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

WATER COMMISSION

Regular Meeting

August 2, 2021

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

COVID-19 ANNOUNCEMENT: This meeting will be held via teleconference ONLY.

In order to minimize exposure to COVID-19 and to comply with the social distancing suggestion, the Council Chambers will not be open to the public. The meeting may be viewed remotely, using the following sources:

- Online:https://ecm.cityofsantacruz.com/OnBaseAgendaOnline/Meetings/Search?dropid=4&mtids=124
- Zoom Live (no time delay): https://zoom.us/j/96963081657
- Facebook: https://www.facebook.com/SantaCruzWaterDepartment/?epa=SEARCH_BOX

PUBLIC COMMENT:
If you wish to comment during on items 1-4 during the meeting, please see information below:

- Call any of the numbers below. If one number is busy, try the next one. Keep trying until connected.
  +1 669 900 9128
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- Enter the meeting ID number: 969 6308 1657
- When prompted for a Participant ID, press #.
- Press *9 on your phone to "raise your hand" when the Chair calls for public comment.
  - It will be your turn to speak when the Chair unmutes you. You will hear an announcement that you have been unmuted. The timer will then be set to three minutes.
  - You may hang up once you have commented on your item of interest.
  - If you wish to speak on another item, two things may occur:
    1) If the number of callers waiting exceeds capacity, you will be disconnected and you will need to call back closer to when the item you wish to comment on will be heard, or
    2) You will be placed back in the queue and you should press *9 to "raise your hand" when you wish to comment on a new item.

NOTE: If you wish to view or listen to the meeting and don't wish to comment on an item, you can do so at any time via the Facebook link or over the phone or online via Zoom.

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

Roll Call

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.

Oral Communications

Announcements

Consent Agenda (Pages 1.1 – 3.4) 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, 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 Actions Affecting the Water Department (Page 1.1)

   Accept the City Council actions affecting the Water Department.

2. Water Commission Minutes from July 12, 2021 (Pages 2.1 – 2.6)

   Approve the July 12, 2021 Water Commission Minutes.

3. Graham Hill Water Treatment Plant Facility Improvements Project Progressive Design-Build Phase 1 Agreement (Pages 3.1 – 3.4)

   Receive information about Support staff's recommendation for City Council to authorize the Graham Hill Water Treatment Plant Facility Improvements Project Progressive Design-Build Phase 1 Agreement with the AECOM/WM Lyles Joint Venture.

Items Removed from the Consent Agenda

General Business

4. Water Supply Augmentation Strategy (WSAS) Quarterly Report (Pages 4.1 - 4.25)

   Receive an expanded update regarding the status of the various components of the Water Supply Augmentation Strategy and supporting studies and provide feedback.

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

5. Santa Cruz Mid-County Groundwater Agency

6. Santa Margarita Groundwater Agency

Director's Oral Report

Information Items

Adjournment

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WATER COMMISSION
INFORMATION REPORT

DATE: 7/20/2021

AGENDA OF: August 2, 2021

TO: Water Commission

FROM: Rosemary Menard, Water Director

SUBJECT: City Council Actions Affecting the Water Department

RECOMMENDATION: That the Water Commission accept the City Council actions affecting the Water Department.

BACKGROUND/DISCUSSION:

July 13, 2021 – City Council Dark

No agenda items to report.

July 27, 2021 – City Council Dark

No agenda items to report.

PROPOSED MOTION: Motion to accept the City Council actions affecting the Water Department.

ATTACHMENTS: None.

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Water Commission
7:00 p.m. – July 12, 2021
Council Chambers/Zoom Teleconference
809 Center Street, Santa Cruz

Summary of a Water Commission Meeting

Call to Order: 7:00 PM

Roll Call

Present: J. Burks (via Zoom), T. Burns (Via Zoom), D. Engfer (via Zoom), S. Ryan (Chair) (via Zoom), A. Páramo (via Zoom), W. Wadlow (Vice-Chair) (via Zoom)

Absent: D. Schwarm, with notification

Staff: R. Menard, Water Director (via Zoom); D. Baum, Water Chief Financial Officer (via Zoom); C. Coburn, Deputy Director/Operations Manager (via Zoom); M. Kaping, Management Analyst (via Zoom); H. Luckenbach, Deputy Director/Engineering Manager (via Zoom); S. Perez, Principal Planner (via Zoom); K. Fitzgerald, Administrative Assistant III (via Zoom)

Others: Two members of the public (via Zoom)

Presentation: None.

Statements of Disqualification: None.

Oral Communications: One member of the public spoke.

Announcements: None.

Consent Agenda

1. City Council Items Affecting the Water Department

2. Water Commission Minutes From May 3rd, 2021

4. Santa Cruz Water Rights Project: Draft Environmental Impact Report Release

Commissioner Engfer pulled Item 3 for further discussion.

Commissioner Wadlow moved the Consent Agenda as amended. Commissioner Burns seconded.

One public comment was received.

VOICE VOTE: MOTION CARRIED

AYES: All
NOES: None
ABSTAIN: None

Items Pulled from the Consent Agenda

3. FY 21 3rd Quarter Unaudited Financial Report

What are the terms of the line of credit that was approved by the City Council on June 8th?

- The line of credit agreement was completed on June 15th with Bank of America for $50 million. The interest rate is based on the London Interbank Offered Rate (LIBOR) with a minimum of 10 basis points plus a spread of 50 basis points for an overall rate of 0.6%.

Commissioners suggested that staff include a ledger of draws and reimbursements for the Line of Credit on future quarterly reports.

Mr. Baum responded that staff already maintain an internal ledger that can be incorporated into future quarterly financial reports.

On page 3.3, what account does the term "Reserve" refer to?

- This term is referring to the Capital Investment Program (CIP) management reserve account.

Why was River Bank Filtration moved from Water Supply Augmentation to Surface Water Treatment, as mentioned on page 3.3?

- The River Bank Filtration project is now focused primarily on improving the water quality around the Tait wells area which does not add additional water supply so it made more sense to categorize it as such.

No public comments were received.

Commissioner Engfer moved the staff recommendation on Item 3. Commissioner Wadlow seconded.

VOICE VOTE: MOTION CARRIED
AYES: All
NOES: None
ABSTAIN: None

General Business

5. Water Rate Structures – Feedback from Single-Family Residence Customer Panels on Rate Structure Approaches

Ms. Menard introduced Ms. Melissa Elliott (Raftelis) and Sanjay Gaur for the presentation and discussion of the feedback from the single-family residential customer panels on rate structure approaches and water rate alternatives.

In regards to the panel members' discussion of financial stability with fixed rates, how does having fixed rates versus variable rates affect interest rates on bonds?

- Ms. Elliott responded that panel members discussed the relationship between the utility's financial stability and the predictable revenue fixed rates can bring, and the assumption that customers would be more inclined to pay if fixed charges were on the property tax roll.
- Mr. Gaur responded that credit rating agencies would likely favor a change in the way the fixed charges are collected if they were moved to the being on the property tax roll because if a customer does not pay their property tax then a lien can be enforced on the property, which ultimately results in payments being made.

Was the number of participants typical for this type of panel?

- Ms. Elliott responded that panels were more about gaining qualitative versus quantitative data and that having 12-15 participants between the two panels, provided more qualitative responses and feedback that will be useful when communicating any rate structure changes to customers.

Can staff elaborate on planned communication efforts?

- Ms. Elliott responded that part of Raftelis'work with the City is to develop a communication plan with public outreach strategies on informing customers of rate structure changes.

Can staff provide more insights on the panel participants' reactions to having the Infrastructure Reinvestment Fee (IRF) on the property tax roll?

- Ms. Elliott responded that panelists were provided several examples which showed that a customer's monthly water bill would be lower because the IRF would be on the property tax roll, however, they felt that that approach lacked transparency because it was unclear to them how much their property tax bills would increase.
- Additionally, the panelists were asked whether they would utilize the rate calculator tool, currently available since the 2016 rate changes, and most responded that either yes they would use it or yes that they may use it but that its availability is a nice thing to have regardless.

What types of residents were represented in the customer panels?

- Ms. Elliott responded that the panels were mostly comprised of single-family as well as a few multi-family residential occupants, it was unknown whether they were renters or property owners, and to her knowledge, no landlords participated in either panel session.

Can staff elaborate more on the panelists' reactions to water rates increasing more for low water users than for higher water users with a fixed IRF charge?

- Ms. Elliott responded that panelists were not income qualified so not much can be said on that. However, they were asked questions about affordability and several residents had stated that they believed their water bills were too low, but none were forthcoming on whether they were struggling to pay their bills. Ms. Elliott also noted that there are always challenges with increasing fixed charges because low-volume users do usually see higher increases in their bills.

Ms. Menard commented that while it is true that customers will continue to see IRF charges increase over five years, this is a major potential messaging area in terms of the communication strategy because it is an opportunity to convey to customers how much they will benefit from the long-term system reliability that their funds are being used to reinvest in.

One public comment was received.

Ms. Elliott responded to questions on how that the irrigation and commercial panel participants were selected. Most of these were selected because they are were some of the most common entities that work with the Customer Service section on bill issues and other concerns. For the residential panels, City Council members were asked to help recruit participants as well as previous residents who had previously volunteered to help research residential issues. To qualify for the panel, participants had to be current residential customers.

6. Future Water Rate Options Using Three Water Rate Structures

Ms. Menard introduced Mr. Sanjay Gaur for the presentation and discussion of Future Water Rate Options Using Three Water Rate Structures.

On slide 20 of the presentation, please explain why the cost of service adjustment bounces between 6.9% and 18.3%?

- Mr. Gaur responded that the financial plan on this slide is taking into account the total cash flow needs of the utility which varies by fiscal year and includes costs such as debt issuance and meeting reserves requirements as well as spending on capital projects. As the CIP isn't flat during the five-year rate period being planned for, the annual revenue requirements aren't flat either.

Does the uniform commodity approach to the IRF, which could have the lowest impacts on customers who are tenants, make it easier to finance CIP financing?

- Spreading the cost of the IRF fee equally across every unit of water sold using the uniform commodity approach is a more predictable way to collect revenue than collecting it via tiered rates for single and multi-family and irrigation customers. Bond buyers and bond holders and credit rating agencies will generally be more favorably inclined toward revenue-generating approaches that are more predictable than to those that are less predictable.

In the staff report for this item, Commissioners were specifically asked to provide feedback to staff and Raftelis about which of the options presented would more effectively achieve the water pricing objectives prioritized by the Commission and the City Council which are:

1. Ensures water for essential use is affordable to all customers.
2. Maintains transparency and equity for capital and water reliability needs.
3. Provides sufficient revenues to meet operating, capital, and customer service level needs.

Commissioners provided feedback in the first round of inputs from individual customers and then worked together to see if they could reach a consensus about a recommendation. Initial preferences included the following:

- One Commissioner preferred the IRF on Uniform Commodity Charge but also supports the IRF on Tiered Commodity Charge.
- One Commissioner preferred the IRF on Ready to Serve (RTS) Charge but also supports the IRF on Tiered Commodity Charge.
- One Commissioner preferred the IRF on Tiered Commodity Charge but would also support further looking into the IRF on Ready to Serve (RTS) Charge.
- One Commissioner preferred the IRF on Tiered Commodity Charge.
- One Commissioner preferred the IRF on Tiered Commodity Charge.

- One Commissioner preferred the IRF on Tiered Commodity Charge.

Can staff clarify that the only alternative that would be on the property tax roll is the IRF on Ready to Serve (RTS) Charge?

- Yes, that is correct.

One public comment was received.

Following Commissioners' initial input further discussion took place and ultimately, Commissioner Wadlow moved to express the Water Commission's preferred rate alternative of the Infrastructure Reinvestment Fee (IRF) on the Tiered Commodity Charge and to direct staff to seek out options for smoothing out proposed rate increases that are developed under this rate structure. Commissioner Engfer seconded.

VOICE VOTE: MOTION CARRIED
AYES: All
NOES: None
ABSTAIN: None

7. State and Federal Initiatives for Low Income Water Rate Assistance Programs

Ms. Menard discussed upcoming state and federal initiatives for low-income water rate assistance programs.

Are there any active efforts at the federal level to establish a permanent safety net for those customers who are having difficulties paying their utility bills?

- Yes. A few months ago, the Senate Environmental and Public Works Committee passed a piece of legislation that had a provision for a pilot program that would assess how such a program could be run and how such a program could allow for multi-family residentials who are in master metered areas to be included. The other piece of legislation on the House of Representatives side, also referenced in Attachment 1 of the agenda packet, is H.R 3293 which is about developing and funding long-term water and wastewater rate payer's assistance program. Additional information on a state proposal, SB 222, is in the staff report.

How does the current number of accounts that are in arrears compare to what was typically seen before the COVID-19 pandemic?

- Data analyses in the early part of the pandemic indicated that unpaid account balances at 90+ days were running at about the same level as had been the case historically, but over time it does appear that there has been at least a slight uptick both the number of past due accounts and the amounts that are owing. It should also be noted that of the $1.1 million outstanding in water, wastewater and refuse, approximately two-thirds of that amount is for water and wastewater charges.

One public comment was received.

Ms. Menard clarified that the list of 744 accounts in arrears includes inside-city and outside-city customers.

Subcommittee/Advisory Body Oral Reports

8. Santa Cruz Mid-County Groundwater Agency (MGA)
Ms. Menard reported the MGA met on June 17th and discussed next year's budget and changes to bylaws and the Joint Powers Agreement (JPA). Ms. Menard will be taking the modified JPA to City Council for its approval on August 10th. The next MGA meeting will be held on September 9th.

9. Santa Margarita Groundwater Agency (SMGWA)
Commissioner Engfer reported that the SMGWA met on June 24th and continues to review the draft Groundwater Sustainability Plan (GSP). The final review of the draft GSP will be during the next meeting on July 22nd and then it will be released for public comment shortly thereafter.

The SMGWA will be hosting a family-friendly public outreach event at Sky Park in Scotts Valley on July 31st from 10:00 am – 12:00 pm.

Also, SMWGA will have informational booths at the Scotts Valley Farmer's Market on July 17th and the Classic Car Show on July 24nd.

Director's Oral Report: Ms. Menard reported that the next two Water Commission meetings are scheduled on August 2nd and August 23rd and that there will be no meeting in September. The current Loch Lomond Reservoir is at 67.1% capacity which equals approximately 1.9 billion gallons in storage.

Adjournment Meeting adjourned at 9:55 PM.

WATER COMMISSION
INFORMATION REPORT

DATE: 08/02/2021

AGENDA OF: August 2, 2021

TO: Water Commission

FROM: Matt Zeman, Engineering Associate

SUBJECT: Graham Hill Water Treatment Plant Facility Improvements Project Progressive Design-Build Phase 1 Agreement

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RECOMMENDATION: Receive information about staff's recommendation for City Council to authorize the Graham Hill Water Treatment Plant Facility Improvements Project Progressive Design-Build Phase 1 Agreement with the AECOM/WM Lyles Joint Venture.

BACKGROUND: This item is a follow-up to the May 3, 2021 Water Commission item, Briefing on Graham Hill Water Treatment Plant Facility Improvements Project, and describes staff's recommendation to City Council to enter in to an agreement with AECOM/WM Lyles Joint Venture for the Graham Hill Water Treatment Plant Facility Improvements Project Progressive Design Build Phase 1 Agreement.

Major projects of the Water Department's capital investment program are located at the Graham Hill Water Treatment Plant (GHWTP). Recent and ongoing projects include significant repairs and improvements to the flocculation, sedimentation and filtration basins, and replacement of three of the four concrete tanks. Simultaneous with these repair and replacement projects, staff has been developing the Facility Improvements Project (FIP). The FIP has been developed following a comprehensive evaluation of the facility, including the recent improvements, and focused on identifying the most cost-effective process and structural improvements to meet water treatment objectives and improve the overall reliability and resiliency of the plant.

At the May 3rd Water Commission meeting staff presented an in-depth summary of all capital projects at the GHWTP including the recent change to the City Charter allowing for the use of alternative project delivery for City capital projects, and status of the multi-year development of the FIP including pilot testing, process selection, environmental evaluation and financing considerations. This item provides a more-abbreviated staff report aimed specifically at the agreement with the selected Progressive Design-Build (PDB) team.

DISCUSSION: The FIP will be implemented using a PDB model, the first application of this process by the City. Staff previously shared the benefits of this project delivery model specific to the FIP, with perhaps the most important benefit being the inclusion of the contractor early in the design. The GHWTP is the only treatment plant for the City and must be able to treat water while under construction which means that the contractor will be providing input and collaboration with construction sequencing and risks with the designer.

The PDB delivery contractor selection model follows a competitive request for proposals process and provides for an integrated design and construction team to be intimately involved during the three-year Phase 1 design stage of this project, anticipating and mitigating the complex issues related to reconstructing the treatment plant while it remains in operation and developing the best process and site layout to meet the current and future needs of the City. Once the design and environmental review are complete, a guaranteed maximum construction cost proposal will be developed by the design-builder, negotiated with the project team, and then the Phase 2 construction plan and schedule will be presented to the Water Commission and the City Council will be asked to approve the contract. The FIP project schedule overview is shown below.

- Completed 10% Design: June 2020
- Released Request for Qualifications: July 2020
- Released Request for Proposals from short-listed firms: December 2020
- Award Notification to Progressive Design-Builder: May 2021

Staff evaluated proposals from three pre-qualified design-build entities

- Walsh Construction/Carollo Engineers
- AECOM/WM Lyles Joint Venture
- Kiewit Infrastructure West/Brown and Caldwell.

The proposals were evaluated and scored by a team of City and HDR capital improvement program management staff for the design-builders' overall qualifications and experience (including the financial strength of their companies), their technical approach to the various aspects of the project, their management approach to this long and complicated project, their performance in the interview with the project team, and their fee and rate proposal.

The final ranking follows.

Design Build Entity	**Rank**
AECOM/ WM Lyles Joint Venture	1
Kiewit/ Brown and Caldwell	2
Walsh/Carollo	3

After rankings were announced, negotiations began with the top-ranked AECOM/WM Lyles Joint Venture team to discuss final adjustments to the project management structure, ensure any previously-unidentified project scope is included in the Phase 1 design contract, and to agree upon final contract language, terms, and conditions.

The major Scope of Work for Phase 1 Services includes:

- Project Management
- Technical Workshops
- Background Document Review
- Field investigations, Surveying, Mapping, Reports
- Cost Modeling, Scheduling, and Constructability Reviews
- Permit Acquisition and Support
- Public Outreach Support
- Basis of Design Report, 30%, 60%, 90% and 100% Design Submittals
- Pilot Testing or Lab Testing
- Construction Sequencing Plan
- Development of the Guaranteed Maximum Price

Future milestones include:

- City Council authorization to award contract to AECOM/WM Lyles Joint Venture: August 10, 2021
- Design: 2021 – 2023
    - Basis of Design Report: August 2022
    - 30% Design: February 2023
    - 60% Design: August 2023
    - 90% Design: November 2023
    - 100% Design: January 2024
- Draft Environmental Impact Report: July 2023
- City Council Certification of Final EIR and approval of the project: March 2024
- City Council Approval of the Guaranteed Maximum Price (GMP) and Award of Phase 2 Contract: August 2024 (Note that if the GMP cannot be negotiated the City can bid Phase 2 through a different procurement process.)
- Construction: 2024 – 2028

*These dates are based on City Council approval of Phase 1 in August 2021.

With respect to financing, staff prepared a Letter of Interest (LOI) to apply for a United States Environmental Protection Agency's (EPA) Water Infrastructure and Innovation Act (WIFIA) loan. The LOI was submitted on July 23rd, 2021 and if selected, the application process will start in October. A WIFIA loan will provide low interest funding with favorable terms for 49% of the project. For the remaining funding, the City Council authorized the Water Department to apply for a Drinking Water State Revolving Fund (DWSRF) loan on December 8, 2020. The general information package for this project's loan application will be submitted to the State Water Resource Control Board after the WIFIA LOI is submitted.

FISCAL IMPACT: The cost of GHWTP FIP PDB Agreement Phase 1 Services is $9,149,152.

PROPOSED MOTION: None needed.

REFERENCES:

1. May 3, 2021 Water Commission Staff Report, Briefing on Graham Hill Water Treatment Plant Facilities Improvements Project https://ecm.cityofsantacruz.com/OnBaseAgendaOnline/Documents/ViewDocument/Water_Commission_1611_Agenda_Packet_5_3_2021_7_00_00_PM.pdf?meetingId=1611&documentType=AgendaPacket&itemId=0&publishId=0&isSection=false

WATER COMMISSION
INFORMATION REPORT

DATE: 07/28/2021

AGENDA OF: August 2, 2021

TO: Water Commission

FROM: Heidi Luckenbach, Deputy Director/Engineering Manager

SUBJECT: Water Supply Augmentation Strategy (WSAS) Quarterly Report

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RECOMMENDATION: Receive an expanded update regarding the status of the various components of the Water Supply Augmentation Strategy and supporting studies and provide feedback.

BACKGROUND: Following the completion of the Water Supply Advisory Committee (WSAC) process, the City Council accepted the Final Report on Agreements and Recommendations that included a detailed Implementation Plan and Adaptive Management Strategy. The WSAC work was adopted as part of the 2015 Urban Water Management Plan and is currently referred to as the Water Supply Augmentation Strategy (WSAS) that includes an Implementation Work Plan (Work Plan).

On November 12, 2019, at a joint meeting between the Santa Cruz City Council and the Water Commission, staff reviewed progress to date on the Water Supply Augmentation Strategy including work performed on the water supply alternatives, climate change analyses, demand trends and a variety of other subject areas. In addition to information sharing, the outcome of that meeting was an adaptation to the work plan to integrate all new information and to take advantage of near-term "low-regrets opportunities for supply augmentation" and correspondingly to slightly modify the timeframe for decision making about additional supply source augmentation from 2020 to 2022.

Similarly, the August 2, 2021 presentation will include updates on water supply alternatives analyses, climate change, demand updates and gap analysis, groundwater modeling, groundwater sustainability agency status and progress, and financial opportunities. For reference, Attachment 1 compares the implementation schedules including the WSAC recommended work plan (2015), the City Council Adaption (2019), and the current (2021) schedule.

DISCUSSION: As per the WSAC Final Agreements and Recommendations, the Water Commission shall receive quarterly updates on the status of the various elements of the recommended plan. This is the 22nd quarterly update.

New Items/Highlights:

1. Aquifer Storage and Recovery
   Initial suite of groundwater modeling in the Mid-County Groundwater Basin is wrapping up with Pueblo Water Resources compiling a final memorandum. Cycle 3a of the pilot testing in Beltz Well 8 was completed. Cycle 3b is being contemplated for fall 2021. Ammonia study at Beltz 12 is ongoing.

2. Santa Cruz Water Rights Project
   The project's Draft Environmental Impact Report (EIR) was released for a 45 day public review period running from June 10, 2021 through July 26, 2021. Two virtual public meetings were held on July 14 and July 20, 2021. Six comments were received.

3. Vulnerability Study
   The various models that will support this work include a weather generator and a new supply model. An update will be provided at this Water Commission meeting by Dr. Casey Brown.

The Water Supply Augmentation Strategy (WSAS) consists of the following elements as defined by the WSAC:

- Element 0: Demand Management. Implementation of the Long Term Water Conservation Master Plan is foundational to the WSAS.
- Element 1: In Lieu. This alternative could include the sale of water to other agencies with or without the assumption of additional water back to the City during droughts.
- Element 2: Aquifer Storage and Recovery. Evaluations of both the Mid-County and Santa Margarita Groundwater Basins are being conducted.
- Element 3: Advanced Treated Recycled Water or Seawater Desalination.

Progress and status of the various WSAS-related work items are described here in detail.

ELEMENT 0: DEMAND MANAGEMENT

Overview: Element 0 of the City's Water Supply Augmentation Strategy consists of ongoing demand management activities. The primary goal of this element is to generate an additional 200 to 250 million gallons per year in demand reduction by year 2035 from expanded water conservation.

Summary: The Water Conservation section has been actively working on the following projects:

- Managing the allocation system during the Stage 1Water Shortage Warning including using Water Smart Software to store and update customer occupancy.
- Managing two temporary employees who were hired to assist with the drought response. Conducting analysis of customer allocations compared to customer usage and then performing outreach to customers who are over allocation.
- Responding to customer inquiries related to the water allocation system.

- Set up and maintaining a system for distributing free water conservation devices to customers, including an online request form located in Water Smart Software.
- Developing sections of the Urban Water Management Plan.
- Continuing to evaluate the new initiative of reimagining conservation programs.
- Ongoing work related to the water loss control program.

Next Steps: As discussed with the Water Commission at their March 2021 meeting, next steps will include ongoing discussions related to the future of water conservation.

ELEMENT 1: WATER TRANSFERS AND/OR WATER EXCHANGES

Overview: This work is considering the feasibility of sending excess City surface water to neighboring agencies for the purpose of passively recharging the groundwater basin(s). In-Lieu is now described as follows.

- Water Transfers: Selling treated surface water to neighboring agencies for the purpose of augmenting their own water supplies and possibly (passively) recharging the groundwater basin if less groundwater was used by the neighboring agencies.
- Water Exchanges: Negotiating an agreement whereby treated surface water provided to neighboring agencies would, by allowing the groundwater basins to recharge, provide additional groundwater back to the City during water supply shortages.

Summary: No new work has occurred on this element. With the terms of the first 5-year agreement sun-setting December 31, 2020, and the additional 5-year term beginning November 1, 2021, no water transfers have occurred.

Assuming water transfers could occur fall 2021, staff will coordinate with Soquel Creek Water District to establish objectives of this second round, focusing on operations of each system. As a reminder, some of the terms and conditions for providing water transfers include

- City has not declared a water emergency (beginning with Stage 2),
- Loch Lomond Reservoir is spilling or is projected to be full by April 1 of the water year the city would transfer water,
- The City is meeting regulatory flow requirements for aquatic resources.

Loch Lomond did not spill in Water Year 2021, and given the current Stage 1 Water Use Restrictions being imposed on City customers, and Water Year 2022 is currently projected to be a La Nina year, it is unclear if a transfer could in fact occur in the next winter.

Contract Update(s)

Purchase Order Agreement with the District for cost-sharing of Water Quality Sampling and Development of Water Quality Results Technical Memorandum (TM). No activity since August 2020.

- PO Opened: January 2017 (Phase 1 Bench-scale work)
- Project Partner(s): Soquel Creek Water District
- Engaged Stakeholders: None at this time.
- Original PO Amount: $60,000
- PO Change Order (Phase 2 Water Quality Monitoring/Pilot Test): $45,000

- Amount Spent: $76,349 (unchanged)
- Amount Remaining: $28,651

ELEMENT 2: AQUIFER STORAGE AND RECOVERY

Overview: Aquifer Storage and Recovery (ASR) is being evaluated as a form of actively recharging the groundwater basin(s). Work in this area includes the Mid-County Groundwater Basin (MCGB) and the Santa Margarita Groundwater Basin (SMGWB).

Summary: The City has several contracts with Pueblo Water Resources (Pueblo) to evaluate the feasibility of ASR. Phase I consists of higher-level feasibility work; i.e., site-specific injection capacity and geochemical analyses, groundwater modeling and development of a pilot test program; Phase II includes the pilot testing; and Phase III would be project implementation.

The groundwater modeling component of Phase I for the MCGB is nearing completion as Pueblo develops the Phase I ASR Groundwater Modeling Final Report. In July, Pueblo submitted a memo describing a technically feasible scenario that includes eight ASR wells in the portion of the MCGB that underlies the City's service area - the four existing Beltz wells and four new wells. The memo also describes the potential influence the Pure Water Soquel (PWS) project has to a City-led ASR project. See Attachment 2 for locations of City ASR wells as well as major components of the PWS project. Results are showing that in order for the City to extract what we have injected (less losses to the basin), a City-led ASR project operated with the PWS project would need to have several additional wells (10 instead of 8), over a larger area, operating at lower injection rates. Staff are reviewing the memo and confirming the operational feasibility of the proposed scenario, which will be finalized and incorporated into the Phase I ASR Groundwater Modeling Final Report summarizing all of the Phase I groundwater modeling scenarios and findings. (Attachment 3, Groundwater Modeling Scenario Summary.) Discussions about how to incorporate new demands and corresponding water shortages are ongoing, and future iterations of the groundwater model may be needed before and/or during project implementation to reflect these dynamic inputs to the model.

ASR pilot testing at the Beltz 8 site resumed late March continuing through June 2021 with ASR Cycle 3a. The Cycle 3 test program was split into Cycles 3a and 3b to generate the data needed to validate the geochemical evaluation to understand and risk associated with elevated arsenic concentrations appearing during Cycle 2. Beltz 8 ASR Cycle 3a consisted of two weeks of injection, four weeks of resting, and two weeks of extraction. Pueblo is currently evaluating the results and will provide a recommendation on next steps with respect to completing Cycle 3b. The Cycle 3b protocol consists of two weeks of injection, eight weeks of resting, and two weeks of extraction. Cycle 3b would further our understanding of the groundwater basin's response to ASR with respect to disinfection byproducts and arsenic, and allow us to understand any operational constraints since we anticipate being permitted to treat and serve this water through the distribution system. (It should be noted that preliminary results are very favorable, indicating that arsenic concentrations are below the maximum contaminant limit.) Cycle 3b, if pursued, would likely begin in January 2022.

In March, staff kicked off the Beltz 12 Ammonia Study to investigate the presence of ammonia in this well. Beltz 12 was put in to service in 2014 and has been seeing elevated levels of

ammonia as well as the intermittent presence of hydrogen sulfide both of which complicate the chlorination strategy at this well. Similar to Soquel Creek Water District's O'Neill Ranch Well, ammonia concentrations at Beltz 12 have increased over the last one-two years. The Ammonia Study is looking at impacts of various flow rates on ammonia and hydrogen sulfide concentrations and chlorine dosing. The City has contracted with Corona Environmental Consultants (Corona) to perform a bench-scale test to determine possible treatment options. Additionally, Pueblo is analyzing the pump test data to establish whether a relationship exists between groundwater pumping rates and ammonia concentration over time and any relationship with ASR. Current data indicate notable differences in water quality between the native groundwater and water extracted during ASR pilot testing indicating that ASR could benefit water quality at this well. Both analyses will provide staff with insight and recommendations on how to ensure consistent and reliable water quality to the City's customers.

Next Steps:

- Complete Phase I ASR Groundwater Modeling Final Report
- Make recommendation for completion of Cycle 3b pilot testing at Beltz 8
- Consider longer term pilot testing at Beltz 8 and 12, focused on seasonal injection and extraction (as opposed to current cycle-based protocol) to evaluate the assimilation of ASR in to the water system

Contract Update(s):

Consultant: Pueblo Water Resources (Pueblo) – Phase I

- Contract Signed: February 2016
- Project Partners: None at this time.
- Engaged Stakeholders: Soquel Creek Water District, County of Santa Cruz, Scotts Valley Water District, San Lorenzo Valley Water District
- Original Contract Amount: $446,370
- Contract Amendment No. 1: $377,615
- Contract Amendment No. 2: $35,000
- Contract Amendment No. 3: $193,390 (for IPR modeling but funded by Recycled water)
- Amount Spent: $780,642
- Amount Remaining: $271,733

Consultant: Pueblo Water Resources (Pueblo) – ASR Phase II – Beltz 12 ASR Pilot Test

- Contract Signed: October 2018
- Project Partners: None at this time.
- Engaged Stakeholders: Soquel Creek Water District, County of Santa Cruz
- Original Contract Amount: $458,085
- Amount Spent: $433,796 (unchanged)
- Amount Remaining: $24,289
- Status: Complete.

Consultant: Pueblo Water Resources (Pueblo) – ASR Phase II – Beltz 8 ASR Pilot Test

- Contract Signed: January 2020
- Project Partners: None at this time.
- Engaged Stakeholders: Soquel Creek Water District, County of Santa Cruz
- Original Contract Amount: $1,051,945

- Contract Amendment No. 1 (Increase in monitoring well depth): $47,172
- Contract Amendment No. 2: $133,104
- Amount Spent: $1,127,788
- Amount Remaining: $ 104,433
- Status: Cycle 3a pilot testing at Beltz 8 resumed March 2021.

ELEMENT 3: ADVANCED TREATED RECYCLED WATER AND DESALINATION

Overview: Advanced Treated Recycled Water and Desalination were included within the same Element with the intention that, following feasibility-level work, only one would proceed for further evaluation and preliminary design.

Summary:
Activity in the last quarter has focused in two areas. First, the 6" recycled water line is being designed as part of the PWS project at the City of Santa Cruz Wastewater Treatment Facility (WWTF). As discussed in Phase 1 of the Recycled Water Feasibility Study, future non-potable use could be largely accommodated with a 6" pipeline. This section of pipe will be installed with the PWS infrastructure so as not to have to disrupte the WWTF in the future.

The second activity is the consideration of possible regional opportunities in the Santa Margarita Groundwater Basin (SMGWB) as part of the work of the SMGWG Groundwater Sustainability Agency. With the draft Groundwater Sustainability Plan released on July 22, 2021, one alternative appearing in the plan is Purified Wastewater Recharge in the Scotts Valley Area of the Basin. This project considers treating existing secondary-treated effluent source water from the WWTF to tertiary standards at the PWS project site, and to purified standards at the Scotts Valley El Pueblo site, and injected into the Lompico aquifer in the Scotts Valley area. Outcomes of this project may include maintaining sustainable groundwater elevations, and providing a source of water supply back to the City.

Next Steps:
- Finalize design of the 6" recycled water pipeline through the contract with Soquel Creek's contractor, Black & Veatch.
- Continue the evaluation of a regional recycled water project in the SMGWB.
- Pursue groundwater modeling of several recycled water options in the Mid-County basin including partnerships with the PWS project, combination with a City ASR project, and/or a seawater intrusion barrier well in the City's portion of the MCGB.

Contract Update(s):
Consultant: Kennedy Jenks, Recycled Water Feasibility Study – Phase 2
- Contract Signed: December 20, 2019
- Project Partners: City Public Works
- Engaged Stakeholders: Scotts Valley Water District, Soquel Creek Water District, County of Santa Cruz
- Original Contract Amount: $260,000
- Contract Amendment No. 1: $496,205
- Contract Amendment No. 2: Administrative only

- Amount Spent: $347,304
- Amount Remaining: $408,901
- Schedule: Contract is seeing an ongoing ~ four-five month delay due to issues now related to groundwater modeling. Final RWFS Report: July 2021; Water Supply Augmentation Implementation Plan: December 2021 (will be updated).

OTHER

Water Supply Augmentation Implementation Plan
Dr. Casey Brown will provide an update on this work at the August 2nd, 2021 meeting. Below is a tentative schedule of this body of work.

August 2021
Status update of hydrologic and systems models
Status of weather generator

November 2021
Assess vulnerabilities of the current system

February 2022
Analyze adaptation options

May 2022
Establish trigger points

The following four topic areas will be updated in the next WSAC quarterly update.

Water System Model and Resilience Assessment: Develop a water system model and identify challenging climate and system demand scenarios.

Triple Bottom Line (TBL): Assessment of the relevant water supply enhancement options, applying relevant evaluation criteria.

Vulnerability Assessment and Adaption Planning: Integration of decision-scaling analysis of climate change and other critical uncertainties, and associated risks for future water supply reliability.

Water Supply Augmentation Implementation Plan (WSAIP): Develop an adaptive management-based plan based on the previous work.

Attachment 4 outlines staff's current thinking on the integration of the current studies and other influences to supply project identification and implementation.

Source Water Monitoring
No new report.

Santa Cruz Water Rights Project
This project involves the modification of existing City water rights to increase the flexibility of the water system by improving the City's ability to utilize surface water within existing allocations. In addition to improved flexibility, the success of this project is necessary to facilitate future water supply projects.

The State Water Resources Control Board noticed the City's change petitions on February 10, 2021, and accepted protests through March 12, 2021. Two protest letters and one letter of support were received during the public noticing. Letters of protest were received from the San Lorenzo Valley Water District (Nossaman LLP) and the San Andreas Land Conservancy (David Kossack), and a letter of support was received from California Department of Fish and Wildlife. Letters in response to the protests were prepared and sent on May 16, 2021. San Lorenzo Valley Water District replied on July 13, 2021.

As reported out in detail at the July 12, 2021 Water Commission meeting, the project's Draft EIR was released for a 45-day public review period running from June 10, 2021 through July 26, 2021. Two virtual public meetings were held during the public review period on July 14 and July 20, 2021. Six comment letters on the Draft EIR were received during the public comment period. California Department of Fish and Wildlife requested additional time, through August 9, to submit their comments on the Draft EIR. The Final EIR, addressing comments received on the Draft EIR, is expected to be completed in late 2021 or early 2022.

Outreach and Communication
WSAC-related outreach during this quarter has included the following.

- The WSAC Annual Report, included in the spring issue of the SCMU Review.
- Monthly email newsletters to WSAC email list.
- "Water Agencies are Prepared for Drought Challenges" op-ed, Santa Cruz Sentinel.
- Santa Cruz Weighs Its Water Options by Gary Griggs, Santa Cruz Sentinel.
- Guest on KSCO to discuss drought, stage 1 water restrictions, next steps.

Funding Considerations
The presentation will include a discussion on state and federal infrastructure initiatives and opportunities. See Attachment 5 for background information.

FISCAL IMPACT: None.

PROPOSED MOTION: This item is for information and discussion only. No motion is required.

ATTACHMENT(S):

1. Water Supply Augmentation Schedule Updates, 2015 – 2021
2. City Aquifer Storage and Recovery Project Locations
3. Groundwater Modeling Scenario Summary
4. Water Supply Augmentation Decision Process Next Steps
5. Summary: State and Federal Infrastructure Funding Initiatives and Opportunities

Attachment 1 - Water Supply Augmentation Schedule Updates, 2015 - 2021 (Rev July 2021)

		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
WSAC/2015	**In Lieu Transfers/Exchanges**	Agreements	Evaluate Larger Project(s)		Full Scale Agreements		Implement Transfers/Exchanges		□		■		
	Aquifer Storage & Recovery												
	Phase 1 Feasibility												
	Phase 2 Pilot Testing												
	Phase 3 Implementation								□	□			■
	Recycled Water /Desalination	Evaluation		Design/Permit/CEQA					Construct		■		
Council Approved Adaptation/2019	**In Lieu Transfers**	Five Year Pilot Transfer Project					Explore Additional Agreements		□				
	Aquifer Storage & Recovery - MCGB/Beltz Wells												
	Phase 1 Feasibility												
	Phase 2 Pilot Testing												
	Phase 3 Implementation								□				
	Aquifer Storage & Recovery - MCGB/New Wells												
	Phase 1 Feasibility												
	Phase 2 Pilot Testing												
	Phase 3 Implementation												■
	Aquifer Storage & Recovery - SMGB												
	Phase 1 Feasibility												
	Phase 2 Pilot Testing												
	Phase 3 Implementation												■
	Recycled Water												■
	Desalination - Not being Pursued												
Progress Report/2021	**In Lieu Transfers**	Five Year Pilot Transfer Project					Second-Five Year Pilot Transfer Project		□				
	Aquifer Storage & Recovery - MCGB/Beltz Wells												
	Phase 1 Feasibility												
	Phase 2 Pilot Testing												
	Phase 3 Implementation						Beltz 12*		□	Beltz 8			
	Aquifer Storage & Recovery - MCGB/New Wells												
	Phase 1 Feasibility												
	Phase 2 Pilot Testing												
	Phase 3 Implementation												□
	Aquifer Storage & Recovery - SMGB												
	Phase 1 Feasibility												
	Phase 2 Pilot Testing												
	Phase 3 Implementation												
	SMGB Groundwater Sustainability Plan							☼					
	Water Rights												
	EIR Certification												
	Water Rights Modifications												
	Aquifer Storage & Recovery Permitting												
	Vulnerability Analysis												
	Supply Model & Weather Generator Update												
	Vulnerabilities of Existing System												
	Adaptation Options												
	Identify Trigger Points												
	Recycled Water												
	Desalination - Not being Pursued												

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027

Notes:

GHWTP FIP completion date = 2027/28

Project descriptions and timeframes are generalized and approximated for simplicity

* Beltz 12 schedule assumes injecting in accordance with the City's pre-1914 water rights. Otherwise this action needs to lag Water Rights Project completion.

Key:

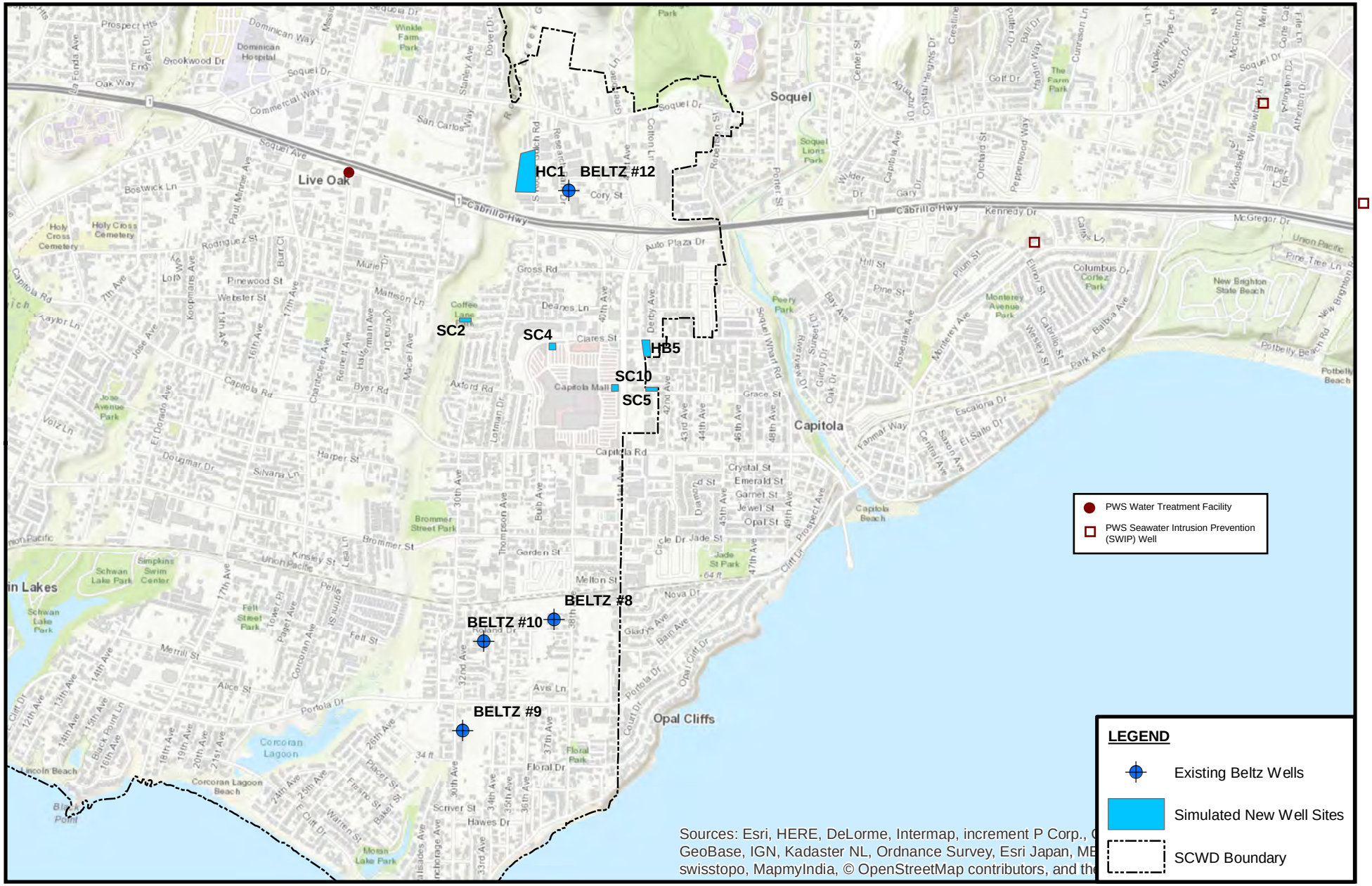
□ = Some water production potentially available

■ = Full water production goal is met

☼ = Milestone

MCGB = Mid-County Groundwater Basin

SMGWB = Santa Margarita Groundwater Basin



PUEBLO water resources

N
W E
S

1 inch = 2,000 feet

0 750 1,500 3,000 Feet

FIGURE 1. SIMULATED ASR WELL LOCATIONS - SCENARIO 11.2/8.6
Santa Cruz ASR Project - Phase 1 Feasibility Investigation
City of Santa Cruz

Attachment 3

15-0111
City of Santa Cruz
ASR Feasibility - Phase 1 Investigation

DRAFT - Groundwater Modeling Scenario Summary
Revised 7/28/2021

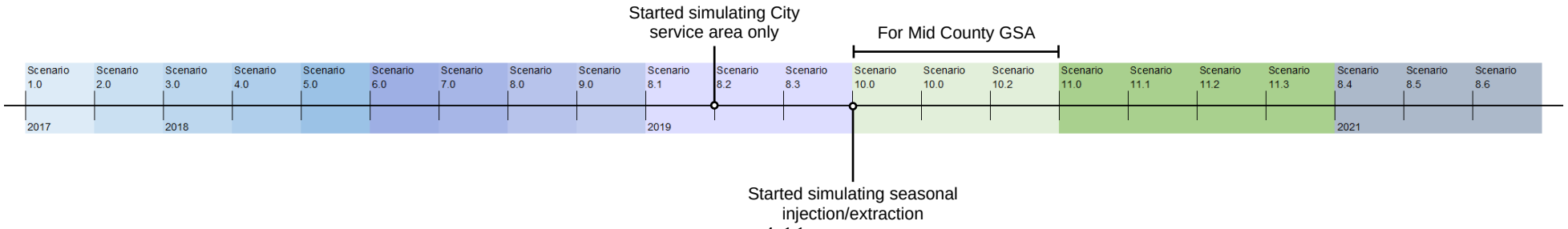
Scenario No.	Parameters											Project Description / Comments
	Assumed City Demands	Climatic Period	Project Type	GW Basin	City Service Area Only?	Allowable Recharge Season	Year Scenario Performed	Infrastructural Capacity (mgd) Inj	Infrastructural Capacity (mgd) Ext	Number of Wells Inj	Number of Wells Ext	
1.0	WSAC Developed	1985 - 2015 (historical)	In-Lieu Only	SMGB	N	All Year	2017	NA	2.0	NA	2	Recharge flows maximized for ea basin based on the In-Lieu demands of each District (i.e., essentially simulates ea basin being utilized in isolation, not conjunctively).
				MCGB	N	All Year	2017	NA	2.0	NA	2	
				Combined	N	All Year	2017	NA	4.0	NA	4	
2.0			ASR Only	SMGB	N	All Year	2017	2.75	2.0	9	9	Recharge and recovery flows split 50/50 between basins. SMBG scenario showed excessive heads at the of the simulated ASR wells, and would require relocating those wells and/or adding a well; however, feasible alternative wells sites are believed to exist.
				MCGB	N	All Year	2017	2.75	2.0	6	6	
				Combined	N	All Year	2017	5.5	4.0	15	15	
3.0			In-Lieu plus ASR	SMGB	N	All Year	2018	1.0	2.0	3	3	Recharge and recovery flows split 50/50 between basins.
				MCGB	N	All Year	2018	0.5	2.0	2	2	
				Combined	N	All Year	2018	1.5	4.0	5	5	
4.0		1973 - 1984 (historical)	In-Lieu Only	SMGB	N	All Year	2018	NA	1.9	NA	2	Recharge and recovery flows apportioned to ea basin proportionally based on relative District demands.
				MCGB	N	All Year	2018	NA	2.1	NA	2	
				Combined	N	All Year	2018	NA	4.0	NA	4	
5.0			ASR Only	SMGB	N	All Year	2018	2.75	2.0	9	9	Recharge and recovery flows split 50/50 between basins. SMBG scenario showed excessive heads at the of the simulated ASR wells, and would require relocating those wells and/or adding a well; however, feasible alternative wells sites are believed to exist.
				MCGB	N	All Year	2018	2.75	2.0	6	6	
				Combined	N	All Year	2018	5.5	4.0	15	15	
6.0			In-Lieu plus ASR	SMGB	N	All Year	2018	0.75	1.89	3	3	In-Lieu recharge and recovery flows apportioned to ea basin proportionally based on relative District demands. ASR flows split 50/50
				MCGB	N	All Year	2018	0.75	2.11	2	2	
				Combined	N	All Year	2018	1.5	4.0	5	5	
7.0	WSAC Developed	2020 - 2070 (GFDL2.1 A2 Climate Change scenario)	In-Lieu Only	SMGB	N	All Year	2018	NA	1.9	NA	2	Recharge and recovery flows apportioned to ea basin proportionally based on relative District demands. An iteration is needed with a higher assumed loss factor to prevent cummulative storage depletion.
				MCGB	N	All Year	2018	NA	2.1	NA	2	
				Combined	N	All Year	2018	NA	4.0	NA	4	
8.0			ASR Only	SMGB	N	All Year	2018	3.0	3.0	9	9	Recharge and recovery flows split 50/50 between basins. SMBG scenario showed excessive heads at the of the simulated ASR wells, and would require relocating those wells and/or adding a well; however, feasible alternative wells sites are believed to exist. Also, an iteration is needed with a higher assumed loss factor to prevent cummulative storage depletion.
				MCGB	N	All Year	2018	3.0	3.0	6	6	
				Combined	N	All Year	2018	6.0	6.0	15	15	
8.1				*MCGB*	N	All Year	2019	3.0	3.0	6	6	Combo run of Scenario 8.0 w/PWS. Excessive injection water levels at several ASR wells.
8.2					Y	All Year	2019	3.0	4.1	7	7	City service area only. Combination of converted existing 4 wells and 3 new wells. Excessive injection water levels at several ASR wells.
8.3					Y	All Year	2019	3.0	4.1	7	7	Combo run of Scenario 8.2 w/PWS. Excessive injection water levels at several ASR wells.
8.4					Y	All Year	2021	2.0	3.0	8	8	Combo run w/PWS. Combination of converted existing 4 wells and 4 new wells. Excessive injection water levels at several ASR wells.
8.5					Y	All Year	2021	2.0	3.0	8	8	Combo run w/PWS. Combination of converted existing 4 wells and 4 new wells. Excessive injection water levels at several ASR wells.
8.6					Y	All Year	2021	2.0	3.0	10	10	Combo run w/PWS. Combination of converted existing 4 wells and 6 new wells. Slightly excessive injection heads at some wells, but additional freeboard available at others.
9.0			In-Lieu plus ASR	SMGB	N	All Year	2018	1.0	3.1	3	3	In-Lieu recharge and recovery flows apportioned to ea basin proportionally based on relative District demands. ASR flows split 50/50. An iteration is needed with a higher assumed loss factor to prevent cummulative storage depletion.
				MCGB	N	All Year	2018	1.0	3.4	3	3	
				Combined	N	All Year	2018	2.0	6.5	6	6	
10.0	'16 - '18 Demands Projection	2020 - 2070 (Catalog Climate Change scenario)	ASR Only	MCGB	Y	Nov - Apr	2019	1.5	2.5	4	4	For Mid County GSP.Existing Beltz wells only, converted to ASR. Excessive injection water levels at Beltz 8, 9 and 12.
10.1					Y	Nov - Apr	2019	1.0	1.5	4	4	For Mid County GSP. Reduced per-well injection/extraction capacities based on results of Scenario 10.0.
10.2					Y	Nov - Apr	2019	1.0	1.5	4	4	For Mid County GSP. Combo run of Scenario 10.1 w/PWS. Slightly excessive injection water levels at Beltz 8, 9 and 12.
11.0		2020 - 2070 (GFDL2.1 A2 Climate Change scenario)			Y	Nov - Apr	2019	0.0	0.0	0	0	Revised Baseline No-Project scenario (updated Beltz pumping). Not an ASR scenario.
11.1					Y	Nov - Apr	2019	2.0	3.0	7	7	Existing Beltz wells converted to ASR + 3 new ASR wells. Slightly excessive injection water levels at several wells.
11.2					Y	Nov - Apr	2019	2.0	3.0	8	8	Existing Beltz wells converted to ASR + 4 new ASR wells
11.3					Y	Nov - Apr	2019	2.0	3.0	8	8	ASR Scenario 11.2 combo with PWS. Slightly excessive injection water levels at several wells.

Notes on Climatic Periods:

1985-2015 historical climate period represents the hydrologic calibration period of both GW basin models.

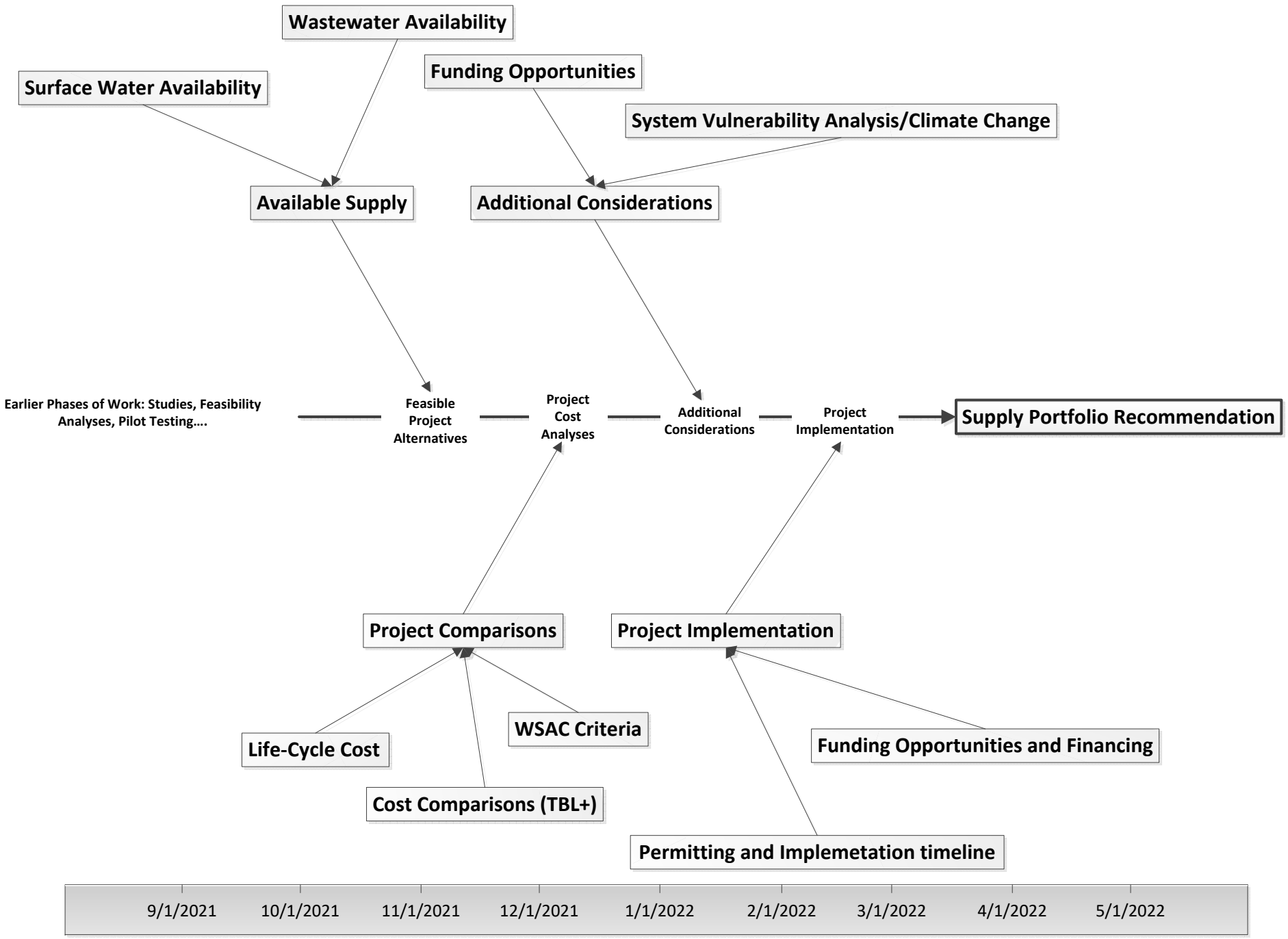
1973-1984 historical climate period represents hydrologic conditions used by WSAC to define City's water supply gap. Scenarios simulated under this climatic period most closely address the issue of validating the WSAC assumptions for aquifer performance.

2020-2070 GFDL2.1 A2 climate change scenario closer represents seasonal recharge/recovery operations.



Attachment 4

Water Supply Augmentation Decision Process Next Steps



Summary

State and Federal Infrastructure Funding Initiatives and Opportunities

July 2021

Working actively with the Water Commission over the last year, Water Department staff have been heavily focused on financial planning and water rate development work. Together with the ongoing development of the Department's Capital Investment Program (CIP), the financial planning work paints a vivid picture of the financial challenges ahead for Santa Cruz water service rate payers.

During the 2014 – 2015 Water Supply Advisory Committee (WSAC) process, the cost of water supply augmentation was certainly a focus of the Committee's discussion, but those discussions lacked the context of the system's larger need for capital investment and reinvestment. Although the April 2015 State of the Water System, which introduced the larger system's needs and infrastructure challenges, was shared with the WSAC, it wasn't until the June 2016 Long Term Financial Plan that the implications of and strategy for meeting the system's infrastructure and water supply needs were laid out in a way that began to make the implications for water service customer rates come into focus.

Weather conditions since 2014, at the very least, have further and consistently demonstrated the vulnerabilities and challenges the system faces on both the infrastructure and supply reliability fronts. The current drought, the prospects of another La Niña winter coming up, as well as the sobering analysis of current customer water use characteristics and customer water use curtailment strategies developed in the process of updating the Water Shortage Contingency Plan, have further underscored the critical need to begin moving forward on supply augmentation projects as soon as we possibly can. This means funding becomes an even more critical element to supply planning and that consideration and active pursuit of funding options is a high priority. It also means that being opportunistic is both desirable and necessary if the City is to take advantage of some of the funding resources that are or could become available through state or federal infrastructure legislation.

State and Federal Infrastructure Funding Initiatives:

Given this, Department staff has been carefully following infrastructure funding initiatives at both the state and federal levels. The main purpose of this summary is to highlight those funding opportunities that could be a significant source of money to help move system improvement work for either infrastructure improvements or supply augmentation. Following are some details:

AB/SB 129 – California Legislature

- Status – Passed by both the Assembly and the State Senate, based on agreement with Governor Newsom.
- Provisions – Includes both 2021 as well as future year funding for drought relief, funding for COVID-19 utility bill arrearages and other water supply reliability-related work.

- $663 million to the Department of Water Resources for the following projects and programs:
    - $200 million for small community drought relief
    - $100 million for urban community drought relief
    - $200 million for multi-benefit projects
    - $60 million for SGMA implementation
    - $100 million for conveyance projects
    - $3 million for immediate drought support
- $1.385 billion to the State Water Resources Control Board for the following projects and programs:
    - $650 million for drinking water projects with priority given to disadvantaged communities
    - $650 million for wastewater projects with priority given to septic-to-sewer conversions with local investment for wastewater projects
    - $85 million for groundwater cleanup and recycled water projects
- $985 million to the State Water Board for water arrearages due to COVID-19.

AB 129 also includes a section that proposes additional funding that is **contingent upon the enactment of future legislation**. This contingent proposal would appropriate $2.5 billion from the General Fund for the following purposes:

- $730.7 million for a water and drought resilience package
- $440 million for a climate resilience package
- $200 million for an agricultural package
- $65 million for a circular economy package
- $200 million for local parks grants
- $258 million for a wildfire prevention and forest resilience package
- $500 million for supporting affordable student housing projects for the University of California, the California State University, and the California Community Colleges, as well as for support of campus expansions for the University of California and the California State University
- $4.68 million for a climate-related service program
- $67.5 million for the California Access to Justice program

Although details of many of these initiatives are still somewhat fluid, from the details that are available, the items in the lists above that are highlighted in yellow are of specific interest to the City. Whether the topic is wildfire prevention, Sustainable Groundwater Management Act implementation, water and drought resilience or climate resilience, the Water Department's CIP and Operating budgets have projects or programs that are likely eligible for funding, and more importantly, are likely more ready for implementation than many projects that may serve the purposes identified in this legislation. Santa Cruz's investment in project development and analytical work such as pilot testing Aquifer Storage and Recovery (ASR) in the Mid-County Groundwater Basin, positions it well to move projects further along their pathway to completion.

On the federal side, the Biden administration has played an active role in the development of infrastructure legislation up to this point, starting with its release of the American Jobs Plan in late March 2021.

In the Senate, negotiations on an infrastructure package are ongoing. Levels of funding for water and other infrastructure investments have been reduced from those included in American Jobs Plan, and water and wastewater elements of the legislation currently under discussion are pegged at $55 billion. The July 26th edition of the Association of Metropolitan Water Agencies' Monday Morning Briefing includes the following report of progress:

> The situation (with respect to the federal infrastructure bill) has remained fluid as negotiations (in the Senate) have continued, but congressional staff has recently said that the $55 billion for drinking water and wastewater priorities in the bill would include, at minimum, $35 billion for programs approved by the Senate in April as part of the Drinking Water and Wastewater Infrastructure Act (S 914), as well as additional funds for lead service line replacement and per- and polyfluoroalkyl substances (PFAS)remediation. What remained unclear as of late last week was what portion of the funding would come in the form of new above-baseline spending, as opposed to program reauthorizations that would require a subsequent appropriation to receive funding.

Excerpts of the water and wastewater focus areas and funding amounts from S 914 are appended here, and much of what is presented in these details is highly aligned with the work Santa Cruz is seeking funding for. However, clearly the at $55 billion funding level, the amount that will be available under the federal infrastructure initiative currently under discussion will be less than anticipated in either S 914 and the American Jobs Plan.

In addition to action in the Senate, the House of Representatives has also taken action on infrastructure legislation. HR 3684, "Investing in a New Vision for the Environment and Surface Transportation in America Act" or the "INVEST in America Act," was approved in the House of Representatives on July 1, 2021 by a 221 to 201 vote and is summarized as follows:

Drinking Water Infrastructure & Assistance: $117 billion

- Authorizes $53 billion for the Drinking Water State Revolving Fund, the primary source of federal funding for safe drinking water infrastructure.
- Authorizes $45 billion to fully replace lead service lines throughout the nation. As many as 10 million lead service lines are currently in use, including an estimated 400,000 schools and child facilities with lead components.
- Strengthens drinking water standards and improves the Environmental Protection Agency's ability to set those standards. It directs the EPA to set health-protective national standards for PFAS, 1,4-dioxane, and microcystin toxin within two years.
- Provides assistance to low-income Americans with their water bills by creating two permanent assistance programs and authorizing them at $8 billion.
- Promotes near-term customer debt relief by authorizing $4 billion to reduce or eliminate debt incurred since March 2020 and prohibiting water systems receiving this funding

from disconnecting the service of eligible residential customers as a result of non-payment for a five-year period.

Wastewater Infrastructure: $51.25 billion

- Authorizes $40 billion for the Clean Water State Revolving Fund, the primary source of federal funding for clean water infrastructure.
- Includes $2 billion for projects to capture, treat, or reuse sewer overflows or stormwater—helping keep pollution out of local rivers and lakes—and $2.5 billion for state water pollution control programs.
- Permanently codifies the clean water "green reserve" to prioritize investments in green infrastructure, water and energy efficiency, and other efforts to make utilities more resilient to climate change. Also dedicates $1 billion toward alternative water source and water recycling projects to augment existing water supplies.
- Provides critical technical assistance to small, rural, and Tribal communities that often struggle to afford the costs of planning new infrastructure projects and to address local water quality challenges.
- Establishes a new clean water grant program to invest in communities with failing septic systems and prioritizes funding to those communities that lack access to adequate sewage treatment systems.

This bill addresses provisions related to federal-aid highway, transit, highway safety, motor carrier, research, hazardous materials, and rail programs of the Department of Transportation (DOT), and includes in separate Divisions H and I water quality and water infrastructure by incorporating the Water Quality Protection and Job Creation Act of 2020 (Division H) and the Assistance, Quality and Affordability Act of 2021 (Division I). The sub-titles of Divisions H and I are appended to this summary for your information. While not providing the kind of detail that is available from the details of S 914, the information provided on HR 3684 provides links to many of the sections of the legislation that may ultimately become sources of funding for the Water Department's projects.

When the final Senate infrastructure bill is adopted and it is time for a House/Senate Conference Committee, HR 3684 will be the House legislation involved in the development of an agreed upon piece of final legislation that will be considered by both houses and then sent to the President for action.

City Priorities for Capital Funding:

As ongoing water rate development work is clearly showing, funding for capital projects is driving water rate increases. The good news of this situation is that state and federal infrastructure initiatives are much more likely to be the source of one-time funding than ongoing funding for operations. Santa Cruz is well preparedto compete for grant or low-interest loan funding for capital projects such as the Graham Hill Water Treatment Plant Facility Improvement Project, Newell Creek Pipeline Replacement, and water supply augmentation project(s). These project are the City's priorities for capital funding. These projects are highly

aligned with funding opportunities being presented by state and federal infrastructure spending initiatives that focus on climate adaptation and infrastructure resiliency to increasingly extreme weather scenarios, which Santa Cruz is already experiencing. Together, these projects represent about $300 million in capital expenditures and are the Department's highest priorities for capital funding.

Excerpt from S. 914[1]

"SEC. 1459F. MIDSIZE AND LARGE DRINKING WATER SYSTEM INFRASTRUCTURE RESILIENCE AND SUSTAINABILITY PROGRAM.

"(a) DEFINITIONS.—In this section:

"(1) ELIGIBLE ENTITY.—The term 'eligible entity' means a public water system that serves a community with a population of 10,000 or more.

"(2) NATURAL HAZARD; RESILIENCE.—The terms 'resilience' and 'natural hazard' have the meanings given those terms in section 1433(h).

"(3) RESILIENCE AND SUSTAINABILITY PROGRAM.—The term 'resilience and sustainability program' means the Midsize and Large Drinking Water System Infrastructure Resilience and Sustainability Program established under subsection (b).

"(b) ESTABLISHMENT.—The Administrator shall establish and carry out a program, to be known as the 'Midsize and Large Drinking Water System Infrastructure Resilience and Sustainability Program', under which the Administrator, subject to the availability of appropriations for the resilience and sustainability program, shall award grants to eligible entities for the purpose of—

"(1) increasing resilience to natural hazards and extreme weather events; and

"(2) reducing cybersecurity vulnerabilities.

"(c) USE OF FUNDS.—An eligible entity may only use grant funds received under the resilience and sustainability program to assist in the planning, design, construction, implementation, operation, or maintenance of a program or project that increases resilience to natural hazards and extreme weather events, or reduces cybersecurity vulnerabilities, through—

"(1) the conservation of water or the enhancement of water-use efficiency;

"(2) the modification or relocation of existing drinking water system infrastructure made, or that is at risk of being, significantly impaired by natural hazards or extreme weather events, including risks to drinking water from flooding;

"(3) the design or construction of new or modified desalination facilities to serve existing communities;

[1] See complete bill text at: https://www.congress.gov/bill/117th-congress/senate-bill/914/text#toc-id48c8421b-f401-41b8-b166-13cb1246930d

“(4) the enhancement of water supply through the use of watershed management and source water protection;

“(5) the enhancement of energy efficiency or the use and generation of renewable energy in the conveyance or treatment of drinking water;

“(6) the development and implementation of measures—

“(A) to increase the resilience of the eligible entity to natural hazards and extreme weather events; or

“(B) to reduce cybersecurity vulnerabilities;

“(7) the conservation of water or the enhancement of a water supply through the implementation of water reuse measures; or

“(8) the formation of regional water partnerships to collaboratively address documented water shortages.

“(d) APPLICATION.—To seek a grant under the resilience and sustainability program, an eligible entity shall submit to the Administrator an application at such time, in such manner, and containing such information as the Administrator may require, including—

“(1) a proposal of the program or project to be planned, designed, constructed, implemented, operated, or maintained by the eligible entity;

“(2) an identification of the natural hazard risks, extreme weather events, or potential cybersecurity vulnerabilities, as applicable, to be addressed by the proposed program or project;

“(3) documentation prepared by a Federal, State, regional, or local government agency of the natural hazard risk, potential cybersecurity vulnerability, or risk for extreme weather events to the area where the proposed program or project is to be located;

“(4) a description of any recent natural hazards, cybersecurity events, or extreme weather events that have affected the community water system of the eligible entity;

“(5) a description of how the proposed program or project would improve the performance of the community water system of the eligible entity under the anticipated natural hazards, cybersecurity vulnerabilities, or extreme weather events; and

“(6) an explanation of how the proposed program or project is expected—

“(A) to enhance the resilience of the community water system of the eligible entity to the anticipated natural hazards or extreme weather events; or

“(B) to reduce cybersecurity vulnerabilities.

"(e) REPORT.—Not later than 2 years after the date of enactment of the Drinking Water and Wastewater Infrastructure Act of 2021, the Administrator shall submit to Congress a report that describes the implementation of the resilience and sustainability program, which shall include a description of the use and deployment of amounts made available to carry out the resilience and sustainability program.

"(f) AUTHORIZATION OF APPROPRIATIONS.—

"(1) IN GENERAL.—There is authorized to be appropriated to carry out the resilience and sustainability program $50,000,000 for each of fiscal years 2022 through 2026.

"(2) USE OF FUNDS.—Of the amounts made available under paragraph (1) for grants to eligible entities under the resilience and sustainability program—

"(A) 50 percent shall be used to provide grants to eligible entities that serve a population of—

"(i) equal to or greater than 10,000; and

"(ii) fewer than 100,000; and

"(B) 50 percent shall be used to provide grants to eligible entities that serve a population equal to or greater than 100,000.

"(3) ADMINISTRATIVE COSTS.—Of the amounts made available under paragraph (1), not more than 2 percent may be used by the Administrator for the administrative costs of carrying out the resilience and sustainability program.".

"SEC. 223. CLEAN WATER INFRASTRUCTURE RESILIENCY AND SUSTAINABILITY PROGRAM.

"(a) DEFINITIONS.—In this section:

"(1) ELIGIBLE ENTITY.—The term 'eligible entity' means—

"(A) a municipality; or

"(B) an intermunicipal, interstate, or State agency.

"(2) NATURAL HAZARD.—The term 'natural hazard' means a hazard caused by natural forces, including extreme weather events, sea-level rise, and extreme drought conditions.

"(3) PROGRAM.—The term 'program' means the clean water infrastructure resilience and sustainability program established under subsection (b).

“(b) ESTABLISHMENT.—Subject to the availability of appropriations, the Administrator shall establish a clean water infrastructure resilience and sustainability program under which the Administrator shall award grants to eligible entities for the purpose of increasing the resilience of publicly owned treatment works to a natural hazard or cybersecurity vulnerabilities.

“(c) USE OF FUNDS.—An eligible entity that receives a grant under the program shall use the grant funds for planning, designing, or constructing projects (on a system-wide or area-wide basis) that increase the resilience of a publicly owned treatment works to a natural hazard or cybersecurity vulnerabilities through—

“(1) the conservation of water;

“(2) the enhancement of water use efficiency;

“(3) the enhancement of wastewater and stormwater management by increasing watershed preservation and protection, including through the use of—

“(A) natural and engineered green infrastructure; and

“(B) reclamation and reuse of wastewater and stormwater, such as aquifer recharge zones;

“(4) the modification or relocation of an existing publicly owned treatment works, conveyance, or discharge system component that is at risk of being significantly impaired or damaged by a natural hazard;

“(5) the development and implementation of projects to increase the resilience of publicly owned treatment works to a natural hazard or cybersecurity vulnerabilities, as applicable; or

“(6) the enhancement of energy efficiency or the use and generation of recovered or renewable energy in the management, treatment, or conveyance of wastewater or stormwater.

“(d) APPLICATION.—To be eligible to receive a grant under the program, an eligible entity shall submit to the Administrator an application at such time, in such manner, and containing such information as the Administrator may require, including—

“(1) a proposal of the project to be planned, designed, or constructed using funds under the program;

“(2) an identification of the natural hazard risk of the area where the proposed project is to be located or potential cybersecurity vulnerability, as applicable, to be addressed by the proposed project;

“(3) documentation prepared by a Federal, State, regional, or local government agency of the natural hazard risk of the area where the proposed project is to be located or potential cybersecurity vulnerability, as applicable, of the area where the proposed project is to be located;

"(4) a description of any recent natural hazard risk of the area where the proposed project is to be located or potential cybersecurity vulnerabilities that have affected the publicly owned treatment works;

"(5) a description of how the proposed project would improve the performance of the publicly owned treatment works under an anticipated natural hazard or natural hazard risk of the area where the proposed project is to be located or a potential cybersecurity vulnerability, as applicable; and

"(6) an explanation of how the proposed project is expected to enhance the resilience of the publicly owned treatment works to a natural hazard risk of the area where the proposed project is to be located or a potential cybersecurity vulnerability, as applicable.

"(e) GRANT AMOUNT AND OTHER FEDERAL REQUIREMENTS.—

"(1) COST SHARE.—Except as provided in paragraph (2), a grant under the program shall not exceed 75 percent of the total cost of the proposed project.

"(2) EXCEPTION.—

"(A) IN GENERAL.—Except as provided in subparagraph (B), a grant under the program shall not exceed 90 percent of the total cost of the proposed project if the project serves a community that—

"(i) has a population of fewer than 10,000 individuals; or

"(ii) meets the affordability criteria established by the State in which the community is located under section 603(i)(2).

"(B) WAIVER.—At the discretion of the Administrator, a grant for a project described in subparagraph (A) may cover 100 percent of the total cost of the proposed project.

"(3) REQUIREMENTS.—The requirements of section 608 shall apply to a project funded with a grant under the program.

"(f) REPORT.—Not later than 2 years after the date of enactment of the Drinking Water and Wastewater Infrastructure Act of 2021, the Administrator shall submit to Congress a report that describes the implementation of the program, which shall include an accounting of all grants awarded under the program, including a description of each grant recipient and each project funded using a grant under the program.

"(g) AUTHORIZATION OF APPROPRIATIONS.—

"(1) IN GENERAL.—There is authorized to be appropriated to carry out this section $25,000,000 for each of fiscal years 2022 through 2026.

"(2) LIMITATION ON USE OF FUNDS.—Of the amounts made available for grants under paragraph (1), not more than 2 percent may be used to pay the administrative costs of the Administrator.".

Excerpt of HR3684[2]

DIVISION H—WATER QUALITY PROTECTION AND JOB CREATION ACT OF 2021

DIVISION I—ASSISTANCE, QUALITY, AND AFFORDABILITY ACT OF 2021

TITLE I—INFRASTRUCTURE

[2] https://www.congress.gov/bill/117th-congress/house-bill/3684/text