Water Department

Water Commission
7:00 p.m. –November 7, 2016
Council Chambers
809 Center Street, Santa Cruz

Minutes of a Water Commission Meeting

Call to Order Chair Wadlow called the meeting to order at 7:01 p.m. in the City Council Chambers.

Please be advised that the November 7, 2016, Water Commission meeting was filmed and can be viewed online here.

Roll Call
Present: W. Wadlow (Chair), L. Wilshusen (Vice-Chair), D. Baskin, D. Engfer, D. Schwarm, A. Schiffrin, D. Stearns
Absent: None

Staff Present: R. Menard, Water Director; H. Luckenbach Deputy Director/Engineering Manager; A. Poncato, Administrative Assistant III.

Others: 5 members of the public.

Presentation: There were no presentations.

Statements of Disqualification: There were no statements of disqualification.

Oral Communications: There were no oral communications.

Announcements: There were no announcements.

Consent Agenda
1. City Council Actions Affecting Water
2. Approve the October 3, 2016, Water Commission Minutes

Commissioner Wilshusen moved item 1. City Council Actions Affecting Water of the Consent Agenda. Commissioner Schiffrin seconded.
VOICE VOTE: MOTION CARRIED
AYES: All.
NOES: None.
ABSENT: None.

Commissioner Wilshusen moved item 2. Approve the October 3, 2016, Water Commission Minutes of the Consent Agenda. Commissioner Schiffrin seconded.

VOICE VOTE:	MOTION CARRIED
AYES:	All.
NOES:	None.
ABSENT:	None.
ABSTAIN:	Commissioner Schwarm due to absence from the October 3, 2016, Water Commission meeting.

Items Removed from the Consent Agenda

No items were removed from the consent agenda.

General Business

3. Aquifer Storage and Recovery Workshop

Ms. Menard introduced Ms. Luckenbach who provided an overview of the WSAC recommendations related to winter water harvest and explained that the presentation tonight would focus on one of the options being pursued, Aquifer Storage and Recovery (ASR). She then introduced the three speakers for the workshop:

1. Mr. Robert C. Marks, P.G., C.Hg, Principal Hydrogeologist of Pueblo Water Resources, Inc.;
2. Mr. Ryan Bezzera, the City's Water Rights Attorney and a partner at Bartkiewicz, Kronick & Shanahan; and
3. Mr. Jonathan Lear, P.G., C.Hg, Senior Hydrogeologist at the Monterey Peninsula Water Management District (MPWMD) who each gave a presentation on different elements of ASR.

Robert C. Marks, Principal Hydrogeologist of Pueblo Water Resources

Mr. Marks' presentation focused on an overview of the analytical and testing work that is involved in planning for a potential ASR project and included a summary of the work he and Pueblo Water Resources are currently contracted to preview for the City to determine the feasibility of ASR as a water supply for the City. Following his presentation, Mr. Marks responded to questions.

Based on your experience, how much are we going to learn from the three test wells knowing that the project may be geographically bigger than those three locations?

- Generally speaking, what we look for in the pilot test is how does an aquifer unit respond hydraulically to injection and recovery operations, what happens to water levels in the surrounding area, and what are the water quality interactions. The findings of the test wells can be extrapolated to other areas of the basin provided that the hydrogeological conditions are similar. The collected data can also assist with making adjustments for site specific conditions.

Have you already identified potential locations for the three test wells?

- Yes, but the final decision about pilot test well locations has not yet been made.

Is there a monetary cost to the other districts that are participating in the ASR testing the City is doing? If not, will there be a cost to other districts?

- No, water districts are not being asked for any financial contribution to this stage of the ASR analysis and testing work. However, if a utility makes one of its wells available as a test well for recharge, that utility would bear the operational cost of not being able to operate that well for water supply while the testing is occurring. If the City were to use another utility's production well as part of a pilot testing program, the City, and the utility would develop the agreements necessary to keep the well owner fully informed about the progress of the work and operating constraints for the well.

Do we have sufficient water flows to complete pilot testing this winter?

- Probably, but no pilot testing will be done this winter. Pilot testing would begin next winter following completion of Phase I work, assuming that the City is not experiencing drought conditions on its San Lorenzo River supply.

How do we test the rate and capacity of extraction of water from the wells?

- We can predict the rate and capacity of injection to an ASR well by what we know about extraction from existing production wells. Injection is half of estimated extraction and pilot testing is used to, among other things, confirm these predictions.

How can we tell if private wells are pumping out more water than they have in the past?

- In both the Santa Cruz Mid-County and Santa Margarita groundwater basins, a lot of effort has gone into developing groundwater models that will be used to test various assumptions about what is going on in each basin. Included in the model inputs are the pumping of all known private wells. Both modeling results and water level data from each aquifer will be actively monitored to determine if/how water use in the basin changes after any injection of surface water, but generally we don't expect to see a significant difference in the use levels of private well pumpers.

In regards to well site availability, is there a real estate constraint or do we have to wait for a design before we can determine if there is a real estate constraint?

- One of our tasks is to do a well sighting study and we will be looking at properties in all three service areas that meet the criteria for ASR wells. So, real estate may be a constraint but we do not know that yet.

How do you assess the hydrofracturing potential?

- ASR should not be confused with the intentional over pressurization of geologic formations that can result in fracking. ASR targets a different type of aquifer and uses much lower pressures.

- To project how injected water affects head pressure within an aquifer, we use an equation based on soil mechanics that relates the head pressure within the underlying aquifer to how deep the confining layer is below ground surface and uses a formula that takes into account those factors to develop what the head limitation is.

- The target aquifers for ASR in Santa Cruz are semi-confined to confined, meaning that they are overlain by low permeability (silts and clays) layers and are under some degree of pressure. The "Hydrofracturing Limits" criterion for per-well injection capacities takes into consideration that during active injection, the heads/pressures within the target aquifer must not be increased to such an extent that they exceed pressures that would create vertical cracks in the overlying confining layers through which injected water may flow upward into overlying units or to the ground surface ('daylighting'), which would represent a potential loss of stored water. ASR wells are conservatively designed to avoid any potential for hydrofracturing.

Can you clarify the difference between ASR and in lieu recharge?

- For in-lieu, the city would provide water to other districts so they can meet their demands while resting their wells. By doing this, the idea is that the City would ultimately have access to additional groundwater resources that could be used as the City's drought supply.
- For ASR, the city would be actively injecting water into the aquifer(s), building a reservoir of stored water that it would be able to access as its drought supply in the future.

Final Comments and Requests for Follow Up
None.

Ryan Bezzera, Water Rights Attorney from Bartkiewicz, Kronick & Shanahan

Mr. Bezzera's presentation provided an overview of the water rights and regulatory permitting issues associated with ASR. Following his presentation, Mr. Bezzera responded to questions.

Is the geochemical analysis going to be used as the basis for the permit application to the State Water Resources Control Board?

- Yes and the general permit authorizing injection covers both pilot programs as well as permanent projects. The information we develop in Phase 1 of our study would be provided in a technical report as part of the application to the State to secure permits needed for Phase 2 injections.

Does the Sustainable Groundwater Management Act (SGMA) provide local groundwater sustainability agencies with the legal authority to require private wells to register and submit how much water they use?

- Yes and no. SGMA provides for and exemption for small water users – called de minimis users. De minimis users can use up to 2 acre feet of water a year (roughly 650,000 gallons) and cannot be required to meter their use. Larger users, such as agricultural users, can be required to meter and report on water use.

If the Utility decides to move forward with an ASR project and take water from the San Lorenzo River, would we need to submit an application for a new water rights permit?

- It depends. The main factor that would determine whether or not a new water right permit is needed would be whether more winter water was needed than the City currently has access to with its existing water rights and permits.

Are water agencies limited to seeking water rights for bodies of water that pass through their boundaries or can they look outside their boundaries for water?

- Water agencies are not limited to their geographical boundaries to obtain water rights.

If we want to store water in a space that is underneath someone's property, do we need to get rights from the surface owner?

- This has never been completely determined under California law but I would suspect that as long as you are not damaging their property then you probably don't need their permission.

Final Comments and Requests for Follow Up
None.

Jonathan Lear, Senior Hydrogeologist at the Monterey Peninsula Water Management District

Mr. Lear's presentation covered the Monterey Peninsula Water Management District's (MPWMD) ASR program and the experiences they have had with it. Following his presentation, Mr. Lear responded to questions.

What is the supply gap that MPWMD is trying to address?

- With the existing MPWMD ASR project and the proposed MPWMD recycled water project, the District still expects to have a supply gap that would be about 1,500-acre feet short of our needs. That gap would be filled by the proposed desal plant.

How was the public informed about the MPWMD ASR and desal project and what was the public's perception?

- The public was informed through the regularly scheduled MPWMD's Board of Directors meetings. The public embraced this project mainly because it was best for the environment and one of the least costly options.

How closely did the groundwater modeling used as you were planning your test well program correlate with the actual results you saw from your pilot testing?

- It was very close. Our model was within 3 % of observed water levels.

Final Comments and Requests for Follow Up

Keep in mind that the ASR program on the Monterey Peninsula is designed to create seasonal storage that is annually filled and depleted. The City's effort would be intended to provide longer term storage that might be filled over several years when water is available and then significantly drawn down when drought conditions occur.

Subcommittee/Advisory Body Oral Reports No items.

Director's Oral Report No action shall be taken on this item.

- Water supply situation is good.
- The next Water Commission meeting will include a quarterly Water Supply Augmentation Strategy report, a financial reserve policy update that we will be bringing to the City Council after the New Year and a draft 2017 work plan.

Adjournment Meeting adjourned at 10:17p.m. The next meeting of the Water Commission is scheduled for December 5, 2016, at 7:00 p.m. in Council Chambers.

Respectfully submitted,

Amy Poncato

Digitally signed by Amy Poncato
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Staff