

**SACWSD – Water Hardness Advisory Committee (HAC)**  
**March 7, 2017**  
**Meeting Summary**

**DRAFT**

Members of the South Adams County Water and Sanitation District (SACWSD) Water Hardness Advisory Committee (HAC) convened for their first meeting. The purpose of the meeting was: to become familiar with other members; build agreement on how the committee will work together (approve operating protocols); and build mutual understand on the District (how it works, and water hardness). *See appendix A for a list of attendees and appendix B for the agenda.*

**I. OPERATING PROTOCOLS - Discuss and Approve**

The Committee reviewed and approved the operating protocols with one clarification. There was concern that one ground rule implied participants should not talk to constituents. The guideline for working together includes: *“Hold comments made during the meeting discussion as off the record and not for attribution; no participant should quote another participant or characterize their views outside of the meeting without permission”*

- Clarification: Members should speak to their constituents, neighbors, etc., but refrain from speaking *for* the HAC or *for* any other member, and refrain from quoting another member in discussion with constituents.

**II. KEY INTERESTS, CONCERNS AND NEEDS FOR ANY SOLUTION**

Participants brainstormed their key needs, concerns or interests to address in any solution/recommendation for water hardness in the District:

- Good water
- Good tasting - drinkable
- Good for skin (not negatively impact)
- Costs to consumers from impacts of deposits (e.g., appliance replacement & fixing, pipes, etc.)
  - No more personal investment
  - No more deposits
- Costs to rate payers – increase in rate costs for central treatment
- Affordable to scale for growth
- Resale home value
- Stability of water sources
- Environmentally responsible

### III. DISTRICT 101 INFORMATION – Presentation & Discussion

See Appendix C for data handout. For additional information see SACSWD website: water hardness update page ([sacwsd.org/hardnessupdates](http://sacwsd.org/hardnessupdates)) and presentations from this meeting ([sacwsd.org/HAC](http://sacwsd.org/HAC)).

#### **History – how we got here**

- 1951, voted to establish the water district
- 1959, voted to include waste water
- Water source decision – the best option was shallow wells/alluvial (other options: surface supplies were not good enough; Denver water was not going outside their boundaries and their northern sources had limited production would not meet the Districts needs)
- 1960s there was a lime softener for a single well source in Adams City, but they weren't getting enough benefit for the cost, so it was removed

#### **Current fact and figures**

- District serves approximately 17,000 accounts (homes, multifamily units and businesses) and 57,000 people
  - 10% businesses, including multifamily home (2000 +/- accounts)
- Water sources: 64% ground water wells, 9% deep wells, 27% from Denver water annually
  - The deep well water which is less hard goes straight into the system (no treatment except chlorination); and helps dilute the harder water sources
- System uses 9 million gallons of potable water a day and discharges 4 million gallons or treated wastewater
- District manages 504 miles of water line; 250 miles of sewer lines; 3400 hydrants; 5800 manholes; 12,000 water valves
- Treatment facilities use activated carbon treatment to pull out VOCs (volatile organic chemicals), not hardness

#### **Budget**

##### Costs

- Total Budget \$43.7 million - \$33 million for operations (funded by rates) and \$10.6 million for capital costs (funded by connection fees from new developments);
- Operations budget (\$33 million):
  - Water Operations (treatment, irrigation system, etc.) = \$7million
  - Waste water operations (treatment and maintenance of the sewer system) = \$3.8 million
  - Administration (customer service, environmental program, legal, IT, HR, etc.) = \$5.45 million
    - Retrofit of old meters (Neptune Software) – was completed December 2016
    - CONCERN: the billing staff doesn't understand the Neptune software), only the meter department has licenses to read the system

- Rate funded capital (engineering analysis for repair and replacement of aging infrastructure and equipment) = \$12.9 million
- Other budget considerations
  - Consultants do engineering and design work, among other things
  - Technology is more expensive than is used to be; we have to stay up to date to keep the system running
  - Construction costs are more expensive than they used to be
- Capital budget (rate funded capital) includes (big repair/replacement for upgrades or new regulations) = \$13 million
  - If we wait on some upgrades it will be more expensive later
  - New regulations require upgrades
    - Example: EPA's new requirement targeting removal of nutrients (nitrogen and phosphorous) to decrease nutrients' impacts on water systems (reservoirs, ponds, lakes and wildlife); this was a \$23 million capital investment that was paid for by State revolving fund loan
  - 30% of the water and sewer lines are 65 years old
- 2008-2011 development slowed down and the capital portion of the budget decreased/disappeared

### Revenue

- 64% of District revenue is from rates (\$27.8 million), 25% is from new development (connection fees; \$10.6 M) and additional revenue is from property taxes (\$2.2 M), and bonds (\$2.6 M)
- The District's current property tax is 3.1 mils; this is a very small percentage of a home owners' total property tax bill
- Rates are expected to rise everywhere due to inflation (basics cost more - materials, electricity, etc.)
- Rate comparison for annual water and wastewater
  - Compared with Denver, Thornton, Greeley, Longmont, Westminster, Broomfield, Aurora, Brighton, Castle Rock and Parker (listed in order of lowest to highest rates)
  - Commerce city is 5<sup>th</sup> lowest as average of \$1150 yearly (between Longmont and Westminster)
  - Lowest average cost is Denver, \$900 yearly (approximately)
  - Highest average cost is Parker, \$1750 yearly (approximately)

### **Water Hardness**

- Hardness comes from the minerals present in shallow/alluvial wells which is the source for a majority of District water
- Hardness is not a drinking water quality MCL issue (Maximum Containment Level, legal threshold limit under Safe Drinking Water Act), therefore is not regulated by EPA
- Soft water is 0-75 mg/L of calcium carbonate (CaCO<sub>3</sub>)
- Hard water is 300mg/L
- SACWSD water is 350 mg/L; in comparison Denver water is 90-130 mg/L

## Discussion:

### Concerns

- CONCERN: Costs to address untreated water by homeowners is high; it includes buying, installing and maintaining multiple systems, as well as costs to repair and/or replace appliances due to deposits.
- CONCERN: Too drastic a change in water composition may have negative effects; if we do centralized treatment could there be costly unintended impacts on the system
  - Example: Tucson AZ was all ground water, then they added Central AZ P...(CAP) which added Colorado River water that was high in salt from the reuse processes upstream. The impact was the salt dislodged years of scaling build up which created significant repair and replacement costs.
- CONCERN: The need for more revenue has caused the District to have creative billing.
- CONCERN: Current hard water is not safe for people with skin issues; it burns those with eczema

### Suggestions

- SUGGESTIONS (revenue): Consider seeking more grant funding.  
*Response:* The District does have a grant researcher/writer.
- SUGGESTION (revenue): Consider creating a special district.  
*Response:* We will consider it, but it would be a big challenge because we could not build a treatment facility in each neighborhood.
- SUGGESTION (revenue): District does the business back-flow investigations/check lists – staffs it (not use independent contractors, pay the District instead)
  - State regulations requires businesses to have back-flow prevention mechanism to ensure the business doesn't contaminate the water system; and is strongly enforced (checked annually)

### Questions/Answers

- *Question:* Has the District consider building another storage reservoir?
  - *Answer:* The District already acquired adequate storage for future growth, including gravel pit storage.
- *Question:* What are the hardness impacts on the District's system (pipes, etc.)?
  - *Answer:* There are no noticeable impacts on the system. Hardness impacts come from temperature fluctuation (warm, colder than the source). The District system does not fluctuate the temperature from the source (approximately the same temperature from source to house), which means there are no hardness impacts on the District system. For the District's staff water needs - kitchen, break rooms, the impact is the same as other customers.
- *Question:* How will the deep wells be replaced if they stop producing?
  - *Answer:* The District does not intend to replace deep water wells if they stop producing. The deep wells do help dilute the hard water/alluvial sources, but they will not be replaced.

- *Question:* Does water cost more in the north due to the dual water supply system (one line for potable water in a home/business, and one line for irrigation/non-potable)? When will the system be done?
  - *Answer:* At this time most District customers have a one-system system (potable/drinkable water only). The dual system was approved in 1998 for the North's new development (north of 96<sup>th</sup>/Eagle Creek), but it does not exist everywhere. The dual-system allows for water from groundwater well sources to go directly to irrigation systems, decreasing treatment costs. The District is not expecting to retrofit existing one-system customers with the dual-system, it would not be cost effective. The expectation is that all future growth will have the dual-system.

#### **Data Needs**

- How much does it cost to address hardness in your own home? Including system installation & maintenance, appliance repairs & replacement, additives needed (e.g., in dishwasher or laundry), pipe and hot water heater repairs/replacement
- What is the balance between DIY costs (install, repair, etc.) versus central treatment rate increase costs
- Comparison to other local water districts – DIY costs, and centralized treatment rate increase costs

#### **IV. CUSTOMER SURVEY, EARLY SPRING - Presentation**

Doug Jeavons, BBC Research and Consulting, is leading survey development and implementation to gather information from customers on perceptions on addressing water hardness. This information will help the Committee and the District make difficult trade-off decisions. Doug presented basic information about the upcoming SACWSD survey:

- Purpose of the survey - to have statistically credible information on: customer perceptions of water hardness; how they are addressing it individually (or not) and the costs; how much they may be willing to pay for centralized treatment (rate increase of how much); and ultimately their preference for centralized system versus increased rates.
- Telephone survey – to decrease participant bias and ensure a balance of north and south residents responses, the survey will be done through phone calls (call until there are 200 north resident responses and 200 south residents; approximately 5000 calls to get 400 complete responses)
  - Phone numbers used will be cell phones and land lines; usually 70% cell phones.
- Survey instrument (questions) – Doug is working to balance getting a lot of information with no taking too much time (10 minutes); they will need to to prioritize questions.
- Timeframe – will take 2-3 weeks to complete the calls; expect to have the report presented to the HAC in approximately 3 months.
- Spanish speakers – callers are bilingual, in some cases multilingual; this will address the higher proportion on immigrants in the south.

**Possible additional survey information to gather – Brainstormed**

- How much is a resident spending a year to address water hardness themselves?
- What type of system do they have?
- How old is their house?
- What home equipment have they repaired or replaced in the last year (e.g. hot water heater)?

**V. OPTIONS TO ADDRESS WATER HARDNESS - Brainstorm**

Participants started to brainstorm options to address hardness. Quickly they agreed the District has knowledge and expertise about possible options; they should bring the group a list.

**AGREEMENT:** Have the District bring a list of options to the HAC for the next meeting.

**VI. ADDITIONAL DATA REQUESTS - Brainstorm**

Participants brainstormed additional data needed for informed discussions:

- How much more are customers willing to pay for treatment?
- Growth projections and how growth will/not pay for new technology?
- Is there external funding for DIY costs? A subsidy somewhere (state, fed)?
- How many have DIY systems?
- Cost for DIY versus cost for rate payers for central treatment (e.g., reverse osmosis treatment)
- Options for purchasing more soft water to blend with hard water?
- Difference between soft water and conditioned water?
- What is soft water?

**VII. NEXT STEPS**

Next meeting: April 4, 6:00 dinner, 6:30-8:30pm meeting (will start closer to 6pm if all are present and ready)

## **APPENDIX A: Attendance**

### **HAC Members Present:**

- Bradley Bray, Business-North
- Danny Thomas, Resident-South
- Elaine Hassinger, Tri-County
- Glenn Murray, Historic/Special-North
- Jack Hagaman, Business -South
- Jessica Monahan, Resident-North
- Jim Jones, SACWSD-District Manager
- Kelly Tannenbaum, Resident-North
- Pamela Sprattler, Resident-South
- Robyn Jeffords, Resident-North
- Steven Erwin, Resident-North
- Tillie Villarreal, Resident-South
- Tina Dorf, Business-South
- William Frew, Business-North

### **SACWSD Staff & Consultants**

- Blair Corning, Environmental Program Manager
  - Amanda Thomas, Environmental Communication Specialist
  - Jody Erikson, JSE Associates (Facilitator)
  - Doug Jeavons, BBC (Researcher)
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## **APPENDIX B: Agenda**

### **SACWSD – Water Hardness Advisory Committee (HAC) March 7, 2017**

#### **Meeting Objectives:**

- Revise and approve Operating Protocols
- Build mutual understanding of: District, and water hardness 101

#### **6:15 Welcome & Introductions**

**6:25 Operating Protocols – Review and build agreement** – *Review the draft protocols on how the group will work together and the purpose*

**6:40 Discussion: What are the key interests, concerns and needs for any solution?**

**7:00 Presentation: District 101**

**7:45 Options to address Water Hardness** (*introduction only; much greater discussion will occur at the next meeting*)

#### **8:20 Additional Data requests**

- *What additional data is needed?*
- *What would you want to know from District customers (survey) to better inform your discussions and build agreement on a recommendation?*

**8:25 Next Steps** - Next meeting: April 4

**8:30 Adjourn**

**APPENDIX C: Handout**

# District Overview Facts and Figures

March 7, 2017



## History

1. District was formed in 1951.
2. District is a Special District under Colorado Law. It only provides water and wastewater services.
3. Serves a population of around 57,000
4. 98 full-time employees.
5. District has over 17,000 accounts.

## Wastewater

6. Average daily discharge of 4.0 MGD
7. Video at least 25% of District annually.
8. Jet at least 100% of District annually.

## Water Treatment

9. Water treatment plant treats and average of 9 MGD.
10. The District has 31 groundwater wells.
11. District gets 25% to 30% of its water from Denver Water annually.
12. District has 11 pump stations and reservoirs throughout the system.

## Water Quality

13. Water lab conducts over 14,000 analyses every year.
14. There is no EPA MCL for hardness
15. The typical water hardness found at a District home is 342 mg/L.

## D&C System Stats:

16. The District has: 504 miles of water lines, 250 miles of sewer lines; 3400 hydrants, 12,200 water valves, 5800 manholes.

## Financial Info

17. District's total 2017 budget is \$43.7 M which is made up of \$33.2 M Operating, \$10.5 M Development-related capital.
18. The District is mostly rate-funded. (64.4%). 5.1% of its total budget comes from a mill levy of 3.1 mils