Purpose of Workshop

- Background - Importance of Rate Analyses
- Summarize Process and Present Data from the Cost of Service Analysis
- Present Staff’s Recommendations for Water Rates
- Seek Input on Recommendations
Path To Today

- 20-Year Master Plan for Capital Improvement Program (CIP)
- Performed detailed assessment of cost of service over last 5 months
- Worked with Council Advisory Subcommittee for direction and support to explore options and alternatives
Water Fund Mission

1. OPERATIONS - Optimize 24/7 operation within $22M budget

2. CAPITAL IMPROVEMENTS - Invest in critical infrastructure to ensure long term reliability

3. CUSTOMERS - Supply safe, reliable, low-cost drinking water to 80,000
Water Fund Operation - 52 staff

- Water Supply: 3 sources and 5,000 acres of watershed
- Water Treatment: 3 plants
- Water Transmission
  - 12 tanks
  - 9 pump stations
  - 14 pressure regulating stations
- Water Distribution
  - 340 miles of buried pipeline
  - 24,500 service connections
  - 2,500 fire hydrants
  - 5,100 backflow prevention devices
15 Years of Progress

1997 Master Plan Executed

- $17M invested in the water system from pay-as-you-go financing
- $43M invested from Revenue Bonds
  - Ed Barwick Jamieson Improvements Project - ($38 M)
  - Lakeview, Alston, Imola Tanks - ($13M)
  - Milliken Seismic Improvements - ($1M)
  - Hennessey Filter-To-Waste - ($2M)
  - Hennessey Tower Valves - ($0.5M)
  - SCADA Improvements - ($1M)
  - Main Replacements - ($3.5M)
  - KERN Water Purchase - ($1M)

Rates Allow Capital Investment
City of Napa Water
Council Workshop
Cost of Service Rate Analysis
City Council - July 19, 2011

**Capital Investments**

**Milliken Reservoir**
Seismic Modifications

- **A-Tank**
  - Construction $1M

- **A-Tank**
  - Construction $4M
Rates Allow Capital Investments

2010-2050+

Barwick Jamieson
Canyon Water Treatment Plant Improvements

Construction $38M
1997 15-Year Master Plan

- Capital Investment in Storage and Treatment
- Cost of Service Analysis 2004

2011 20-Year Master Plan

- Capital Investments focused on protection of Transmission and Distribution
- Compliance-driven projects require distribution replacements to increase flow regime: Stage II Disinfection Byproduct Rule (Stage II DBPR)
- Hennessey Treatment Plant is 30 years old
- Major transmission mains are 40+ and 60+ yrs old
- 47 miles of pipelines are 60+ years old
Rates Allow Capital Investments

*Need to invest...* buried pipes are aging and corroding
Optimized Capital Investment

- Prioritized distribution system upgrades designed to meet Stage II DBP regulation
- Defer wholesale replacement through cathodic protection (CP) program

Replacement $1M per mile vs CP = $50K per mile

20 year deferral of wholesale pipe replacements
Goals for Cost Of Service Analysis

- Insure continued capital investments to replace aging system and meet new regulations
- Develop a CIP reserve for major treatment investments required in years 6-8
- Return to a fixed service charge for minimum level of service and tiered quantity charges to promote conservation
- Maintain pace with increases of fixed operating costs
- Optimize O&M systems so life of assets are extended and responsiveness is increased
- Insure charges among customer classes are equitable
**Approach for Cost Of Service Analysis**

**What**
- Revenue Requirements
  - Operating Costs
  - Capital Investments
  - Existing Assets

**Who**
- Customer Classes

**How**
- Cost Allocation Among Beneficiary Classes
  - System size

**Why**
- True Cost of Service and Fair Share

✓ Compliance with Proposition 218
2011 Master Plan
Identifies and Prioritizes Capital Needs for the next 20 Years

<table>
<thead>
<tr>
<th>Distribution System Improvements</th>
<th>$ 2,000,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meter Replacement (20-yr cycle)</td>
<td>$ 400,000</td>
</tr>
<tr>
<td>Valve and Hydrant Replacement (50 yr cycle vs 30 yrs)</td>
<td>$ 500,000</td>
</tr>
<tr>
<td>Tank and Pump Station Repairs</td>
<td>$ 100,000</td>
</tr>
<tr>
<td>Minimum Annual Investment</td>
<td>$ 3,000,000</td>
</tr>
</tbody>
</table>

Other Major Short Term Capital Projects 3-10 Yrs
- Dwyer Road Pump Station - ($2.1M shared costs)
- Hennessey Treatment Plant Filters- ($6M)
- Hennessey Treatment Plant Ozone - ($8M)
- Clark Street Pump Station - ($1.5M)
- SCADA Improvements - ($3M)

Other Major Capital Projects >10 Yrs
- Transmission Main Slip Lining ($15-25M)
- Milliken Treatment Plant - ($10M)
Operating Costs - $22M

- Labor 28%
- General Fund & Transfers 11%
- Distribution and Treatment Supplies 8%
- Billing, Engineering, Conservation 3%
- Water Supply 27%
- Chemicals 6%
- Debt Service 17%

- 24/7 operation and <30% labor
- Most costs are fixed and non-discretionary

50% Fixed
**Cost Of Service Analysis - Revenue Requirements**

<table>
<thead>
<tr>
<th>Year</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional Revenue Required</td>
<td>8%</td>
<td>8%</td>
<td>8%</td>
<td>4%</td>
<td>4%</td>
</tr>
</tbody>
</table>

**Major Revenue Sources**

<table>
<thead>
<tr>
<th>Service Type</th>
<th>No. of Accounts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Family Residential</td>
<td>20,900</td>
</tr>
<tr>
<td>Multi Family Residential</td>
<td>1,400</td>
</tr>
<tr>
<td>Commercial</td>
<td>1,400</td>
</tr>
<tr>
<td>Irrigation</td>
<td>300</td>
</tr>
<tr>
<td>Interruptible Agricultural Services</td>
<td>19</td>
</tr>
<tr>
<td>Pumped Zones</td>
<td>2,200</td>
</tr>
<tr>
<td>Fire Services</td>
<td>550</td>
</tr>
<tr>
<td>City of St Helena</td>
<td>1</td>
</tr>
<tr>
<td>State Hospital</td>
<td>1</td>
</tr>
</tbody>
</table>
Cost Of Service Analysis

- Compliance with CUWCC BMPs and SBx7-7 conservation requirements
  - 165 gpcpd to 132 gpcpd

[Graph showing gallons per capita per day from 1984 to 2020]
Rate Structure

Single Family Residential (SFR)

- Return to service charge and tiers
- Ensure basic level of service is included
- Promote conservation
- Equitable charges for level of service received

<table>
<thead>
<tr>
<th></th>
<th>Inside City Proposed 2012 Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bimonthly Service Charge (includes 3 units)</td>
<td>$13.25</td>
</tr>
<tr>
<td>4-34 Units</td>
<td>$4.42</td>
</tr>
<tr>
<td>35+ Units</td>
<td>$7.70</td>
</tr>
</tbody>
</table>

(1 Unit = 1,000 gallons)
## Rate Structure - Bill Impact

**SFR - Inside City (18,900 customers)**

<table>
<thead>
<tr>
<th>Units Consumed Bimonthly</th>
<th>Total Bimonthly Bill</th>
<th>Percent Total Customer Bills Per Year</th>
<th>Price Per Gallon</th>
<th>Monthly Increase from Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>$13.25</td>
<td>7%</td>
<td>$0.0044</td>
<td>$0.49</td>
</tr>
<tr>
<td>9</td>
<td>$39.78</td>
<td>24%</td>
<td>$0.0044</td>
<td>$1.49</td>
</tr>
<tr>
<td>27</td>
<td>$119.34</td>
<td>51%</td>
<td>$0.0044</td>
<td>$3.88</td>
</tr>
<tr>
<td>40</td>
<td>$196.48</td>
<td>12%</td>
<td>$0.0049</td>
<td>$16.44</td>
</tr>
<tr>
<td>40+</td>
<td></td>
<td>6%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

> **82%** of all bills will increase less than **$4 per month**
# Rate Structure - Bill Impact

**SFR - Outside (2,000 customers)**

<table>
<thead>
<tr>
<th>Units Consumed Bimonthly</th>
<th>Total Bimonthly Bill</th>
<th>Percent Total Customer Bills Per Year</th>
<th>Price Per Gallon</th>
<th>Monthly Increase from Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>$19.21</td>
<td>16%</td>
<td>$0.0064</td>
<td>$0.94</td>
</tr>
<tr>
<td>9</td>
<td>$57.68</td>
<td>39%</td>
<td>$0.0064</td>
<td>$2.83</td>
</tr>
<tr>
<td>27</td>
<td>$173.04</td>
<td>27%</td>
<td>$0.0064</td>
<td>$8.49</td>
</tr>
<tr>
<td>40</td>
<td>$284.90</td>
<td>8%</td>
<td>$0.0071</td>
<td>$26.85</td>
</tr>
<tr>
<td>40+</td>
<td>$284.90</td>
<td>10%</td>
<td>$0.0071</td>
<td></td>
</tr>
</tbody>
</table>
## Rate Structure

### Pumped Zone

<table>
<thead>
<tr>
<th>Rate Category</th>
<th>Current Rate</th>
<th>Proposed Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity Charge ($/unit)</td>
<td>$0.42</td>
<td>$0.82</td>
</tr>
</tbody>
</table>
Rate Structure - Bill Impact

Pumped Zone (2,200 customers)

- Energy costs
- Pump stations maintenance and capital replacement

<table>
<thead>
<tr>
<th>Units Consumed Bimonthly</th>
<th>Total Bimonthly Bill</th>
<th>Percent Total Customer Bills Per Year</th>
<th>Price Per Gallon</th>
<th>Monthly Increase from Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>$13.53</td>
<td>8%</td>
<td>$0.0052</td>
<td>$1.09</td>
</tr>
<tr>
<td>9</td>
<td>$40.59</td>
<td>27%</td>
<td>$0.0052</td>
<td>$3.29</td>
</tr>
<tr>
<td>27</td>
<td>$121.77</td>
<td>48%</td>
<td>$0.0052</td>
<td>$9.86</td>
</tr>
<tr>
<td>40</td>
<td>$180.40</td>
<td>10%</td>
<td>$0.0057</td>
<td>$24.44</td>
</tr>
</tbody>
</table>

✔ Beneficiaries pay for cost of service provided
## Rate Structure - Bill Impact

### Inside City Commercial, Multi-Family Residential, Irrigation

- **Tiers are not applied** (3,000 customers)

<table>
<thead>
<tr>
<th>Units Consumed Bimonthly</th>
<th>Total Bimonthly Bill</th>
<th>Percent Total Customer Bills Per Year</th>
<th>Price Per Gallon</th>
<th>Monthly Increase from Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>$110.50</td>
<td>58%</td>
<td>$0.0044</td>
<td>$4.13</td>
</tr>
<tr>
<td>120</td>
<td>$530.40</td>
<td>30%</td>
<td>$0.0044</td>
<td>$19.80</td>
</tr>
<tr>
<td>200</td>
<td>$884.00</td>
<td>9%</td>
<td>$0.0044</td>
<td>$33.00</td>
</tr>
<tr>
<td>200+</td>
<td></td>
<td>3%</td>
<td>$0.0044</td>
<td></td>
</tr>
</tbody>
</table>
Rate Structure

Interruptible Agriculture (19 customers)

- Outside Rates during all seasons
- Previously did not reflect cost of service

<table>
<thead>
<tr>
<th>Units Consumed Bimonthly</th>
<th>Total Bimonthly Bill</th>
<th>Percent Total Customer Bills Per Year</th>
<th>Price Per Gallon</th>
<th>Monthly Increase from Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>$160.23</td>
<td>65%</td>
<td>$0.0064</td>
<td>$15.73</td>
</tr>
<tr>
<td>120</td>
<td>$769.08</td>
<td>12%</td>
<td>$0.0064</td>
<td>$75.48</td>
</tr>
<tr>
<td>200</td>
<td>$1,281.80</td>
<td>11%</td>
<td>$0.0064</td>
<td>$125.80</td>
</tr>
<tr>
<td>200+</td>
<td></td>
<td>12%</td>
<td>$0.0064</td>
<td></td>
</tr>
</tbody>
</table>
## City of Napa Water
### Council Workshop
### Cost of Service Rate Analysis
#### City Council – July 19, 2011

### Rate Structure
- Current Rate does not equal service provided
- Impact on the system
- Communication and Outreach

### Fire Services

<table>
<thead>
<tr>
<th>Service Size</th>
<th>No. of customers</th>
<th>Current Rate</th>
<th>Proposed Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1/2 inch</td>
<td>(6)</td>
<td>$7.50</td>
<td>$8.10</td>
</tr>
<tr>
<td>2 inch</td>
<td>(40)</td>
<td>$10.00</td>
<td>$10.80</td>
</tr>
<tr>
<td>2 1/2 inch</td>
<td>(15)</td>
<td>$12.50</td>
<td>$13.50</td>
</tr>
<tr>
<td>3 inch</td>
<td>(-)</td>
<td>$15.00</td>
<td>$16.20</td>
</tr>
<tr>
<td>4 inch</td>
<td>(200)</td>
<td>$20.00</td>
<td>$21.60</td>
</tr>
<tr>
<td>6 inch</td>
<td>(200)</td>
<td>$30.00</td>
<td>$36.50</td>
</tr>
<tr>
<td>8 inch</td>
<td>(80)</td>
<td>$40.00</td>
<td>$64.79</td>
</tr>
<tr>
<td>10 inch</td>
<td>(6)</td>
<td>$50.00</td>
<td>$103.69</td>
</tr>
<tr>
<td>12 inch</td>
<td>(2)</td>
<td>$60.00</td>
<td>$153.18</td>
</tr>
</tbody>
</table>
Rate Structure - Fire Services

Average Yearly Water Costs for Customers with Dedicated Fire Services
(applying each Agency’s current rates to average Napa charges)

- Current Average for 6” Fire Services: ~$409
- Current Average for 4” Fire Services: ~$209
- Current Average for 2” Fire Services: ~$80
Cost of Napa Water

Average Yearly Water Costs for Single-Family Residential Customers
(applying each Agency’s current rates to average Napa residential usage)
Rate Structure Benefits

Reclassify Reserves:

Drought Reserve becomes CIP Reserve

Why can we do this?

- Service charge stabilizes revenue
- Increased State Water Project entitlements
- Greater ability to take beneficial use of entitlements through completion of EBJ TP
What will be achieved?

- Capital Investments of $3M per year
- Establish $4.7M CIP Reserve for large compliance-driven projects
- Fixed service charge stabilizes revenue and moves toward covering actual costs incurred
- Tier Rates to raise awareness of conservation and move towards compliance with 20% by 2020 Regulation SBx7-7
- Maintain capital investments and cover increasing chemical and water supply costs
Cost Of Service Analysis

Results of Adjusted Rates:

- Safe, reliable, low cost water for our customers
- Meet Pending Regulations
  - Stage II DBPR
  - SBx7-7 Conservation
- Control O&M costs through consistent investment in capital improvements
- Consistent investment avoids inevitable rate shock later
**If not achieved?**

- Capital Investments
- Increased failures
- Increased Costs for emergency repairs
Next Steps

- August 2 - Council to Authorize Prop 218 Notification
- August 5 - Prop 218 Notifications will be mailed to all customers
- September 20 - Return to Council for a Public Hearing and Option to Adopt Rate Structure
- October 1 - Revised Rates take effect
COUNCIL

- Ask questions and provide feedback

- Provide direction to staff regarding the proposed rates and proposed rate structure