

**SACWSD – Water Hardness Advisory Committee (HAC)
June 6, 2017**

Meeting Summary

Members of the South Adams County Water and Sanitation District (SACWSD) Water Hardness Advisory Committee (HAC) convened for their fourth meeting. The purpose of the meeting was: to evaluate options to understand how the HAC criterion balance across each option; and, to decide the best next steps for the HAC to build agreement on recommendation for how to address water hardness. *(See appendix A for a list of attendees and Appendix B for the agenda).*

I. EVALUATION – HOW HAC CRITERIA BALANCE PER OPTION

The HAC evaluated three options as a group, and the others individually. The HAC started by evaluating the “do nothing” option together in discussion. Then they evaluated the pellet and rebate options by using electronic polling and discussed the results. The evaluation used a bubble evaluation tool or points for electronic polling *(see appendix C for the evaluation tool handout)*:

-  - 1 - Empty = Poor, does not meet the criteria enough to be worth it
-  - 2 - Half full = Ok, acceptably meets the criteria
-  - 3 - Full = Good, meets the criteria better than “ok”

The following are the general results of the HAC evaluation, this is a summary and not intended to be the polling average or consensus agreement on a group evaluation. *(See Appendix D for comparison table of the three options they evaluated and discussed as a group).*

OPTION: Do Nothing		
HAC Criteria	Eval.	Why?
Addresses hardness		It doesn't address/decrease hardness in tap water.
Manages costs to rate payers		It mostly maintains or does not increase rates (other than expected increase for inflation). <i>(Some HAC said fully met criteria, some said half)</i>
Minimizes environmental impacts (and disposal costs)		There are no/less added impacts compared to other options, but population growth will lead to more houses with DIY softeners and an increase negative impacts to the treatment facility from added softener salt discharge. <i>(Some HAC said half, some said empty)</i>
Equitable – good for all (system wide benefit), fair		Same for all, but some won't be able to afford softeners and some have better water. <i>(Some HAC said half, some said empty)</i>

OPTION: Do Nothing		
HAC Criteria	Eval.	Why?
Improves taste	<input type="radio"/>	Taste is very subjective, and doing nothing will not change the taste in any way.
Minimizes negative impacts to skin	<input type="radio"/>	Doing nothing will not change the current impacts to skin.
Minimized DIY costs	<input type="radio"/>	Some will DIY, some won't and there will still be appliance replacement costs.
Sustainable	<input type="radio"/>	Is and isn't. Population growth will increase the number of houses, and the number of softeners increasing the salt discharge into the treatment facility that will mean more environmental impacts and disposal costs.
Explainable	<input checked="" type="radio"/>	Would be easy to explain/show the balance of HAC criteria in comparison to other options, but people will not agree with the doing nothing and people will think the HAC couldn't figure out how to make it work.
Legal	<input checked="" type="radio"/>	Legally doable.

OPTION: Pellets		
HAC Criteria	Eval.	Why?
Addresses hardness	<input checked="" type="radio"/>	It does decrease hardness in water, although it may have a limit to how low the hardness can go.
Manages costs to rate payers	<input type="radio"/>	Any rate increase will hurt those on small fixed incomes, but it is less expensive than any other central treatment option. ? - The hazardous level in concentrated pellets is unknown; if high, the disposals costs would increase.
Minimizes environmental impacts (and disposal costs)	<input type="radio"/>	Better than other central treatment options (no sludge) and the byproduct might be marketable. ? - The hazardous levels in the pellets is unknown.
Equitable – good for all (system wide benefit), fair	<input checked="" type="radio"/>	It is the same for all - similar benefit and similar rate increase for all.

OPTION: Pellets		
HAC Criteria	Eval.	Why?
Improves taste		If hardness levels decrease there will be some change. ? – Actual change to taste is unknown, and if that change is good is also unknown because taste is subjective.
Minimizes negative impacts to skin		Decreasing hardness will change the impact on skin, but don't know how much and the hardness may not be low enough to be a noticeable decrease in negative impacts. <i>(Some HAC said full, some half)</i>
Minimized DIY costs		Some will still DIY, and some won't; if taste doesn't change people will still add DIY systems.
Sustainable		It is more sustainable than other central treatment options, but it assumes the byproduct is marketable, if it is not or has hazardous materials then disposal may not be permissible over time.
Explainable		Easy to explain using the balance of HAC criteria (addresses hardness at lower costs than other options), but if taste is still not good people may not believe the process helped improve the water.
Legal		Legally doable, but if the residual pellets contain hazardous material exceeding normally accepted landfill concentrations, the residuals would need to go to a hazardous waste landfill to be legally compliant and cost would be significantly more.

OPTION: Rebate		
HAC Criteria	Eval.	Why?
<i>NOTE: Jim Jones informed the HAC that the SACWSD attorney said rebates were not legal. Although this option seems to be eliminated because it is not legal, the HAC evaluated it for comparison discussion (see "legal" criteria below).</i>		
Addresses hardness		It will address hardness for some, but not for all. <i>(Some HAC said empty, some half)</i>
Manages costs to rate payers		It would be a smaller rate increase than treatment options, but too many program variables to decide (e.g., if

OPTION: Rebate		
HAC Criteria	Eval.	Why?
		house is sold the new owner wouldn't get the rebate). <i>(Some HAC said empty, some half)</i>
Minimizes environmental impacts (and disposal costs)	○	Does not minimize impacts, as growth continues more houses are built and the new people have expectations of better water and more likely to install DIY softeners; more softeners in more houses puts more salt into the treatment facility increasing disposal costs and impacts.
Equitable – good for all (system wide benefit), fair	◐-	Not all will be able to afford softeners even with a rebate (install and maintenance), but it will help anyone who takes advantage of the program.
Improves taste	◐	Only for those who get a DIY system.
Minimizes negative impacts to skin	◐-	Not everyone will access the program and change their water.
Minimized DIY costs	◐+	It will lessen the cost of installation, but there will still be operation and maintenance costs and if the prior homeowner got the rebate the new owner will pay full DIY costs.
Sustainable	◐-	It is only a one-time rebate/not sustainable; and the increase of softeners increases disposal costs for the treatment facility and possibly not permissible.
Explainable	◐	Not explainable if not legal, and not sustainable or equitable, etc. <i>(Some HAC said full, some half, some empty – most evenly spread)</i>
Legal	○	The SACWSD attorney said it would not be legal because the rebate would not be a system wide benefit - not all benefit, yet all pay, (most other rebate programs create system wide benefits – e.g., low flow fixtures and efficient irrigation system rebates benefit the whole system by conserving water; and rebates to remove softeners reduces system wide rate increases based on reducing additional salt (chloride loading) at the wastewater treatment plant).

II. PUBLIC COMMENT

Two people provided comments to the HAC just before the evaluation:

- Consider more than just on stakeholder group, more than just people who install softeners. There are other DIY ways to get less hard water. I don't have softeners because I do not want to deal with the additional salt and maintenance. I buy bottled water. How would rebate address DIY costs associated with getting bottled water? Keep that in mind.
- Consider the whole community and not just impacts to one stakeholder group. Any rate increase will be difficult on low and fixed income people, but this is a fast growing community and the needs of new residents need to be considered equally. New residents tend to be in the north and can afford less hard water via DIY systems and/or a rate increase for a central treatment option. New residents also have different expectations regarding water from the tap.

III. NEXT STEPS & MESSAGE TO THE BOARD

Jody Erikson, JSE Associates, presented a proposed schedule and next steps based on her conversation with the HAC members following the last meeting. In brief, the proposed next steps and schedule include (*see Appendix E for the full proposal discussed*):

- Conduct a pilot study on the pellet option to ascertain the chemical composition of the pellets – are there hazardous materials?
- Shift the HAC schedule to allow time to complete the pilot study; shift the schedule 6-8 months forward for the HAC meeting to develop a draft recommendation for public input, the public meetings, and the final HAC meeting for agreement on a recommendation.

Discussion:

- It is important to get more information before the HAC can confidently recommend a way to address water hardness; “we need the pilot study”.
- *Question:* Is there money in this year's budget to fund the pilot study this year?
Answer: The Board may decide to find the funds to complete the study this year.
- *Question:* What is the scope of the pilot study?
Answer: The scope is not completed yet, but the expectation is it will include installing/running a pilot treatment system (engineering, hardware, and testing). The study will test how SACWSD source water interacts with a pellet system – the chemicals and materials in the water and what is left once it is concentrated into pellets. The study would also include some development of initial design/engineering plans for a District wide process.
- This system could be multiple membranes that remove different materials, not just hardness chemicals.

- *Question:* If the pellet pilot study shows hazardous materials in the concentrated pellets the HAC will need a second option; and the backup options should be tested. Could this be done?

Answer: The other central treatment options are more common in the United States and have much more data (elements are well known), including data on systems used in water districts near SACWSD with similar source water. The pellet system is used more in Europe, but newer in the United States therefore there are more unknowns.

- Timing or months needed before the HAC can get more information depends on how SACWSD hires an engineer to conduct the study. There are two options for hiring a contractor which affect the schedule:
 - Use a known engineering firm that SACWSD has worked with before and has already submitted bid. The firm could start in July and complete the study and give data to the HAC in late 2017.
 - Reach out further, by publishing a request for proposal (RFP). This option requires time to develop the RFP, evaluate bids, and interview finalists. SACWSD would award the contract in early fall, study completed and data to the HAC early 2018.
- *Question:* Could the pilot study include a taste test, even though taste is subjective would we taste the pilot study water? There are professional tasting models that could be used since taste is subjective.

Answer: The study is expected to only create/test the pellets and not take the water through all steps to a home's tap. The pilot study water would require additional treatment steps before it would be tap-ready/taste-ready (e.g., disinfectants and softeners); but it may be possible.

AGREEMENTS:

- The HAC wants to see the results of pilot study on the pellet option before they can build agreement on a recommendation and will stay committed to reconvening once the study is complete; wants a shift their schedule (*see Appendix E*).
- Agreed on a letter/message to the SACWSD Board requesting the shift in schedule and pilot study (*see Appendix F for the agreed upon message*).

APPENDIX A: Attendance

HAC Members Present:

- Brett Burrough, Business-North
- Danny Thomas, Resident-South
- Elaine Hassinger, Tri-County
- Glenn Murray, Resident-North
- Jessica Monahan, Resident-North
- Jim Jones, District General Manager
- Pamela Sprattler, Resident-South
- Robyn Jeffords, Resident-North
- Steven Erwin, Resident-North
- Tillie Villarreal, Resident-South
- Tina Dorf, Business
- William Frew, Business-North

Observers:

- Betty Thomas, Resident
- Brendan Binns, Resident-South
- Jennie Loveridge, Resident-Central

Staff & Consultants:

- Blair Corning, SACWSD, Environmental Program Manager
- Amanda Thomas, SACWSD, Environmental Communication Specialist
- Byron Jefferson, SACWSD, Administrative Services Manager
- Jody Erikson, JSE Associates (Facilitator)

APPENDIX B: Agenda

SACWSD – Water Hardness Advisory Committee (HAC) June 6, 2017

District Office, 6595 E 70th Ave, Commerce City, CO 80022

Objectives:

- Evaluate options using criteria – how are the criteria balanced for each option
- Approve HAC process moving forward

6:00 Dinner

6:15 Welcome & Introductions

6:20 Evaluate Options – How do the HAC criteria balance per option

- **Review evaluation tool** – as a group evaluate “do nothing” option
- **Individual evaluation** – individually evaluate the other options
- **Group evaluation** – build a group evaluation

7:45 Public Comment – brief public comments on addressing hardness and agenda items

8:00 Next Steps

- Approve process going forward - Process shift suggestion based on facilitator interviews with HAC members
- Next meeting: ???

8:30 Adjourn

APPENDIX C: Evaluation Tool

How does each Option Balances HAC Criteria

- 1 - Empty = Poor, does not meet the criteria enough to be worth it
- 2 - Half full = Ok, acceptably meets the criteria
- 3 - Full = Good, meets the criteria better than "ok"
- ? - Add "?" if the evaluation is uncertain

The HAC will evaluate the "do nothing" option as a group. Then individually evaluate other options. Finally, HAC will develop a group evaluation for as many options as possible in the meeting.

<i>Criteria/Option</i>	<i>Do nothing</i>	<i>RO</i>	<i>Pellet</i>	<i>Ion</i>	<i>Lime Soda</i>	<i>Rebate</i>
Addresses hardness	<input type="radio"/>					
Manages costs to rate payers	<input type="radio"/>					
Minimizes environmental impacts (and disposal costs)	<input type="radio"/>					
Equitable – good for all (system wide benefit), fair	<input type="radio"/>					
Improves taste	<input type="radio"/>					
Minimizes negative impacts to skin	<input type="radio"/>					
Minimized DIY costs	<input type="radio"/>					
Sustainable	<input type="radio"/>					
Explainable	<input type="radio"/>					
Legal	<input type="radio"/>					

APPENDIX D: Evaluation Comparison of 3 Options Evaluated

HAC used a three-point/bubble evaluation tool:

- - 1 - Empty = Poor, does not meet the criteria enough to be worth it
- ◐ - 2 - Half full = Ok, acceptably meets the criteria
- - 3 - Full = Good, meets the criteria better than “ok”
- ? - Used it there were too many unknowns or “it depends on results of study”
- +/- - Used to show if the group was half but leaned toward more positive half or more negative half evaluation

NOTE: This is a generalized average and not an exact reflection of electronic polling or agreement on a single group evaluation.

HAC Criteria	OPTION: DO NOTHING	OPTION: PELLET	OPTION: REBATE
Addresses hardness	○	●	◐-
Manages costs to rate payers	◐+	◐?	◐-
Minimizes environmental impacts (and disposal costs)	◐-	◐?	○
Equitable – good for all (system wide benefit), fair	◐-	●	◐-
Improves taste	○	◐?	◐
Minimizes negative impacts to skin	○	◐+	◐-
Minimized DIY costs	◐	◐+	◐+
Sustainable	◐	◐	◐-
Explainable	●	◐+	◐
Legal	●	◐+?	○

APPENDIX E: HAC Agreed on the Following Proposed Schedule Shift

#	Date	Purpose
1	March 7, 2017 6:00-8:30pm	<ul style="list-style-type: none"> • Build agreement on Committee operating protocols • Identify key interests, needs, issues, concerns about any solution • Provide grounding data – District 101 • Provide data - alternatives to address water hardness • Gather additional data needs
2	April 4, 2017 6:00-8:30	<ul style="list-style-type: none"> • Provide additional data requested • Further data on impacts of different options • Discussion of pros and cons of options
3	May 2, 2017 6:00-8:30	<ul style="list-style-type: none"> • Evaluation discussion • Build initial agreement on a recommendation
4	June 6, 2017 6:00-8:30	<ul style="list-style-type: none"> • Evaluate – how is HAC criteria balanced per option • Next steps – process
<p><i>Schedule Revised June 6, 2017:</i> <i>The HAC needs more information about the viability of pellets, therefore:</i></p> <ul style="list-style-type: none"> - <i>Schedule shifted – last two meetings and public meetings moved to allow time to gather data</i> - <i>Additional meetings added to review the plan for study, be kept informed and prepare for a public meetings (agree to a draft recommendation for public input)</i> 		
5 +	??July - Sept??	<ul style="list-style-type: none"> • Review where SACWSD is on bidding/awarding process for the pilot study work • ? Review pilot study plan • ? Review contractors?
<p><i>ACTION: Pilot study conducted</i></p>		
6+	??Nov - Dec 2017??	<ul style="list-style-type: none"> • Status update from SACWSD on the pilot study or other related hardness resolution issues
7 +	??Jan- Mar 2018	<ul style="list-style-type: none"> • Build agreement on a draft recommendation for public comment
<p><i>ACTION: Public Meetings (2) – gather input for HAC final decision ?? the month after meeting 7+</i></p>		
8	?? a month after public meetings	<ul style="list-style-type: none"> • Review public comments • Build final agreement on a recommendation for the Board

APPENDIX F: HAC Agreed upon Message to the SACWSD BOARD

TO: SACWSD Board
FROM: SACWSD Hardness Advisory Committee (HAC)
DATE: June 6, 2017
RE: Status of HAC and Request

SACWSD Board:

The SACWSD HAC has been meeting for the last four months to develop criteria and evaluate options to address water hardness (see below). We have reached a point where we need more information in order to recommend how SACWSD should address water hardness. Pellet softening seems to best balance the HAC criteria, but there is a potential that it has more dramatic impacts, both environmental and cost, therefore we need more information. Without this information, we are uncomfortable requesting public input; we would not want to give the impression that one option works only to receive information stating that it will not be a good balance.

HAC Criteria:

- Addresses hardness in water
- Manages costs to rate payers
- Minimizes environmental impacts
- Is equitable – good for all and fair
- Improves taste
- Minimizes negative impacts to skin
- Minimizes DIY costs
- Sustainable
- Explainable
- Legal

Options evaluated:

- Reverse Osmosis
- Pellet
- Ion Exchange
- Lime Soda
- Rebate Program (\$1500 or \$250)
- Do Nothing

We, the HAC, request:

- Shifting the HAC schedule to gather necessary information. We presume that the schedule for the final HAC meetings and public meetings may need to be shifted by 6-10 months (or more) in order to gather the data needed to make an informed decision. We are committed to the HAC and will reconvene at that time to build agreement on a recommendation to address water hardness.
- SACWSD Board fund and conduct a pilot study on the pellet option. The study would ascertain whether there are greater environmental or cost impacts than currently known (e.g., TENORM). If TENORM is present at unacceptable levels, it would be a greater cost increase to rate-payers (increase in disposal costs for hazardous waste disposal) and environmental impacts. This information may change the HAC's evaluation of options.

Sincerely,

The SACWSD Hardness Advisory Committee

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- Brett Burrough, Business-North
- Danny Thomas, Resident-South
- Elaine Hassinger, Tri-County
- Glen Murray, Resident/Special
- Jack Hagaman, Business -South
- Jessica Monahan, Resident-North
- Jim Jones, District General Manager
- Kelly Tannenbaum, Resident-North
- Pam Sprattler, Resident-South
- Robyn Jeffords, Resident-North
- Steven Erwin, Resident-North
- Tillie Villarreal, Resident-South
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