CITY OF SANTA CRUZ
City Hall
809 Center Street
Santa Cruz, California 95060

Water Department

WATER COMMISSION

Meeting Minutes

October 02, 2017

7:00 P.M. GENERAL BUSINESS AND MATTERS OF PUBLIC INTEREST, COUNCIL CHAMBERS

The City of Santa Cruz does not discriminate against persons with disabilities. Out of consideration for people with chemical sensitivities, please attend the meeting fragrance free. Upon request, the agenda can be provided in a format to accommodate special needs. Additionally, if you wish to attend this public meeting and will require assistance such as an interpreter for American Sign Language, Spanish, or other special equipment, please call Water Administration at 831-420-5200 at least five days in advance so that arrangements can be made. The Cal-Relay system number: 1-800-735-2922.

APPEALS: Any person who believes that a final action of this advisory body has been taken in error may appeal that decision to the City Council. Appeals must be in writing, setting forth the nature of the action and the basis upon which the action is considered to be in error, and addressed to the City Council in care of the City Clerk.

Other - Appeals must be received by the City Clerk within ten (10) calendar days following the date of the action from which such appeal is being taken. An appeal must be accompanied by a fifty dollar ($50) filing fee.

Call to Order at 7:02 p.m.

Roll Call

Present:	L. Wilshusen (Chair), D. Engfer (Vice-Chair), D. Baskin, J. Mekis, D. Schwarm, W. Wadlow
Absent:	A. Schiffrin, with notification

Statements of Disqualification - Section 607 of the City Charter states that "... All members present at any meeting must vote unless disqualified, in which case the disqualification shall be publicly declared and a record thereof made."

The City of Santa Cruz has adopted a Conflict of Interest Code, and Section 8 of that Code states that no person shall make or participate in a governmental decision which he or she knows or has reason to know will have a reasonably foreseeable material financial effect distinguishable from its effect on the public generally.
There were no statements of disqualification.

Oral Communications - No action shall be taken on this item.
There were no oral communications.

Announcements - No action shall be taken on this item.
Administrative Assistant III, Amy Poncato, has accepted employment with the Scotts Valley Water District and this will be her last meeting as Water Commission secretary. Commissioners conveyed their appreciation for Ms. Poncato's service to the Water Commission.

Consent Agenda (Pages 1.1 – 7.10) Items on the consent agenda are considered to be routine in nature and will be acted upon in one motion. Specific items may be removed by members of the advisory body or public for separate consideration and discussion. Routine items that will be found on the consent agenda are City Council Items Affecting Water, Water Commission Minutes, Information Items, and Documents for Future Meetings, and Items initiated by members for Future Agendas. If one of these categories is not listed on the Consent Agenda then those items are not available for action.

1. City Council items affecting the Water Department

2. August 7, 2017, Water Commission Minutes

3. Water Department Glossary

Commissioner Baskin moved to approve the Consent Agenda. Commissioner Engfer seconded.
VOICE VOTE: MOTION CARRIED
AYES: All.
NOES: None.
ABSENT: A. Schiffrin.

Items Removed from the Consent Agenda

4. 4th Quarter FY 2017 Financial Report

- Can you tell us more about the approximately $9 million discrepancy between the adjusted budget amount for "service, supplies, and other" in the 3rd Quarter Financial Report and the 4th Quarter report. As staff was not available to respond, this item will come back for explanation in November.

Commissioner Engfer moved to accept the 4th Quarter Financial Report. Commissioner Schwarm seconded.
VOICE VOTE: MOTION CARRIED
AYES: All.
NOES: None.
ABSENT: A. Schiffrin.

5. Source Water Quality Monitoring Program Update

Do any of the anticipated changes to the Graham Hill Water Treatment Plant (GHWTP) have an impact on moving the estimated maximum total suspended solids (TSS) to meet current solids production limits and if it were to do that, would it be some value in showing another line so we can see what we might capture beneficially by those changes?

- We are looking at pushing that limit up as part of the concrete tanks replacement project. There is a lot of analytical work that needs to go into characterizing the nature of the solids produced during water treatment. We're working to develop what additional solids handling capacity or systems would make sense to include as part of future development. The data set we just collected makes it clear that our current approach to solids handling is an important constraint of the GHWTP.

Commissioner Baskin moved to accept the Source Water Quality Monitoring Program Update. Commissioner Engfer seconded.

VOICE VOTE: MOTION CARRIED
AYES: All.
NOES: None.
ABSENT: A. Schiffrin.

6. Update to the 2015 State of the Water System

Moved to November 6, 2017, Water Commission meeting.

7. Water Supply Augmentation Strategy, Quarterly Work Plan Update

How is information about meter accuracy operationalized? How do we use the information that we have?

- This information is part of our state mandated Distribution System Water Audit.

  In order to accurately predict distribution system losses, we need good data on the amount of water produced. The work described in the quarterly WSAS update focused on how we validated the accuracy of our production metering equipment, which is about 30 years old, and how we have established a protocol for continued testing of this critical equipment.

Do we make any reporting adjustments based on any of the accuracy data developed in this effort?

- We did not make a reporting adjustment because if you bought this meter off the shelf it would say it was accurate within 1% so inside of that we made no adjustments and we stated so in the audit.

In the discussion of the pipe-loop study on page 7.3 there is a reference to understanding the potential impacts of changing source water on water quality in areas served by Asbestos Cement (AC) pipes. What are the issues with this type of

pipe material?

- There is a standard for Asbestos in drinking water and it is based on fibers of a particular size or smaller. We don't have a problem meeting the Asbestos standard when we do the testing. Asbestos cement pipe was a pipe material that was used fairly extensively in certain development in the 1960's and early 1970's and then it went out of style, so we do have some in our system. Other systems that were developed during that time period will also have this type of pipe in their system.

Is that something we plan to replace those pipes over time?

- We are planning to replace all of our water mains over time, including AC cement pipe where it exists in our system.

Do we know how much AC pipe we have in our system?

- AC pipe makes up approximately 36% (106 miles) of the treated water distribution system. The pipe was installed starting in the 1960's and into the late 1970's. The Soquel Creek Water District also has a significant amount of AC pipe in their system and one objective of the pipe loop study is to confirm that the City water will not adversely affect the structure of the AC pipe through dissolution of cement fraction of the pipe walls.

What are the concerns with asbestos in drinking water?

- The Environmental Protection Agency (EPA) 1992 asbestos standard is based on concerns consumption of asbestos fibers greater than 10 micrometers in length increasing the occurrence of benign intestinal polyps. One issue that may increase the release of asbestos fibers to drinking water is the result of AC pipe being used in areas where there is a high water table. These conditions may cause the pipe to become spongy, which may result in the release of these asbestos fibers in the water supply.

Are we well within the standard?

- Yes.

<u>Final Comments</u>

- The chart on page 7.10 needs a title and the color scheme on the chart needs improvement to make it more readable.

Commissioner Baskin moved to accept the Water Supply Augmentation Strategy, Quarterly Work Plan Update. Commissioner Engfer seconded.

VOICE VOTE: MOTION CARRIED
AYES: All.
NOES: None.
ABSENT: A. Schiffrin.

General Business

8. Workshop on Water Supply Modeling and Aquifer Storage and Recovery with Gary Fiske (Gary Fiske and Associates Inc.) and Robert C. Marks (Pueblo Water Resources Inc.)

Ms. Luckenbach introduced Kevin Crossley and Gary Fiske, who provided an overview on water supply modeling and aquifer storage.

What happens if there is not enough water in the system after it's been through the Daily Dispatch Order (slide number 13 in the presentation)?

- If there is not enough water in the system after working through all the sources, then there is a water shortage and an unmet demand for that day. Daily shortages accumulate to an annual shortage number. In the model outputs, you can see how much water, under different hydrologic conditions at different times of the year, are unserved and what shortages we have.

Where does the Felton Diversion Dam fit into the Daily Dispatch Order or is that part of Loch Lomond because it diverts up to Loch Lomond?

- Right now the Felton Diversion diverts to Loch Lomond but looking at the new supply alternatives we are assuming it could divert directly from the Felton Diversion to the Graham Hill Water Treatment Plant to the virtual storage in a groundwater aquifer.

Where does it go in the Daily Dispatch Order?

- Currently it is not dispatched directly to meet demand. The model asks if there is room in Loch Lomond today. If yes, is the water needed downstream at Tait Street to support customer demand? If yes, then water can't be diverted at Felton. If there is excess water in the river that can be diverted and there is room in the reservoir and there is transmission capacity available to move the water from Felton to Loch Lomond, then Felton will divert water up Loch Lomond, which then makes it available to be dispatched to meet customer demand.

- Also, some scenarios being evaluated as part of the current modeling work include meeting in-lieu demand from Soquel Creek, Scotts Valley Water District and San Lorenzo Valley water districts. The way the Confluence model (Confluence) is looking at this is that as it goes through its Daily Dispatch Order every day, it looks at how much demand there is from our partnering agencies to see how much of that demand we can meet. Operationally, we still don't know whether or not any or all of these agencies would participate on a day to day basis, but for those scenarios that include in-lieu, we're evaluating and modeling how the system would operate in the event that they did participate.

The chart on page 25 of the presentation shows the same shortage for the 3 year fill historic and climate change scenarios but different results for the 7 year historic and climate change results. What is causing this difference?

- The flow patterns in the climate change data set are such that, with the 3-year fill cycle, the minimum shortage we can achieve is the same as with the historic. That is coincidental. Note that to achieve the same shortage in the 3-year fill period, more capacity to draw down the water is needed with climate change flows. In the 7-year fill period, with climate change flows, there is just less water to go around. Even with 7 years to fill you are still left with a shortage; but you can eliminate this shortage with historic flows.

Why was a 7-year fill period chosen?

- It was chosen because it was the shortest period of time in which you could make an in-lieu project work.

Then, the 7 year fill cycle time was based on the historical flows and not the climate change flows?

- Yes.

Has any of the Confluence modeling resulted in any change to the 1.2 billion gallons worst-case peak season shortfall developed by the WSAC?

- No.

What assumptions have you been using in the Confluence analysis about how far Loch Lomond can get drawn down? Is there a reserve in Loch Lomond? How big is it? Is there any difference between how the City has been managing the reservoir in recent years?

- The capacity of Loch Lomond is 2.8 billion gallons. Of those 2.8 billion gallons, 1 billion gallons of usable storage is held over in the event that there is something worse than the 1976-1977 drought. So, when Loch Lomond usable storage goes to zero, there is not really zero water in storage; rather there is a billion gallons held over.

Are you modeling the aquifer storage so that it can be drawn down to zero gallons?

- Yes, the model assumes we can exhaust all of what we put into the aquifer except for losses.

How much water would be returned to Santa Cruz from the Soquel Creek Water District under an in-lieu scenario?

- We have demand forecasts for neighboring districts for use in modeling in-lieu in the Confluence. Confluence assumes that once Santa Cruz demands are met, any water that remains can be used to meet in-lieu demand in other systems. Further Confluence assumes that for each gallon Santa Cruz can provide to neighboring districts, that is one less gallon the neighboring agencies would have normally taken that water from the aquifer. Finally Confluence assumes the City could ultimately take back 80% of the amount of water it

delivered to the districts via in-lieu when it needed it to help deal with a water shortage.

Does the groundwater model take into account recharge to groundwater from septic systems?

- Yes.

I understand that the Department is developing another climate change projection. What's involved in that, and who is working on it?

- Balance Hydrologics is working on producing an additional local flow set based on a revised global climate model that has been down-scaled to our region. When it is ready it will be used to model system performance in the same way that the existing climate change hydrology has been used.

What is the timeframe for the climate change model?

- We have not received a specific delivery date for the flow set however, we expect the data in the next couple of weeks.

So you don't have a sense of how different it will be?

- No.

Is the Department of Fish and Wildlife also working in different climate parameters and how they might affect fish flows releases?

- The structure of the agreements that we are working on is actually based on the flows in the system, so it is very adaptable to different climate realities.

Ms. Luckenbach then introduced Isidro Rivera and Robert Marks, who provided an overview on groundwater modeling and ongoing work on aquifer storage and recovery.

Since we are going to use these groundwater models to project performance going forward are we also putting climate change data in as we move forward?

- Yes. The groundwater modeling work is evaluating conditions under both historic and climate change weather scenarios. For the climate scenario, the WSAC work will be used in both the Mid-County and Santa Margarita models.

Will the new climate change scenario that is being developed by Balance Hydrologics be used as well?

- We will have to do a scope change to deal with that new climate scenarios.

Regarding water storage losses from groundwater to surface water in the Santa Margarita basin, are there any issues to be concerned about related to if or how increased groundwater flows to surface water might contribute to higher surface water flows and thus greater flooding during winter storms?

- No, generally when we talk about water storage losses, we are talking about water slowly weeping out of the ground, not the seemingly instantaneous rising of a stream during a storm event.

Do the preliminary groundwater model scenarios show significant enough additional contributions of groundwater to surface water such that they could potentially be beneficial for fish flows?

- The potential beneficiary streams of greater base flows from Santa Margarita groundwater are all tributaries to the San Lorenzo. Higher stream flows in these tributaries could greatly improve/expand dry season fish habitat in the upper basin and potentially improve stream flows system wide, which would benefit both water supply and fisheries.

Regarding the chart on page 32, if the increases in the pink (streams) and light blue (springs) are surface flows, does that mean that that flows leaving groundwater aren't contributing to keeping seawater at bay in the Santa Margarita basin?

- Seawater intrusion is not an issue in the Santa Margarita Basin.

Are we making assumptions about what kind of supplemental supply our partnering water districts might be doing?

- The current analysis does not include any assumptions about whether Soquel Creek or Scotts Valley water districts, for example might be pursuing a desal or recycled water project.

When do we start to analyze the impacts of various options on infrastructure costs and operating requirements?

- We'll be talking more about that in November.

When will we have a model for the Purisima basin?

- We should be getting results from the Mid-County groundwater model that are comparable to the Santa Margarita basin results in the next week or two.

What are the similarities and differences between the Santa Cruz ASR project and the Las Posas Basin ASR project?

- Staff from Pueblo had recently met with two hydrogeologists with knowledge of the Las Posas ASR Project design and operational history. Based on those discussions, a few key issues were identified with relevance to the City's ASR project:
    1. First and foremost, the Las Posas project was investigated and designed in the late 1980's/early 1990's, a time when the standards of practice for ASR projects were in relative early stages. Since that time, standards of practice for ASR have evolved significantly, which would directly benefit the City's ASR project development efforts.
    2. With regards to project design, there was a spatial "disconnect" between the locations in the Las Posas groundwater basin where In-Lieu recharge was occurring and the recovery pumping well field. This led to relatively inefficient "capture" of the water recharged via In-Lieu. A

similar phenomenon was observed in the initial groundwater modeling scenarios for the Santa Margarita Groundwater Basin, discussed earlier in the presentation.

3. With regards to project operations, there was a surprising lack of ongoing, rigorous monitoring of project performance during the multi-year recharge phase of the project. Should the City's ASR project become operational, PWR would develop and oversee a routine monitoring and reporting program that would track project performance on an ongoing basis and limit the potential for many of the problems experienced at the Las Posas project.

Subcommittee/Advisory Body Oral Reports - No action shall be taken on this item.

Santa Cruz Mid-County Groundwater Agency (www.midcountygroundwater.org)

- An advisory committee has been appointed to start the Groundwater Sustainability Plan development process. The committee will start the series of four planned orientation sessions, with the first one happening on Thursday, October 05, 2017. The sessions are open to the public.
- The orientation presentations will be video and audio recorded and they will be uploaded to the Mid-County Groundwater Agency website.
- Contracts have been drawn up for HydroMetrics, who will be responsible for technical support and Kearns and West who will assist with facilitation and process support for the Advisory Committee.
- This agency has until January of 2020 to submit its plan.
- The next Mid-County Groundwater Agency meeting is on November 16, 2017.

Santa Margarita Groundwater Agency (www.smgwa.org)

- Commissioner Engfer was appointed to be the City's representative on the Santa Margarita Groundwater Agency Board.
- A meeting of the board was held on August 25th.
- This agency has until January 2022 to submit their plan.
- The next meeting is on October 25, 2017.

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

- The water year, which ended on Saturday, September 30, 2017, was the wettest on record based on the cumulative discharge of the San Lorenzo River.
- Loch Lomond is only down 5% at this point.
- We are using new agenda software to assemble all agendas, which means in the future, similar functionality for accessing agendas and agenda reports as that available for City Council agendas will be available for Water Commission agendas and materials.

Adjournment - The Water Commission adjourned at 10:43 p.m.