Customer Advisory Committee Meeting 2

AUGUST 28, 2018
PLEDGE OF ALLEGIANCE
MEETING AGENDA

- Public Comment
- Approve Meeting #1 Summary
- Water Demand Forecast
- District Pipeline Asset Inventory Results
- Main Replacement Basics and Benchmarking
- Public Comment
- Preview of CAC Meeting 3 on December 11, 2018
- Meeting Take Away's
APPROVE MEETING #1
SUMMARY –
MAY 29, 2018
WHERE WE ARE & WHERE WE ARE GOING
PROJECT 2030 SCOPE

- Asset Inventory
- Future Water Demand Projections
- Water Main Assessment & Costs
- Water Main Replacement Phasing Plan
- Funding Strategy/Rate Analysis
- Implementation Plan
WATER DEMAND FORECAST

How projected changes in water usage will affect the way the District replaces and sizes water main
WATER DEMAND FORECAST

2030 WATER MAIN REPLACEMENT PROJECT

Customer Advisory Committee (CAC)

Water Main Assessment

Implementation Plan

Demand Forecast

Asset Inventory Project Polygon

Cost Estimates Phasing Plan Funding Options
HISTORICAL WATER DEMAND

1971 – 9.7 MGD
1999 – 19.1 MGD
2015 – 8.2 MGD
2017 – 9.7 MGD
WATER DEMAND FORECAST

2017 WATER DEMANDS
9.7 MGD

From Table 1-2 – Demand Forecast Technical Memo
WATER DEMAND FORECAST

FACTORS AFFECTING DEMAND:
• POPULATION GROWTH
FACTORS AFFECTING DEMAND:

- Water Conservation Driven by State Legislation
Gov. Jerry Brown signed SB 606/AB 1668 on May 31, 2018

Put in place water use requirements for water suppliers like CHWD

Requirements to be developed and enforced by State Water Resources Control Board

Expected to go into effect in 2022
LAW’S EFFECTS ON CHWD

- CHWD will be required to meet water use standards for:

<table>
<thead>
<tr>
<th>Type of Water Use</th>
<th>Status of Regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Indoor Use</td>
<td>In Place</td>
</tr>
<tr>
<td>Commercial/Institutional Use</td>
<td>To Be Determined</td>
</tr>
<tr>
<td>Outdoor Use</td>
<td>To Be Determined</td>
</tr>
<tr>
<td>Water Loss</td>
<td>In Place</td>
</tr>
</tbody>
</table>

- Residential Indoor Water Use measured at District-level:
  - Gallons Per Capita Per Day = average across the population
IMPACTS TO CUSTOMERS

• Standard for Indoor Water Use across District
  • 55 Residential Gallons per capita per day by 2022
  • 50 Residential Gallons per capita per day by 2030

• District is exploring available options to meet targets
  • Working with Customers
  • Combating unfair regulations
WHAT DOES THIS MEAN FOR PROJECT 2030?

• Legislation is the major factor in determining water demand
From Table 1-4 – Demand Forecast Technical Memo

WATER DEMANDS (GPCD)

Single family

Multifamily
WATER DEMAND FORECAST

2017 WATER DEMANDS
9.7 MGD

2050 WATER DEMANDS
8.2 MGD

From Table 1-2 – Demand Forecast Technical Memo

From Table 1-6 – Demand Forecast Technical Memo
WATER EFFICIENCY MAY OUTWEIGH POPULATION GROWTH
RANGE IN 2050 WATER DEMAND PROJECTIONS

2050 Forecast
7.8-9.5 MGD
NEXT STEPS – HOW WE’LL USE THIS DATA
CAC ACTIVITY
Q&A ACTIVITY

1. Break into groups of 4
2. Discuss what you have heard, and come up with 1 question per group
3. Please write your question on a large post-it note
4. Staff & Consultants to answer questions
BREAK
DISTRICT PIPELINE ASSET INVENTORY RESULTS

Age of the water system, various pipe types, and where they’re located throughout the system
• Goal: Add key data to the District’s GIS water facility map

• Tasks:
  ▪ Go through project files
  ▪ Scan documents
  ▪ Data entry into map
    ▪ Decade of Installation
    ▪ Pipe Type
  ▪ QA/QC
BEFORE PIPELINE INVENTORY – DECADE OF INSTALLATION

145 Miles or 58%
AFTER PIPELINE INVENTORY – DECADE OF INSTALLATION

14 Miles or 5%
Pipeline Inventory
Decade of Installation

Legend
- Miles of Pipeline
- Percent of Pipeline
## AFTER PIPELINE INVENTORY – DECADE OF INSTALLATION

<table>
<thead>
<tr>
<th>Decade of Installation</th>
<th>Pipe Age (Years)</th>
<th>Miles of Pipeline</th>
<th>Percent of Pipeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>68</td>
<td>19</td>
<td>8</td>
</tr>
<tr>
<td>1960</td>
<td>58</td>
<td>32</td>
<td>13</td>
</tr>
<tr>
<td>1970</td>
<td>48</td>
<td>88</td>
<td>35</td>
</tr>
<tr>
<td>1980</td>
<td>38</td>
<td>53</td>
<td>21</td>
</tr>
<tr>
<td>1990</td>
<td>28</td>
<td>16</td>
<td>6</td>
</tr>
<tr>
<td>2000</td>
<td>18</td>
<td>17</td>
<td>7</td>
</tr>
<tr>
<td>2010</td>
<td>8</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Year Unknown</td>
<td>-</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>-</td>
<td><strong>250</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

- **56%**
BEFORE PIPELINE INVENTORY – PIPE TYPE

PIPELINE TYPES (INITIAL DATA)

- ACP
- PVC
- DIP
- CML
- STL
- CMLC
- DW
- UNKNOWN

57 Miles or 23%
AFTER PIPELINE INVENTORY – PIPE TYPE

PIPELINE TYPES
- ACP
- PVC
- DIP
- CML
- STL
- CMLC
- DW
- UNKNOWN

2 Miles or 1%
<table>
<thead>
<tr>
<th>Pipe Type</th>
<th>Miles of Pipeline</th>
<th>Percent of Pipeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACP</td>
<td>154</td>
<td>61.7</td>
</tr>
<tr>
<td>PVC</td>
<td>59</td>
<td>23.8</td>
</tr>
<tr>
<td>DIP</td>
<td>18</td>
<td>7.3</td>
</tr>
<tr>
<td>CML+STL</td>
<td>13</td>
<td>5.4</td>
</tr>
<tr>
<td>CMLC</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>DW</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Pipe Type Unknown</td>
<td>2</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>250</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
How is this data going to be used?

- Age and Pipe Type Data will be used when prioritizing water main replacement in the Water Main Assessment/Risk Analysis Step
  - Generally replace older mains first
  - When comparing two pipes of the same year – pipe type may be a factor in determining which pipe is replaced first.
QUESTIONS?
MAIN REPLACEMENT BASICS AND BENCHMARKING

Major benchmarks to evaluate various options
A day in the life of CHWD engineering and operations staff

Why does this cost so much?
A DAY IN THE LIFE OF...

• Operations
  • Ensure delivery and quality of supplied water
  • Schedule planned repairs / respond to unplanned repairs
  • Exercise valves, flush hydrants and mains
  • Water quality sampling
  • Customer relations

• Engineering
  • Capital Improvement Plan implementation
  • Plan checking and inspections
  • GIS/mapping
  • Business relations
MAIN REPLACEMENT COSTS

- **Labor**
  - Excavation
  - Installation and Connections
  - Testing (Pressure and Water Quality)
  - Pavement Repair

- **Materials**
  - Pipe
  - Backfill
  - Asphalt

- **Other**
  - Traffic Control
  - Environmental
  - Temporary Service
WHAT IS BENCHMARKING?

• “A standard by which something can be measured or judged.”
• Track performance indicators
• Show whether goals are being met
WHY UTILITIES DO THIS

• Prioritize main replacement
• Improve operational efficiency
• Optimize future capital investments
• Make informed decisions
BENCHMARKING STEPS

1. Identify Improvement Goals
2. Establish Benchmarks
3. Collect Data - goals need to be measurable
4. Track Progress and Identify Trends
PERFORMANCE VS. INVESTMENT
## COMMON UTILITY WATER DISTRIBUTION BENCHMARKS

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>How We Measure</th>
<th>Indicator Of</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mains Replaced</td>
<td>Percent per Year</td>
<td>Pace of Replacement</td>
</tr>
<tr>
<td>Water Loss</td>
<td>Percent, GPD/Connection</td>
<td>Integrity of System</td>
</tr>
<tr>
<td>Breaks and Leaks</td>
<td>Events per 100 miles of Main</td>
<td>Integrity of System</td>
</tr>
</tbody>
</table>
CHWD MAIN REPLACEMENT BENCHMARK

PROJECT 2030
WATER MAIN REPLACEMENT

Percent / Year

Year

Annual %
1% Target
1.5% Target


0 0.5 1 1.5 2

Annual %

5 Yr Ave

1% Target

1.5% Target
## Water Loss Benchmarks

<table>
<thead>
<tr>
<th>Water Loss Benchmark</th>
<th>Units of Measure</th>
<th>AWWA Survey Median (25&lt;sup&gt;th&lt;/sup&gt; - 75&lt;sup&gt;th&lt;/sup&gt; %ile)</th>
<th>CHWD Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Losses per Service Connection</td>
<td>Gallons / day per connection</td>
<td>35.9 (29.5 – 48.3)</td>
<td>24.4</td>
</tr>
<tr>
<td>Leakage Index</td>
<td>--</td>
<td>1.9 (1.5 – 2.5)</td>
<td>1.2</td>
</tr>
</tbody>
</table>
• Finalize annual main replacement goal.
• Review District’s historical main break and leak data.
• Conduct main replacement prioritization and rate analysis. Focus on pipes with higher risk of failure.
• Develop data collection procedures for Implementation Plan.
QUESTIONS?
PUBLIC COMMENT
PUBLIC COMMENT
• Water Demand Forecast – Future water use is projected to decline

• District Pipeline Asset Inventory Results – Water main age and pipe type will be two key components in prioritizing water main replacement

• Main Replacement Basics and Benchmarking – Use Benchmarks to track progress towards goal
Next Meeting: Tuesday, December 11\textsuperscript{th}

\textbf{Time:} 6:30 pm – 9:15 pm

\textbf{Location:} Citrus Heights Community Center, Hall A
VISIT THE CAC WEBPAGE

chwd.org/customer-advisory-committee/
PARTICIPANT TAKEAWAY’S
CLOSING