 billion est. cost
- 20 year program
- Ongoing Monitoring, Evaluation & Prioritization
- Flexible Implementation
- Urgent Repairs
- Re-sequencing
## 5. PCCP Reliability

<table>
<thead>
<tr>
<th>Project Description</th>
<th>FY 2017/18 Estimate</th>
<th>Total Project Estimate (non-escalated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second Lower Feeder PCCP Rehab</td>
<td>$ 42 million</td>
<td>$ 600 million</td>
</tr>
<tr>
<td>Sepulveda Feeder PCCP Rehab</td>
<td>$ 1 million</td>
<td>$ 738 million</td>
</tr>
<tr>
<td>Calabasas Feeder PCCP Rehab</td>
<td>-</td>
<td>$ 133 million</td>
</tr>
<tr>
<td>Rialto Pipeline PCCP Rehab</td>
<td>-</td>
<td>$ 638 million</td>
</tr>
<tr>
<td>AMP PCCP Rehabilitation</td>
<td>-</td>
<td>$ 305 million</td>
</tr>
<tr>
<td><strong>Total 5 Feeders</strong></td>
<td><strong>$ 45 million</strong></td>
<td><strong>$ 2.4 billion</strong></td>
</tr>
</tbody>
</table>
### 6. System Reliability

<table>
<thead>
<tr>
<th>Project Description</th>
<th>FY 2017/18 Estimate</th>
<th>Total Project Estimate (non-escalated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Union Station Headquarters</td>
<td>$ 14 million</td>
<td>$ 42 million</td>
</tr>
<tr>
<td>Wadsworth Pumping Plant Controls</td>
<td>$ 13 million</td>
<td>$ 26 million</td>
</tr>
<tr>
<td>La Verne Shop Facilities Upgrade</td>
<td>$ 4 million</td>
<td>$ 9 million</td>
</tr>
<tr>
<td>Water Control System (SCADA)</td>
<td>$ 4 million</td>
<td>$ 77 million</td>
</tr>
<tr>
<td>CRA Housing Rehabilitation</td>
<td>$ 5.5 million</td>
<td>$ 10 million</td>
</tr>
<tr>
<td>Total 17 Projects</td>
<td>$ 43 million</td>
<td>$208 million</td>
</tr>
</tbody>
</table>
6. System Reliability

La Verne Shop Facility

Union Station Headquarters
### Project Description

<table>
<thead>
<tr>
<th>Project Description</th>
<th>FY 2017/18 Estimate</th>
<th>Total Project Estimate (non-escalated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greg Ave Pump Station Improvements</td>
<td>$ 5 million</td>
<td>$ 18 million</td>
</tr>
<tr>
<td>AWT Demonstration Project</td>
<td>$ 7 million</td>
<td>$ 14 million</td>
</tr>
</tbody>
</table>
## 13. Other (Not in Current CIP)

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Total Project Estimate (non-escalated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Recycled Water</td>
<td>$ 2.7 billion</td>
</tr>
<tr>
<td>California Water Fix (Bay-Delta)</td>
<td>$ 15 billion</td>
</tr>
</tbody>
</table>
Kick Off of Next Budget Cycle Underway
- Currently soliciting project proposals
- Due by September 1
- Evaluation and scoring completed by December
- Board budget workshops beginning February 2018
- Adoption by June 2018
Additional Information

Website: www.mwdh2o.com

> Doing Business With Us
> Contracting Opportunities

> Who We Are
> Management
> Financial Information
> Current Biennial Budget
Capital Investment Plan
Additional Information

Tom Campbell, P.E.
Interim Capital Program Manager

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