

# Ann Arbor Water Treatment Citizen Advisory Committee



March 11, 2008

# Project Overview

- ◆ This project includes:
  - ◆ Identifying and evaluating alternatives for replacement of the lime feed/slaking equipment
  - ◆ Modifications to the lime storage and conveyance systems
  - ◆ Evaluation of the replacement/expansion of the sodium hydroxide feed facility
- ◆ Elements include:
  - ◆ Several project workshops
  - ◆ Reviewing experience at other plants
  - ◆ Conducting public engagement activities
  - ◆ Preliminary design report

# Role of the Citizen Advisory Committee

- ◆ Develop understanding of the choices and implications of additional water softening for the city
- ◆ Guide the engagement of a broader set of customers to hear their perspectives
- ◆ Bring your perspective to the discussion and recommendations
- ◆ Make recommendations regarding:
  - ◆ Water hardness
  - ◆ Water quality impacts associated with additional softening
  - ◆ Related costs for delivery of any improvements

# Considerations

- ◆ Daily operations
  - ◆ Plant
  - ◆ Customers
- ◆ Health considerations
- ◆ Rates
- ◆ Life cycle costs
  - ◆ City
  - ◆ Customers

# Introductions

- ◆ Name
- ◆ Your profession/area of interest
- ◆ Previous work on similar committees

# Project Scope

- ◆ **Complete rehabilitation of lime softening system**
  - ◆ Replace equipment which has exceeded its useful life
  - ◆ Improve worker safety
- ◆ **Investigate and make recommendations regarding desired water hardness**
  - ◆ Customer input
  - ◆ Cost/benefit analysis



# Project Timeline

- ◆ **Study phase**
  - ◆ Lime system selection complete by August 2008
  - ◆ Hardness evaluation complete by August 2008
- ◆ **Design**
  - ◆ August – February 2009
- ◆ **Construction**
  - ◆ February 2009 – January 2010

# CAC Proposed Work Plan

<b>March 11</b>	<ul style="list-style-type: none"><li>◆ Purpose and role of CAC</li><li>◆ Project Overview</li><li>◆ Feedback Approaches</li></ul>
<b>April 15</b>	<ul style="list-style-type: none"><li>◆ Review initial technical findings</li><li>◆ Review focus group or survey protocols</li><li>◆ Review website content</li></ul>
<b>May 15</b>	<ul style="list-style-type: none"><li>◆ Review additional findings</li><li>◆ Review available customer feedback</li></ul>
<b>June 5</b>	<ul style="list-style-type: none"><li>◆ Review additional data and customer feedback</li><li>◆ Dialogue on recommendations</li></ul>
<b>June 26 and July 22</b>	<ul style="list-style-type: none"><li>◆ Conclude recommendations</li><li>◆ Prepare recommendations to City Council</li><li>◆ Confirm communications approach for customers</li></ul>

# Current Data

# Current State

- ◆ Hardness is primarily Calcium
- ◆ Current range is 150 – 180 mg/L or ppm
- ◆ Water is harder in the winter than the summer
- ◆ Lime is used to soften the water
- ◆ Sodium hydroxide is used for pH adjustment but could be expanded for additional softening

# Customer Issues with Hardness

- ◆ **Scaling of appliances and pipes**
- ◆ **Potential for reduced life of hot water heaters**
- ◆ **Spotting on dishes in dishwashers**
- ◆ **Quantity of soap use**
- ◆ **Use of residential and business softening units**

# Softness Goals

- ◆ With the use of sodium hydroxide for additional softening, lower hardness can be achieved
- ◆ Hardness goals can be set anywhere
- ◆ Recommended 100 – 130 mg/L as best balance between hardness, distribution system pipe condition, and cost

# Cost Implications (from 2004 Master Plan)

- ◆ \$3 million capital to expand sodium hydroxide facility
- ◆ Operations and Maintenance costs of:
  - ◆ \$120 per Million Gallons (MG) for hardness of 130 milligrams per liter (mg/L)
  - ◆ \$300 per MG for hardness of 100 mg/L
- ◆ Customer cost:
  - ◆ Residential \$1/mo (100 mg/L)
  - ◆ U of M \$5,400/mo

# Life Cycle Costs

- ◆ Potential long term savings for customers and the Utility...being investigated

# Health Considerations

- ◆ **Ann Arbor**

- ◆ **Current sodium (average) 67 mg/L**
- ◆ **Projected sodium (average) 81 mg/L**

- ◆ **Others**

- ◆ **EPA recommendation: 20 mg/L**
- ◆ **Ontario regulatory limit: 200 mg/L**
- ◆ **Ontario medical notification limit: 20 mg/L**
- ◆ **Florida regulatory limit: 160 mg/L**

# Other Communities

- ◆ Less than 10% of plants nationally soften their water
- ◆ Lime is used by most
- ◆ Research on ten other communities underway

# **CAC Questions and Thoughts**

# Customer Feedback Options

- ◆ Targeted focus groups
  - ◆ Health professionals
  - ◆ Plumbers
  - ◆ Operating engineers for boiler systems
- ◆ Broad-based customer focus groups
- ◆ Survey
- ◆ Public meeting

# Targeted Focus Groups or Interviews

- ◆ Can ask more focused, subject matter expertise questions on issues identified by CAC, city staff and consulting team
- ◆ An informed group, but still will offer us only their opinions
- ◆ Not representative
- ◆ Will be hard to secure their time

# Broad-Based Focus Groups

- ◆ We can ensure better understanding of the issues before the group offers their perspectives
- ◆ Not representative
- ◆ Difficult to recruit participants

# Survey

- ◆ Can recruit diverse sample via postcards and link to website
- ◆ Can secure a larger number of quantitative responses from a more representative group
- ◆ Respondents can answer survey without basic understanding of the issues
- ◆ Qualitative information is harder to understand

# Open Public Meeting

- ◆ Welcoming to all
- ◆ We can ensure better understanding of the issues before the group offers their perspectives
- ◆ Not representative
- ◆ Difficult to recruit participants

# CAC Thoughts

# Next Steps

- ◆ Ongoing data collection
- ◆ Customer feedback approach launched
- ◆ Confirm meeting schedule