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

Water Department

WATER COMMISSION

Regular Meeting

June 04, 2018

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

*Denotes written materials included in packet.

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 - No action shall be taken on this item.

Announcements - No action shall be taken on this item.

Consent Agenda Items (Pages 1.1 - 2.9) 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.

Items Removed from the Consent Agenda

1. City Council Actions Affecting Water (Page 1.1)

   Accept the City Council items affecting the Water Department.

2. Water Commission Minutes from May 7, 2018 (Pages 2.1 - 2.9)

   Approve the May 7, 2018 Water Commission Minutes

General Business (Pages 3.1 - 5.10) Any document related to an agenda item for the General Business of this meeting distributed to the Water Commission less than 72 hours before this meeting is available for inspection at the Water Administration Office, 212 Locust Street, Suite A, Santa Cruz, California. These documents will also be available for review at the Water Commission meeting with the display copy at the rear of the Council Chambers.

3. Recommendation to Council to approve the FY 2019 Recommended Operating and CIP Budgets (Pages 3.1-3.35)

   Approve the Draft Letter fro the Water Commission to the City Council regarding Recommendations to Approve the Water Department's FY 2019 Recommended Operating and Capital Investment (CIP) Budgets.

4. Decision Framework Discussion (Pages 4.1 - 4.6)

   Receive information regarding the Decision Framework Discussion and provide feedback.

5. Quarterly Water Supply Augmentation Strategy (WSAS) Update (Pages 5.1 - 5.10)

   Receive information regarding the Quarterly WSAS Update and provide feedback.

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

6. Santa Cruz Mid County Groundwater Agency

7. Santa Margarita Groundwater Agency

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

Information Items from the Public

Adjournment

WATER COMMISSION
INFORMATION REPORT

DATE: 5/24/2018

AGENDA OF: June 4, 2018

TO: Water Commission

FROM: Rosemary Menard, Water Director

SUBJECT: City Council Actions Affecting the Water Department

RECOMMENDATION: Accept the City Council items affecting the Water Department.

BACKGROUND/DISCUSSION:

May 8, 2018

Water Rights Reliability Project: Professional Services Contract for California Environmental Quality Act Compliance (WT)

Motion carried authorizing the City Manager to execute an agreement in a form to be approved by the City Attorney with Analytical Environmental Services (Sacramento, CA) to provide professional services related to California Environmental Quality Act compliance for the Water Rights Reliability Project.

Resolution to Apply for State Water Resources Control Board Loan for the Newell Creek Dam Inlet-Outlet Pipeline Replacement Project (WT)

Resolution No. NS-29,400 was adopted authorizing the Water Department to apply for State Water Resources Control Board loan for the Newell Creek Dam Inlet-Outlet Pipeline Replacement Project.

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

ATTACHMENTS: None.

Water Commission
7:00 p.m. – May 7, 2018
Council Chambers
809 Center Street, Santa Cruz

Water Department

Summary of a Water Commission Meeting

Call to Order: 7:00 PM

Roll Call

Present: Present: L. Wilshusen (Chair), D. Engfer (Vice-Chair), J. Mekis, A. Schiffrin, D. Schwarm, W. Wadlow
A. Schiffrin arrived at 7:10 PM and departed at 8:55 PM

Absent: D. Baskin, with notification

Staff: R. Menard, Water Director; H. Luckenbach, Deputy Director/Engineering Manager; N. Dennis, Principal Management Analyst; M. Kaping, Management Analyst; J. Becker, Finance Manager; S. Perez, Associate Planner; D. Kehn, Assistant Engineer II; C. Coburn, Deputy Director/ Operations Manager; D. Culver, Acting CFO; K. Fitzgerald, Administrative Assistant III

Others: 3 members of the public.

Presentation: None.

Statement of Disqualification: None.

Oral Communications: None.

Announcements: Ms. Menard introduced two new senior level employees: Jeremy Becker, Finance Manager and Chris Coburn, Deputy Director for Water Operations.

Consent Agenda

1. City Council Items Affecting Water
3. FY 2018 3rd Quarter Financial Report
4. Communication with a Customer Regarding Water Costs

Commissioner Wadlow moved the consent agenda. Commissioner Mekis seconded.

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

Items moved from the Consent Agenda

2. March 5, 2018 Water Commission Minutes

Commissioner Wilshusen requested that clarification be made regarding the Department's goal to make the Home Water Usage Monitoring via web portal described on page 2.5 available to "all water customers" instead of "all City residents."

Commissioner Wadlow moved to approve the March 5, 2018 Minutes. Commissioner Engfer seconded.

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

General Business

5. Recommendations on the FY 2019 Operations and Maintenance Budget and CIP with Updated Financial Pro Forma

Ms. Menard introduced the presentation on the FY 2019 Operations and Maintenance Budget as well as the Capital Investment Program (CIP) and Pro Forma.

The Recommendations on FY 2019 Operations and Management Budget and CIP with Financial Pro Forma were presented by Nicole Dennis, Principal Management Analyst. Ms. Dennis' presentation also covered the Department's 2018 Accomplishments and 2019 Goals as well as the FY 2019 Budget Analytics. The CIP portion of the FY 2019 Operations and Management Budget was presented by Heidi Luckenbach, Deputy Director/ Engineering Manager. The Pro Forma portion of the presentation was introduced by N. Dennis, Principal Management Analyst and presented by Jeremy Becker, Finance Manager.

Comments from the Commissioners with staff responses:

Please provide information for all years of the current, approved rates for single family and multi-family units for the June Water Commission meeting as an information item.

- The Department will provide that information as well as the Prop 218 notice for inside and outside City water customers. Both can be accessed on the City's website: http://www.cityofsantacruz.com/government/city-departments/water/rates. In addition, customers can calculate their bill using the rate calculator tool on the website: http://www.cityofsantacruz.com/government/city-departments/water/monthly-water-costs-calculator.

Why does the Department budget an entire cost for a project in a single year, and when is the amount adjusted to reflect the actual cash flow?

- Current City practice requires this method of budgeting in order to guarantee that it will have the funds to pay its obligations. The City creates an encumbrance to show that these funds have been set aside and allocated for a specific cost. In terms of cash flow, the project manager develops this as the project becomes more defined.
- However, this does not impact the budget and how it is reflected in the CIP. Rather it's a financial and project management tool to support project implementation.

Is the City considering making a change to this encumbrance budgeting method?

- Acknowledging there are some limitations to the City's financial management system (Eden) processes, the Department will be working with the Finance Department to modify the approach to encumber funds for projects on a fiscal year rather than full project cost basis.

The Department has been integrating staff and procedures for the Program since December 2017 with the hiring of HDR. This type of "ramping up" can have an impact on existing staff and procedures with one of those impacts being a slowing down in project implementation. How has the Department been managing these changes?

- The Department has been impacted in a variety of ways as new staff and procedures are incorporated and as we settle in to our new overall approach to implementing the CIP. As a simple example, one of these impacts is bringing HDR staff up to speed on Department background, project details, and City policies and procedures. That being said, the overall impact is very positive with opportunities for new-skill development, new processes for doing work that increase efficiency and certainty as well as additional staff with a depth and breadth of experience that we don't currently have. These impacts are temporary and an end is in sight.

Does the Pro Forma include the additional PERS unfunded liability and how is it being treated?

- The Department has unfunded liability increases of approximately $667,000 each year through FY 2023 as provided by the City's Finance Department. The FY 2019 Proposed Budget contains, approximately $1,450,000 in unfunded PERS liability ($1.2 million for FY 2018 plus $253,000 for FY 2019). This amount is imbedded in the financial model and is reflected in the Pro Forma.

Have projected water sales revenues based on selling 2.5 billion gallons of water per year, been met?

- Billed revenues have been tracking at approximately 5% below projections and under collection of revenue has been more than offset by underspending of the FY 2018 authorized budget.

What is the status of any protests that were filed with the State Water Resources Control Board (SWRCB) in 2009 when the proposed water rights changes that are being pursued now, as referenced on page 5.11, were filed?

- The National Marine Fisheries Services (NMFS) filed a protest on the 2009 filings based on their concern that the City had not established and committed to instream flows that would protect endangered coho salmon on the San Lorenzo River. This protest stands at the moment. However, since 2009, and particularly since 2016, the City has worked with the NMFS and California Department of Fish and Wildlife (DFW) to develop and agree on instream flows for not only the San Lorenzo but also for the North Coast streams.

What is the potential that NMFS will simply file the same or a new protest on the City's proposed water rights changes if/when there is a new public notification period during which protests may be filed?

- Of course, it is possible for NMFS and/or DFW to file new or additional protests during any new public notification period, but Department staff believes that should they do so, we would be in a strong position to work with the SWRCB to resolve the issues they've raised.

How does the work with CEQA for water rights integrate the efforts for the Habitat Conservation Plan (HCP)?

- In order to describe the impacts of the water rights changes, impacts to fishery flows must also be included in the discussion. The basis for this analysis and discussion will be the work that the Department has done to develop the Habitat Conservation Plan (HCP) and the same information that will ultimately end up in the HCP NEPA/CEQA documentation.

When is the Department expecting to move forward with a CEQA and NEPA review for the HCP?

- The Department expects to have the technical work portion of the HCP complete by the end of this year.

Is the work on the San Lorenzo River Diversion & Tait Wells project described on page 5.20 being held due to the addition of River Bank Filtration project? If so when can the Department provide an update on the horizontal collectors?

- The narrative for the San Lorenzo River Diversion & Tait Wells project on page 5.20 needs to be edited for accuracy. Specifically, with the addition of the River Bank Filtration project (on page 5.31), the Project Description for the San Lorenzo project needs to be modified to remove reference to horizontal collector wells. The project discussed on page 5.20 will focus on completing the Tait Wells project and evaluating the existing diversion structure in the river.

- With regards to the update on the horizontal collector wells project on page 5.31, a contract for the evaluation of river bank filtration (RBF) has been issued and we will be working with the consultant through the middle of summer on the details of the hydrogeological investigations of the potential for RBF based on existing information. We will schedule an update for the Commission on this topic when there are results to report and status of the work will be incorporated into the quarterly WSAS updates.

Can the Department begin work on projects described under Risk Mitigation on page 5.25 before grants from FEMA are received?

- No, similar to State Revolving Funds (SRF), FEMA does not allow for any work to begin on a potentially grant eligible project until it has actually approved the grants. The Department has submitted all required documentation for the grants and we expect to receive a response from FEMA soon.

Page 5.29 explains that the Water Resources Building project is on hold. When will we know if/when this project can proceed?

- HDR is conducting a fairly detailed condition assessment and facility plan of the Graham Hill Water Treatment Plant that is scheduled to conclude at the end of this calendar year. At that time we will be able to determine the status of this project.

What is the status of the groundwater modeling work that is supporting the Aquifer Storage and Recovery (ASR) project referenced on page 5.30?

- We have the ground water consultant, HydroMetrics, under contract to complete up to twenty-four modeling scenarios in the Mid County and Santa Margarita groundwater basins. These scenarios cover potential surface water harvesting projects involving in lieu, ASR, and in lieu plus ASR. We have preliminary results of two scenarios in the Mid County basin. An issue staff is working through with its consultants has been trying to understand the various climate change models and incorporating the resulting hydrology projections into the water supply and groundwater models.

Will there be an opportunity for the Water Commission to receive a presentation on the status of the groundwater modeling and its usage?

- Yes, the Department can provide a presentation of the model. In addition, there will be an outside opportunity to hear a brief update on this topic at the meeting of the Mid County Ground Water Agency that will be held at Simpkins Family Swim Center on May 17th at 7:00 pm.

Will a climate change report be presented in August to the Commission?

- As of now, the timeline for a presentation on the climate change work we've been doing is pending due to Shawn Chartrand's, the consultant engaged in this work, schedule. He is currently doing graduate work at the University of British Columbia in Vancouver and we will need to coordinate a presentation as his schedule allows.

Does the city choose a climate model on its own or does it rely on the recommendation of the Water Department to represent its position? Will this model be representing the climate change scenario chosen by the Mid County Groundwater Agency?

- The Department's climate change modeling is based on a combination of scenarios from the work of Shawn Chartrand and of WSAC. It is used to primarily develop hydrology and evaluates the impacts of climate change on the magnitude and timing of when additional resources and supplies will be necessary. The City itself does not have a specific climate model; however, the Department is a few steps ahead on addressing the widespread concerns on future sustainability and reliability. Sea level rise is one of the primary causes of concern versus changes in hydrology or precipitation levels and although conversations have begun to introduce the modeling work the Department is doing to others in the City that may be interested in what we're doing and considering its applicability to other situations and issues.

What is the FY 2019 Work Plan schedule for ASR as referenced on page 5.30?

- A draft of the work plan for pilot testing ASR at Beltz Well #12 has been received from Pueblo Water Resources, the Department's consultant, and is under staff review. Pilot testing would begin in fall/winter 2018 and operate for approximately six months.

What will be done with the Rate Stabilization surcharge once we achieve the $10 million target for that fund?

- The 2016 Long Range Financial Plan contains language (pages 31-32) stating, "the planned $1.00 surcharge is not being designed to be an "on-off" mechanism but is currently proposed to be permanent. Use of these funds once the Rate Stabilization Reserve reaches $10 million is recommended to be used as follows: once the rate stabilization reserve reaches its target level of $10 million, funds from this surcharge would be allocated as needed to ensure that operating cash and emergency reserves are fully funded and then directed to fund "pay-as-you-go" capital expenditures, reducing the need to issue debt."

  The Plan goes onto explain a conditional approach if revenue stability is not an issue, which requires a minimum debt service coverage ratio of 1.5 is met and pay-go capital is being funded at an average of 25% over the previous three years. In this case, rate increases will be adjusted to the level needed without any excess, or the Department will ask the Council for direction.

  The full 2016 Long Range Financial Plan can be viewed on the City website at the link listed below:

http://scsire.cityofsantacruz.com/sirepub/cache/2/5v2ah2oxm5jmur5et5zitvoa/434574805292018094237430.PDF

Why does the Debt Service Coverage Ratio (DSCR) calculation not apply to 2018, 2019, 2020 columns? Why is the DSCR presented with reserves and without reserves and which set of numbers do financial agencies consider?

- The DSCR, as defined in the glossary, equals Net Operating Income – Rate Stabilization Revenue and Emergency Reserve Revenue/Debt Service), is applying to all the years questioned. Credit rating agencies want operating revenues high enough to cover debt service and have enough "spare" to cover any unforeseen circumstances. This also avoids structural problems by setting rates at an appropriate level to maintain existing reserves and meet operating expenditures.

  Credit rating agencies consider both with and without reserve ratios when determining an agency's rating. Staff agrees with the Commission that displaying the financial targets with and without reserves in the Pro Forma is only appropriate for financial analysts. The Pro Forma has been simplified by removing the "Debt Service Coverage (W/Reserves)" ratio to reflect this change as will the glossary definition of DSCR.

Has the Water Department glossary been finalized and published? If it has, where can it be located?

- The glossary has been updated and has been posted to the Department's website under the Water Commission page: http://www.cityofsantacruz.com/government/city-departments/water/city-water-commission/meetings-and-agenda

Commissioners commented on the depth and completion of the financial reporting and complimented the Department for its efforts.

The Commission requested the Pro Forma and budget analytics be updated for the June 4, 2018 Water Commission meeting. Staff will make those updates and return with the updated items.

Looking at the Budget Analytics information, why is the Conservation line item amount on page 5.37 doubling?

- The increase reflects the growing efforts of the Department to maintain the conservation awareness. The projected increase for this area of the budget is correlated to the deployment of home water use reports, one of the highest ranked projects in the updated Water Conservation Master Plan. The increased costs reflect the cost of the contract for the home water use reports along with anticipated printing and postage to mail those reports. In addition, funding for one additional temporary employee to help with implementing the Stage 1 water alert has been added.

Why did the "Finance Charges and Transfers" line item increase in FY 2017?

- This increase correlates with the receipt of IBank loan proceeds.

6. Water Main Replacement Program Update.

The presentation on the Water Main Replacement Program was given by Heidi Luckenbach.

The presentation provided an overview of the current water main replacement program and looked at some metrics provided by the recent Utah State University study distributed to Commissioners by Commissioner Engfer.

Is there an understanding of potential risks to critical facilities, such as medical facilities and jails, due to natural and unnatural causes and effects to vulnerable current mains?

- We have a fairly good data base of who our "critical" customers are, and we prioritize level of service and immediate notifications for planned and unplanned work to these customers. There is more work to be done however in order to fully understand vulnerabilities. For example, we do not have a clear understanding for each of these customers the real criticality of consistent service, if they have on-site capabilities such as water storage, or if they have multiple connections from multiple mains. This is a work in progress that requires constant updating as properties change ownership and uses.

What is Fracta and has the Department determined if the program can be utilized?

- Fracta is a software solution that claims to use available data such as local topography and soil conditions and, adding to the data set information from other agencies with similar conditions, prioritizes projects based on these inputs. The idea being that Fracta has access to a very robust data set and, as a result, provides for increased confidence about decision making for which pipes need to be replaced first. At this time, it is not known if the technology Fracta offers will be a beneficial tool for the Department. The Department plans on reaching out to other local agencies that are in the process of using this tool to see if it is effective.

Subcommittee/Advisory Body Oral Reports

7. WSAS Ad Hoc Committee – Project Evaluation Framework

- Commissioner Engfer announced that the committee is continuing to meet and develop its preliminary draft on the framework and intends on presenting the work plan to the Commission for review and discussion in June. City Council had commented at the April Joint Meeting with the Commission that it would make suggestions.

8. Santa Cruz Mid-County Groundwater Agency

- Ms. Menard commented that the Mid-County Groundwater Sustainability Plan Advisory Committee has been regularly meeting and discussing initial input for the six groundwater sustainability indicators: Groundwater Storage, Groundwater Levels, Seawater Intrusion, Subsidence, Water Quality, and Surface Water-Groundwater Interactions. She also noted that the Advisory Committee and the Mid-County Groundwater Agency Board will hold a joint meeting on Thursday, July 19 at 7:00 pm. The meeting agenda will focus on a presentation and discussion of the work underway by Mid-County Groundwater Agency member agencies to evaluate various supplemental supply alternatives. The Groundwater Sustainability Plan under development will need to include a discussion of management actions and projects to "solve the problem" and the purpose of this joint meeting is to brief the Board and Advisory Committee members as well as interested citizens and other interests on the history and current status of various supplemental supply planning efforts. This meeting will be held at the Simpkins Family Swim Center.

9. Santa Margarita Groundwater Agency

- Commissioner Engfer commented that the next meeting will take place in June. The committee has chosen a facilitator who will work with the Board through the remainder of the calendar year to conduct a joint goal setting effort. June will be the last bimonthly meeting potentially. A groundwater modeling consultant, Hydro Focus based in Davis, CA has been hired to analyze the current models for the Santa Margarita Basin and determine if any are updates or other changes that need to be made. In addition, the first draft of the budget for the upcoming year has been presented and action to adopt the budget will occur at the June meeting.

Commissioners complemented staff about Item 4 and the effectiveness of the Department's response to the consumer's letter questioning the increase in water rates. The letter explained the relationship between the increase in rates and the costs of maintaining the infrastructure of the water system.

Director's Oral Report:

- Coming in June will be updated materials related to the FY 2019 Operating Budget, CIP, budget analytics and Pro Forma with a draft Water Commission letter to the Council on its review and recommendations on the FY 2019 Budget and CIP for the Commission's action.
- Later in the summer, staff will be presenting results of the Phase 1, Bench Scale Testing, of the Surface Water/Groundwater Water Quality (pipe loop) study.

Informational Items

10. Email Correspondence Received from Members of the Public.

What was the context of the correspondence?

- The communication to Water Commissioners advocated for the continuation of funding for the annual monitoring work on juvenile steelhead that has been conducted throughout the region for many years.

- Executive level staff at the various agencies that have been involved in the effort had proposed that rather than fund the monitoring program this year that the funds be used to support creation of a database of all the historic data, to do analysis of the data, and review and update what the future monitoring program would be based on that analysis.

- Upon review of this and other related communications, executive level staff at the various agencies decided to fund both the annual monitoring and the work described in the preceding bullet, with a goal of issuing a request for proposals for future monitoring based on the revised monitoring program that is developed as a result of the planned program review.

What would be the approximate cost of this program?

- The cost would be approximately $80,000.00 per year. This amount is shared by a number of agencies: the City of Santa Cruz, the City of Watsonville, Soquel Creek Water District, San Lorenzo Valley Water District, and Scotts Valley Water District.

Will a response to this communication be drafted?

- No, the problem outlined in the communication has already been solved with a decision that was made by the Department and other parties involved to continue to fund the data collection.

In the future, Commissioners would appreciate having correspondence such as this forwarded to them, along with the Department's response, if and as appropriate, reasonably soon after it is received.

Adjournment Meeting adjourned at 9:30 PM.

Respectfully submitted,

Katy Fitzgerald
Staff

WATER COMMISSION
INFORMATION REPORT

DATE: 5/29/2018

AGENDA OF: June 4, 2018

TO: Water Commission

FROM: Nicole B. Dennis,
Principal Management Analyst

SUBJECT: Authorize the Chairperson to sign the letter to the City Council recommending approval of the Water Department's FY 2019 Proposed Operating and Capital Investment Program (CIP) Budgets.

RECOMMENDATION: Authorize the Chairperson to sign and transmit the attached letter from the Water Commission to the City Council recommending approval of the Water Department's FY 2019 Proposed Budget. The letter will outline the elements reviewed by the Water Commission in arriving at the approval recommendation.

BACKGROUND: The responsibility for making "recommendations concerning the proposed annual Water Department budget and CIP" is outlined in the Water Commission Bylaws. The City of Santa Cruz will hold its FY 2019 Operating and CIP budget hearings on June 6, 2018. Both of the Operating and CIP Budgets are scheduled to be adopted on June 12, 2018. At the May 7, 2018 Water Commission meeting, the Commission reviewed the Department's proposed budgets thoroughly and gave staff direction to draft a letter to the City Council describing the information gathered and reviewed as well as a recommendation to approve the Water Department's Operating and CIP Budgets.

DISCUSSION: During their meeting on May 7, 2018, Commissioners requested staff return with the final version of the FY 2019 Operating Budget, updated budget analytics and corrected Pro Forma. In addition, the Commission requested copies of the current five-year rate structure and the impact of the rate structure on average single family and multi-family residences. All of these materials are attached to this report and incorporate the suggestions from the Commission. Staff will be present to respond to any additional questions from the Commission.

FISCAL IMPACT: Funds are available to support the FY 2019 Recommended Operating and CIP Budgets as demonstrated in the FY 2019 Final Pro Forma.

RECOMMENDED MOTION: Authorize the Chairperson to sign and transmit the attached letter from the Water Commission to the City Council recommending approval of the Water Department's FY 2019 Proposed Budget.

Attachments:

1) Water Department's FY 2019 Corrected Draft Pro Forma.
2) Water Department's FY 2019 Proposed Operating Budget.
3) Water Department's FY 2019 Updated Budget Analytics.
4) The impact of the rate structure on average single family and multi-family residences.
5) Copy of the current five-year rate structure (FY 2017-2021).
6) Letter from Water Commission to the City Council recommending approval of the Water Department's FY 2019 Operating and CIP Budgets.
    a) Example of Quarterly Financial Reports prepared for and distributed to the Water Commission.

3.3

City of Santa Cruz Water Department Pro-Forma Projections											
Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Revenues											
Rate Revenue											
Fixed Fee Revenue	$ 3,018,835	$ 3,225,420	$ 3,392,403	$ 3,566,822	$ 3,566,822	$ 4,045,963	$ 4,566,551	$ 4,981,534	$ 5,342,293	$ 5,537,749	$ 5,738,933
Volumetric Revenue	$ 30,865,781	$ 38,923,691	$ 36,872,003	$ 39,297,579	$ 39,297,579	$ 44,576,537	$ 50,312,125	$ 54,884,216	$ 58,858,890	$ 61,012,338	$ 63,228,889
Elevation Surcharges	$ 291,881	$ 312,079	$ 326,180	$ 344,469	$ 344,469	$ 344,469	$ 344,469	$ 344,469	$ 344,469	$ 344,469	$ 344,469
Rate Stabilization Revenue	$ 3,342,244	$ 3,342,244	$ 3,342,244	$ 3,342,244	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Manual Revenue Adjustment (Fire Service)	$ 43,733	$ 46,174	$ 48,325	$ 50,239	$ 50,239	$ 50,239	$ 50,239	$ 50,239	$ 50,239	$ 50,239	$ 50,239
Total Rate Revenue	$ 37,562,474	$ 45,849,607	$ 43,981,155	$ 46,601,353	$ 43,259,109	$ 49,017,208	$ 55,273,384	$ 60,260,457	$ 64,595,890	$ 66,944,794	$ 69,362,530
Non-Rate Revenue											
Other Income	$ 1,193,181	$ 1,378,279	$ 1,378,279	$ 1,378,279	$ 1,378,279	$ 1,378,279	$ 1,378,279	$ 1,378,279	$ 1,378,279	$ 1,378,279	$ 1,378,279
Investment Income	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Non-Rate Revenue	$ 1,193,181	$ 1,378,279	$ 1,378,279	$ 1,378,279	$ 1,378,279	$ 1,378,279	$ 1,378,279	$ 1,378,279	$ 1,378,279	$ 1,378,279	$ 1,378,279
Total Revenues	$ 38,755,655	$ 47,227,886	$ 45,359,434	$ 47,979,632	$ 44,637,388	$ 50,395,487	$ 56,651,663	$ 61,638,736	$ 65,974,169	$ 68,323,073	$ 70,740,809
Operating Expenses											
Personnel	$ 12,364,151	$ 14,724,425	$ 15,710,704	$ 16,414,385	$ 17,306,934	$ 17,969,483	$ 18,914,660	$ 19,931,097	$ 21,018,437	$ 22,182,444	$ 23,429,382
Services, Supplies & Other	$ 16,458,955	$ 15,436,081	$ 16,207,885	$ 17,018,279	$ 17,869,193	$ 18,762,653	$ 19,700,786	$ 20,685,825	$ 21,720,116	$ 22,806,122	$ 23,946,428
Capital Outlay	$ 666,042	$ 438,000	$ 459,900	$ 482,895	$ 507,040	$ 532,392	$ 559,011	$ 586,962	$ 616,310	$ 647,125	$ 679,482
Other Operating Expenses	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Operating Expenses	$ 29,489,148	$ 30,598,506	$ 32,378,490	$ 33,915,559	$ 35,683,167	$ 37,264,528	$ 39,174,457	$ 41,203,884	$ 43,354,863	$ 45,635,691	$ 48,055,292
Net Operating Revenues	$ 9,266,507	$ 16,629,380	$ 12,980,945	$ 14,064,072	$ 8,954,220	$ 13,130,960	$ 17,477,206	$ 20,434,853	$ 22,619,306	$ 22,687,382	$ 22,685,517
Capital Expenditures	$ 10,950,264	$ 20,559,220	$ 27,155,000	$ 37,995,000	$ 47,075,000	$ 47,375,000	$ 34,375,000	$ 27,519,867	$ 6,393,252	$ 6,346,764	$ 6,267,936
Revolving Line of Principal Repayment			$ 18,250,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Grant Funded	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
SRF Funded	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Currently Funded	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Pay-Go Funded	$ 10,950,264	$ 20,559,220	$ 10,915,698	$ 9,351,843	$ 2,233,918	$ 3,597,138	$ 4,886,992	$ 5,810,804	$ 6,393,252	$ 6,346,764	$ 6,267,936
Debt Funded	$ -	$ -	$ 34,489,302	$ 28,643,157	$ 44,841,082	$ 43,777,862	$ 29,488,008	$ 21,709,063	$ -	$ -	$ -
Debt Service	$ 2,116,574	$ 2,676,489	$ 2,428,583	$ 3,954,223	$ 5,848,605	$ 8,759,740	$ 11,640,681	$ 13,609,432	$ 15,052,839	$ 15,093,171	$ 15,097,428
Net Income	$ 1,949,669	$ 5,893,671	$ (363,336)	$ 758,007	$ 871,697	$ 774,082	$ 949,533	$ 1,014,616	$ 1,173,215	$ 1,247,447	$ 1,320,153
Total Cash Balances											
Beginning Total Cash Balance	$ 21,587,470	$ 23,537,140	$ 29,430,811	$ 29,067,474	$ 29,825,481	$ 30,697,178	$ 31,471,261	$ 32,420,793	$ 33,435,410	$ 34,608,625	$ 35,856,072
Revolving Line of Credit Draw	$ 5,750,000	$ 12,500,000		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
I-Bank Reimbursements	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Calculated Change to Cash Balances	$ 1,949,669	$ 5,893,671	$ (363,336)	$ 758,007	$ 871,697	$ 774,082	$ 949,533	$ 1,014,616	$ 1,173,215	$ 1,247,447	$ 1,320,153
Ending Total Cash Balance	$ 23,537,140	$ 29,430,811	$ 29,067,474	$ 29,825,481	$ 30,697,178	$ 31,471,261	$ 32,420,793	$ 33,435,410	$ 34,608,625	$ 35,856,072	$ 37,176,225
Beginning Cash Balances by Fund											
Fund 717 (Emergency Reserve)	$ 3,042,715	$ 3,100,000	$ 3,100,000	$ 3,100,000	$ 3,100,000	$ 3,100,000	$ 3,100,000	$ 3,100,000	$ 3,100,000	$ 3,100,000	$ 3,100,000
Fund 713 (Rate Stabilization)	$ 2,479,026	$ 5,821,270	$ 9,163,514	$ 10,000,000	$ 10,000,000	$ 10,000,000	$ 10,000,000	$ 10,000,000	$ 10,000,000	$ 10,000,000	$ 10,000,000
Fund 716 (90 Day Operating Reserve)	$ 6,490,700	$ 7,271,297	$ 7,544,837	$ 7,983,737	$ 8,362,741	$ 8,798,589	$ 9,188,514	$ 9,659,455	$ 10,159,862	$ 10,690,240	$ 11,252,636
Fund 711 (Water Operations)	$ 9,575,029	$ 7,344,573	$ 9,622,460	$ 7,983,737	$ 8,362,741	$ 8,798,589	$ 9,182,747	$ 9,661,338	$ 10,175,548	$ 10,818,385	$ 11,503,435
Changes to Cash Balances by Fund											
Fund 717 (Emergency Reserve)	$ 57,285	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Fund 713 (Rate Stabilization)	$ 3,342,244	$ 3,342,244	$ 836,486	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Fund 716 (90 Day Operating Reserve)	$ 780,597	$ 273,540	$ 438,900	$ 379,003	$ 435,849	$ 389,924	$ 470,941	$ 500,407	$ 530,378	$ 562,396	$ 596,614
Fund 711 (Water Operations)	$ (2,230,456)	$ 2,277,887	$ (1,638,723)	$ 379,003	$ 435,849	$ 384,158	$ 478,591	$ 514,209	$ 642,837	$ 685,051	$ 723,539
Ending Cash Balances by Fund											
Fund 717 (Emergency Reserve)	$ 3,100,000	$ 3,100,000	$ 3,100,000	$ 3,100,000	$ 3,100,000	$ 3,100,000	$ 3,100,000	$ 3,100,000	$ 3,100,000	$ 3,100,000	$ 3,100,000
Fund 713 (Rate Stabilization)	$ 5,821,270	$ 9,163,514	$ 10,000,000	$ 10,000,000	$ 10,000,000	$ 10,000,000	$ 10,000,000	$ 10,000,000	$ 10,000,000	$ 10,000,000	$ 10,000,000
Fund 716 (90 Day Operating Reserve)	$ 7,271,297	$ 7,544,837	$ 7,983,737	$ 8,362,741	$ 8,798,589	$ 9,188,514	$ 9,659,455	$ 10,159,862	$ 10,690,240	$ 11,252,636	$ 11,849,250
Fund 711 (Water Operations)	$ 7,344,573	$ 9,622,460	$ 7,983,737	$ 8,362,741	$ 8,798,589	$ 9,182,747	$ 9,661,338	$ 10,175,548	$ 10,818,385	$ 11,503,435	$ 12,226,975
Coverage and Targets											
Debt Service Coverage (W/Out Reserves)	2.77x	4.96x	5.00x	3.56x	1.53x	1.50x	1.50x	1.50x	1.50x	1.50x	1.50x
Debt Service Coverage Target	1.50x	1.50x	1.50x	1.50x	1.50x	1.50x	1.50x	1.50x	1.50x	1.50x	1.50x
Days' Cash (Includes only Funds 711 & 716)	181	205	180	180	180	180	180	180	181	182	183
Days' Cash Target	180	180	180	180	180	180	180	180	180	180	180

Water department

Department Description

The mission of the Water Department is to ensure public health and safety by providing a clean, safe, and reliable supply of water. We strive to serve the community in a courteous, efficient, cost-effective and environmentally sustainable manner.

We are passionate about our work and try to instill our values of integrity, innovation, objectivity, professionalism, teamwork, and transparency in everything we do. We collect water, treat and test it, move it, store it, distribute it, track how much is used, and bill our customers for their use. We're at the end of the phone when customers call with questions and we're the smiling faces they see when they visit the department. We educate our customers about the quality of their water, how to use less water, and we provide them the tools to do so. Our work includes the maintenance and operation of the Loch Lomond Recreation area, as well as the protection of the Majors, Liddell, Newell Creek, Zayante, and Laguna watersheds. We are stewards of an important community asset: the water system and all it entails, as well as a range of natural resources and ecosystems that we and many species depend upon, and that are important elements of a sustainable community. We take pride in meeting the diverse needs of the broad region we serve.

The department is organized into operational and administrative sections. Operational sections include Production, Water Quality Lab, Distribution, Water Resources, and the Loch Lomond Recreation area. These sections are responsible for managing the watersheds by collecting, treating, and testing untreated and treated water, and storing and distributing treated water to our customers. The administrative sections are comprised of Finance and Administration, Engineering, Conservation, Customer Service, and Community Relations. Staff in these sections provide leadership, plan and implement the Capital Improvement Program (CIP), develop and implement financial plans, read meters, bill customers and collect revenues, help our customers conserve water, and support active community outreach and engagement efforts covering a range of department activities.

Every day department staff work hard to produce and deliver millions of gallons of water to 96,000 customers while performing all the related utility, land, and natural resource management activities, that often happen behind the scenes, but play a part in providing reliable and high quality water service to our community.

FY 2018 Accomplishments

Water Supply Planning and Delivering a Substantially Increased Capital Program

The Water Department has embarked on an ambitious and historic 10 year/$300 million Capital Improvement Program (CIP) to reinvest in the utility's backbone infrastructure while planning and evaluating a supplemental water supply project, following the approach recommended by the Water Supply Advisory Committee (WSAC).

In order to accomplish this critical work, the Department has engaged an engineering firm in what is called a program management contract. This approach allows the department to augment in-house engineering staff with the additional technical resources and expertise needed to deliver the CIP.

Major water supply and capital reinvestment planning activities during FY 2018 include:

- Providing the Santa Cruz Water Commission with comprehensive quarterly reports on the status of implementing the WSAC recommended work plan; including efforts related to demand management programs, groundwater storage strategies involving both passive and active recharge of regional aquifers, advanced treated recycled water, and seawater desalination. The City Council and Water Commission continued their annual, joint meeting to discuss progress in each of these areas.

- Producing and distributing the 2017 WSAC Annual Report, "Our Water, Our Future," describing progress made to date on implementing the WSAC recommendations.
- Working in cooperation with the various regional water agencies to establish effective working relationships, engage in regional water resource planning and management activities such as the implementation of the Sustainable Groundwater Management Act; working with the Soquel Creek, San Lorenzo Valley, and Scotts Valley Water Districts on potential projects for the conjunctive use of regional surface and groundwater resources; and working specifically with the Soquel Creek Water District on water quality blending studies that will assess the feasibility of delivering treated surface water from Santa Cruz to Soquel Creek's service area, which is entirely dependent on groundwater.
- Initiating the Riverbank Filtration study to assess the feasibility of drawing low turbidity water from the system, at times when the surface water is very turbid, as a means to increase available water supply and system reliability during storm events.

- Continuing focused project planning for the Newell Creek Dam Inlet/Outlet Pipeline project, which is the largest capital project currently under development. Key FY 2018 milestones for this project, which is required by the State Division on the Safety of Dams, include initiating CEQA, preparing an updated Emergency Action Plan (EAP) and Dam Failure Inundation Maps, and creating a lake model to support placement of the new inlets/outlets structures, as well as for use in ongoing lake water quality planning and management activities.
- Engaging a specialized consultant to help us apply for $30 million in Drinking Water State Revolving Fund (DWSRF) loan for the GHWTP Concrete Tanks project which, if successful, would offer financing at a substantially lower interest rate than typical municipal revenue bond financing would provide.

Infrastructure
Infrastructure
Infrastructure

As planning for the department's large CIP ramped up, several major capital projects were completed or achieved major milestones during FY 2018, including:

- Completing the Bay Street Tanks project by installing new landscaping and solar panels on the $26 Million multi-phased and multi-year project.
- Finishing the design work for the replacement of the University #5 Tank, as well as installing the maintenance tank to be used while the permanent tank is under construction.
- Completing a remodel and expansion of the department's offices at Locust Street to accommodate additional staff and the program management team.
- Initiating the permitting work for the replacement of the Felton Diversion's inflatable dam, which is used when water is pumped from the San Lorenzo River to the Loch Lomond Reservoir.

- Completing a comprehensive conditions assessment of the Loch Lomond Reservoir spillway, which found no deficiencies.
- Completing the construction of 25,639 linear feet (4.86 miles) of raw water and treated water pipelines at an average cost of $415 per linear foot ($2.2 M/mile) including: 3,110 linear feet on Cedar Street, 3,710 linear feet on River Street, 16,500 linear feet in Phase 3 of the North Coast Pipeline replacement project, 1,095 feet on 14th Avenue in Live Oak, 400 linear feet in Harvey West Park, 200 linear feet on Robertson, 350 linear feet on Thurber Lane, and 874 linear feet on Carol Avenue.

Customer Services, Water Use Efficiency, and Community Outreach & Education

A strong customer service ethic is foundational to the work we do in the utility. We help customers with inquiries regarding their bills or conservation rebates, explain our work in the community, provide education on the water system, and keep the public informed on progress made on the water supply project. The department also provides billing and customer service on behalf of the City's three utilities: water, refuse, and sewer. In FY 2018, we:

- Supported the implementation of and worked with customers to respond to questions related to the July 1, 2017 rate increases for all three utilities.
- Oversaw development of and began distributing to our customers the "Know Your Water Service" guidebook that provides basic water service information to our customers, including information about efficient use of water.
- Produced and distributed the Second Annual Report on progress implementing the Council approved recommendations of the Water Supply Advisory Committee (WSAC).

- Produced and distributed spring and fall newsletters for the Santa Cruz Municipal Utilities, called The SCMU Review. The Fall 2017 version focused on Newell Creek Dam, and was a masterpiece of candid, informative writing covering a topic that was high in the public's consciousness due to the situation at that state's Oroville Dam in the winter of 2017.
- Implemented a Home Water Survey program in support of the new leak forgiveness policy developed as part of applying the new water rate structure.
- Improved the large landscape water budget program by providing hourly consumption data online, promoting field surveys, and hosting workshops and trainings.
- Continued to offer and promote financial incentive programs for residential, commercial, and landscape customers.
- Continued to administer water conservation ordinances, including prohibitions against water waste, requirements for water-efficient landscapes in new development, and plumbing fixture retrofit requirements; with the last program reaching a milestone of 10,000 properties processed since it began in 2003.
- Began planning and designing several new programs as contemplated in the Water Conservation Master Plan.
- Designed and implemented an advanced metering infrastructure project for large landscapes, parks, and school sites to assess the feasibility of such technology. The new meters provide more timely information to customers to help them better manage their water use.

Water Quality & Treatment

The Water Department's core goal is to ensure public health by providing clean and safe water to our customers. Our water quality and treatment functions ensure that water delivered meets all state and federal drinking water regulations. Some key achievements of these groups in FY 2018 include:

- Successful completion of all required drinking water monitoring and compliance sampling, analyses, and reporting for regulated contaminants;

maintaining the Department's strong performance for providing a water supply that is consistently in compliance with standards set by state and federal regulations.

- Began the implementation of the new "The NELAC Institute" standards to maintain the Water Quality Lab's State of California Water Resources Control Board Environmental Laboratory Accreditation Program.
- Supported the department's Source Winter Water Assessment/Winter Water Monitoring programs by collecting and processing samples and reviewing and commenting on consultant reports and analyses.

- Staff expanded the list of certified analytical methods to include dissolved organic carbon and UV254 and Heterotrophic Plate Counts by Pour Plate and Enterococci analyses, and also created and maintained a picture library of cyanobacteria, other algal species, and zooplankton to support reservoir management and treatment planning activities.
- Responded to concerns about home water quality following the lead contamination in Flint, Michigan, and the colored water issues in Fresno, California, by providing free lead testing in homes and following up on the State's directives regarding lead testing in elementary schools.
- Provided water quality testing services to support a wide range of operational activities including: infrastructure repair projects, treatment plant operations, and treatment plant process pilot studies to evaluate alternate combinations of chemicals or treatment processes to address changing water quality.

- Participated in work to update to the Sanitary Survey, which is a detailed evaluation of surface water sources and an assessment of vulnerability due to contamination.

System Production & Maintenance

Every day,the Water Department produces and delivers millions of gallons of water to nearly 100,000 customers residing within and outside of the City. A staff of water treatment operators and maintenance professionals is charged with operating and maintaining a set of water facilities that include a raw water storage reservoir, multiple flowing sources of supply, wells producing groundwater, untreated and treated water pipelines, treated water storage tanks, pump stations, and treatment facilities. Key accomplishments during FY 2018 include:

- Producing and delivering over 2.6 billion gallons of water to customers.
- Designing and installing a new chemical feed system at the water treatment plant.
- Using an analytical technique called "jar testing" to assess the feasibility and benefits of switching the main coagulant used in water treatment to aluminum chlorohydrate (ACH) to produce better quality water and re-purposing of one of the treatment plant's bulk chemical storage tanks to receive ACH when its use was found to be highly beneficial.
- Replacing a number of pressure reducing stations to improve our ability to deliver water to customers that meet standard pressures.
- Providing numerous tours of the Graham Hill Water Treatment Plant (GHWTP), both for members of the public, as well as for employees and contractors, working on capital projects such as the GHWTP Concrete Tank Rehabilitation Project.
- Playing an active role in planning for capital improvements to the water system that are under development as part of the major water system reinvestment initiative.

Water Distribution

Our State certified Water Distribution Operators provide 24/7 response to interruptions of water service to our 100,000 customers, in addition to doing the construction of new water distribution lines summarized previously. Distribution crews respond to outages caused by vehicles hitting fire hydrants, damage to the water system caused by actions of other contractors working in the public right of way like those installing fiber optics cable to support high speed internet service. They perform emergency repairs of raw water transmission lines, maintain and patrol miles of pipeline right of way, and keep culverts clean and right of ways accessible so that crews can promptly reach leaks and control valves that need to be shut off prior to leak repairs. Additional accomplishments for the Distribution Section in FY 2018 include:

- Repairing or replacing 90 leaking service lines.
- Providing emergency repairs for 33 leaking water mains.
- Flushing all of the water system's dead end distribution mains and completing high-velocity uni-directional flushing on more than half of the 300 miles of distribution mains.

Environmental Stewardship

Providing high quality drinking water begins with protecting and managing our watersheds for both water supply production and for the natural resources and ecosystems that are an integral part of our stewardship role. Included in this role are a wide range of activities such as:

- Monitoring and reporting on our use of water rights.
- Ensuring our operations and maintenance activities comply with environmental regulations.

- Working with federal, state, and regional agencies to plan for and protect diverse ecosystems that support sensitive species including coho salmon and steelhead trout, Mt. Hermon June beetles, and Red Legged Frogs.
- Removing invasive species that compete with natural vegetation and addressing conditions that could exacerbate the ever present threat of wildfire.

We also provide high quality recreation programs and natural resource interpretive services at Loch Lomond Reservoir and Park. Additional accomplishments in FY 2018 include:

- Defended Newell Creek watershed property from the adjacent Bear Fire with the assistance of Cal Fire and Santa Cruz Fire.
- Patrolled watershed lands and performed culvert clearing, trail cleaning, and firebreaks maintenance, all of which reduce the potential for catastrophic failures from storms or wildfire.
- Continued implementing land management and protection activities for the Mt. Hermon June beetle, a native and threatened species, and were rewarded by observing the beetle on the Bonny Doon mitigation site for the first time in several years.
- Implemented a new volunteer invasive species management program for our Loch Lomond property that has generated good participation.
- Made major progress on finalizing a Habitat Conservation Plan (HCP) for threatened and endangered anadromous salmonids by completing new biological effects analysis and drafting chapters 1-3 and 6 of the HCP.
- Initiated work to address a number of long-standing water rights issues and started the CEQA process that will need to be completed prior to taking the proposed changes to the State Water Resources Control Board for review and action.

- Continued to monitor and take action where needed, to protect the City's water rights, including successfully asserting the water rights seniority on Liddell Creek with the State Water Resources Control Board and Coastal Commission, related to the proposed construction and operation of a private well using the same resources.
- Participated in environmental review of a diverse range of proposed programs and projects which could pose impacts to our water source watersheds including the County's proposed cannabis licensing program.
- Partnered with local schools to provide watershed education.
- Expanded the Trout in the Classroom program with the American Fisheries Society.
- Served a record number of Loch Lomond recreation and interpretive program customers since re-opening the park after the closure caused by the 2014/2015 drought.

Working Smarter & More Collaboratively

Water Department staff has an enormous amount of work to accomplish, in support of the Department's mission, and faces a growing workload across many divisions as it works to deliver the planned reinvestments and new investments in the City's drinking water system. To accomplish these tasks, the department is implementing a variety of "work smarter" strategies including:

- Initiating Department-wide skills development in problem solving, communications, and meeting skills to establish a common language and common expectations, while increasing the efficiency of coordination and collaboration activities that are needed for success in meeting the challenges ahead.
- Using cross functional teams to do work that has multiple dimensions. For example, water loss control, which involves staff from Conservation, Engineering, Meters Shop, Production, and Distribution, work to comply with new state regulations that require utilities to complete water loss audits with those audits being validated by third party independent review.

- Recognizing and addressing both the utility's need to transfer knowledge from senior level employees approaching retirement and to develop critical technical skills involving mechanical, electrical, and instrumentation specialties. In FY 2018, two Utility Maintenance Technician Trainee programs were implemented as a way to "grow our own" employees with the specialized technical skills needed to operate and maintain the water system. Additionally, in FY 2018, the department developed a plan to double fill the most senior mechanical maintenance position, who will spend his final year training the many newer engineering and operating staff, as well as key staff in the program management contract, on the details of the system's operation.

Last, we are proud to announce that the City of Santa Cruz received recognition from the Alliance for Water Efficiency for achieving a 100% compliance with the AWWA Standard for Water Conservation Program Operation and Management and became the first utility in the nation to earn its platinum status.

FY 2019 Goals

In FY 2019, the department plans to continue focusing on its mission to provide high quality drinking water while protecting our watershed and educating our customers. To fulfill our mission, we must:

- Continue to deliver a reliable and high quality supply of water that complies with all federal and state drinking water standards to our 96,000 customers, 24 hours a day, 7 days per week, and 365 days per year.
- Focus on CIP project implementation, with key initiatives being reinvestment in the water system's backbone infrastructure.
- Continue to develop and implement the financial management and planning strategies outlined in the 2016 Long Range Financial Plan, in order to fund reinvestments in the water system, and do so in a manner that protects rate-payer interest and provides customers with the best value we can deliver for their contributions to infrastructure rehabilitation and replacement efforts.
- Plan for our customer's future drinking water sufficiency through the implementation on water conservation programs and work in order to determine the right supplemental water supply project for our community.

- Continue to invest in our workforce to support their ability to meet the challenges we face, and build an effective and well adapted workforce for today and tomorrow.
- Continue to build upon organizational development work. Began in 2016 to create a strong, high performing, and highly aligned organization that is nimble, responsive, customer focused, and actively embraces its multi-dimensional role as stewards of infrastructure, natural resources, and water resources that are critically important to the quality of life, public health, and safety of our community.

We will accomplish these goals by engaging our dedicated staff, working with other City Departments, working with state and federal regulators and funders, as well as working with other regional partners.

The Water Department's core mission fits squarely with the City Council's Strategic Goal #2: Public Safety & Well-Being. Without high quality drinking water, the community health and safety standards would not be met. Additionally, the department supplies the Fire Department with the water necessary to fight fires.

The balance of work planned for FY 2019 is centered on the City Council's Strategic Goal #3: Infrastructure. The Department plans to accomplish these additional goals for FY 2018:

- Continuing to implement the WSAC recommended work plan including working collaboratively with Soquel Creek Water District on water quality compatibility studies, completing ASR pilot testing, and the preliminary alternatives analysis of recycled water and seawater desalination as back up supply augmentation options.

- Initiating the NEPA/CEQA process for the draft aquatic-species Habitat Conservation Plan/Section 2081 Permit with NOAA and California DFW.
- Completing CEQA work to address long-standing water rights issues and sending the package of requested changes to the State Water Resources Control Board for review and action.
- Implementing all relevant processes, tools, and procedures, developed as a part of our CIP program management contract to the rest of the department to align work processes and take advantage of new tools and techniques.
- Continuing to develop and implement cost-effective financial management and planning strategies for funding the CIP, including finalizing applications for funding on eligible projects to the Drinking Water State Revolving Fund.
- Assessing opportunities for implementing additional energy efficiency measures identified through an energy master planning effort.
- Completing construction on several significant infrastructure rehabilitation and replacement projects including:
    - The new inflatable dam at the Felton Diversion.
    - University Reservoir No. 5.
- Completing preliminary engineering, environmental review, and design for capital improvement projects to:
    - Replace four, 60-year-old concrete tanks at the Graham Hill Water Treatment Plant with new tanks.
    - Rehabilitate or replace the Newell Creek Dam Inlet/Outlet Pipeline.
    - Inform decision-making on whether to repair or replace all or parts of the Newell Creek Pipeline from Loch Lomond to Graham Hill Water Treatment Plant.
    - Inform decision-making on whether the diversion dams on Laguna and Majors can be modified to improve the efficiency and reduce environmental impacts.
    - Replace the aging water main on Water Street.

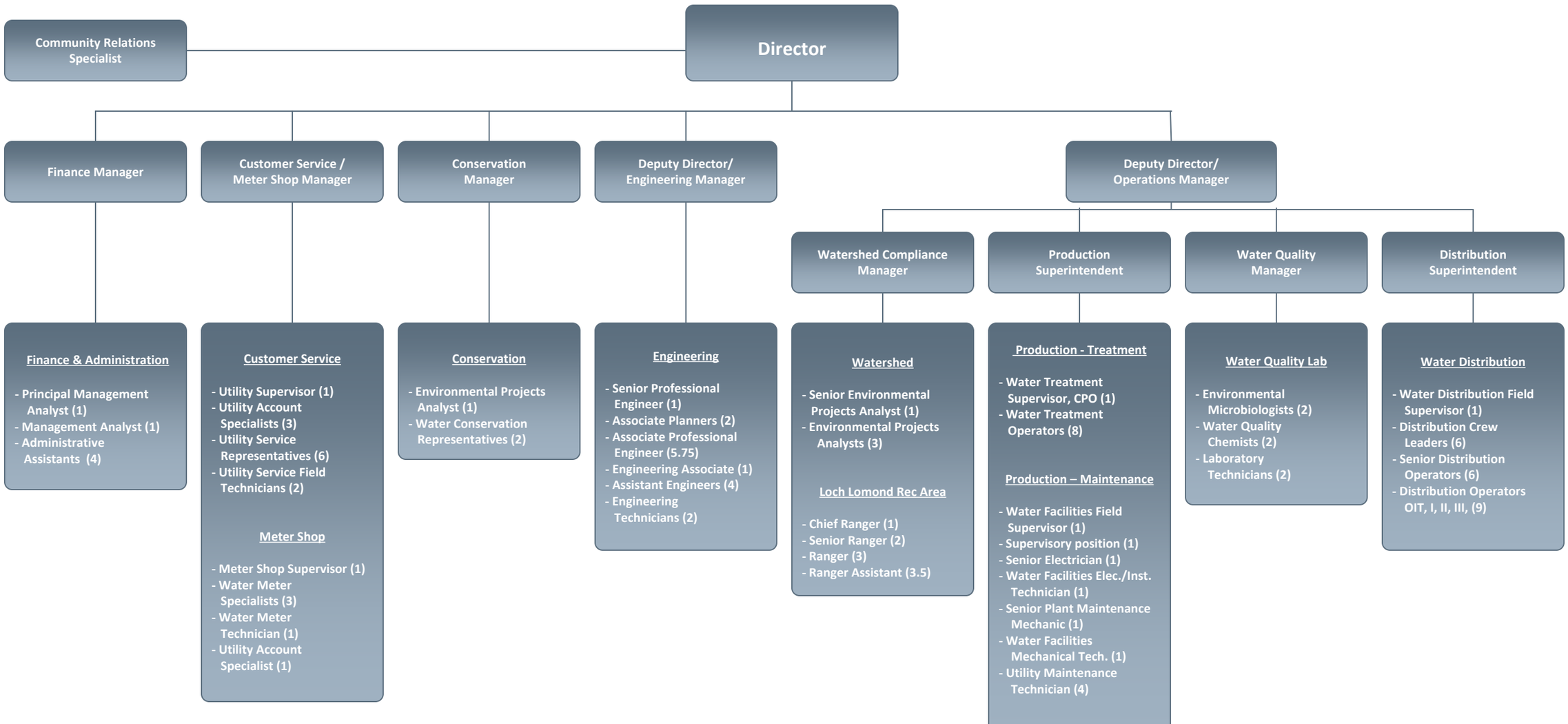
    - Inform decision-making on how to address aging infrastructure treatment process issues, such as solids production and long term water treatment needs related to potential supplemental supply options at the GHWTP.
- Maintaining water service water quality by cleaning and inspecting all potable water storage reservoirs.
- Developing a business case for the use of Advances Metering Infrastructure in our system.
- Continuing to engage with regional partners in our area to plan for sufficient water to serve the mid and northern Santa Cruz County areas.

DEPARTMENT SUMMARY

		Fiscal Year* 2017 Actuals	Fiscal Year 2018 Adopted Budget	Fiscal Year 2018 Amended* Budget	Fiscal Year 2018 Estimated Actual	Fiscal Year 2019 Proposed
EXPENDITURES BY CHARACTER:						
Personnel Services		11,465,387	14,249,469	14,501,384	12,380,704	14,724,425
Services, Supplies, and Other Charges		10,750,983	14,663,254	17,769,603	14,190,854	15,436,081
Capital Outlay		369,864	175,000	692,680	666,736	438,000
Debt Service		1,656,266	2,091,114	2,091,114	2,091,115	2,676,489
Total Expenditures		24,242,500	31,178,837	35,054,781	29,329,409	33,274,995
EXPENDITURES BY ACTIVITY:						
Water Administration	7101	4,671,256	5,510,616	5,861,937	5,052,869	6,067,687
Water Engineering	7102	2,318,507	3,157,517	5,924,786	4,045,329	4,102,547
Water Customer Services	7103	1,467,008	1,803,922	1,803,922	1,795,400	1,790,583
Water Conservation	7104	599,642	1,233,608	1,248,461	914,382	1,272,934
Water Resources	7105	1,196,722	2,667,347	2,900,449	1,515,674	2,206,623
Water Production	7106	5,678,113	6,682,228	6,656,218	6,294,416	6,790,886
Water Quality	7107	948,151	1,207,518	1,333,002	1,110,407	1,535,372
Water Distribution	7108	4,066,836	4,744,134	5,059,031	4,719,334	4,599,237
Water Recreation	7109	946,444	1,186,858	1,186,858	860,070	1,213,129
Water meter Shop	7113	673,365	893,037	989,003	930,413	1,019,508
Meter Shop	7118	20,191	938	-	-	-
Water Debt Service	7140	1,656,266	2,091,114	2,091,114	2,091,115	2,676,489
Subtotal Other Funds		24,242,500	31,178,837	35,054,781	29,329,409	33,274,995
Total Expenditures		24,242,500	31,178,837	35,054,781	29,329,409	33,274,995
RESOURCES BY FUND						
Water	711	29,782,732	41,340,450	41,683,450	38,717,595	43,885,642
Water Rate Stabilization Fund	713	-	-	-	2,384,543	3,342,244
Water System Development Fees Fund	715	1,342,726	825,000	825,000	1,208,700	1,600,000
Total Resources		31,125,457	42,165,450	42,508,450	42,310,838	48,827,886
		FY 2017			**FY 2018**	**FY 2019**
TOTAL AUTHORIZED PERSONNEL:		106.50			113.25	116.25

*Sums may have discrepancies due to rounding

Water Department



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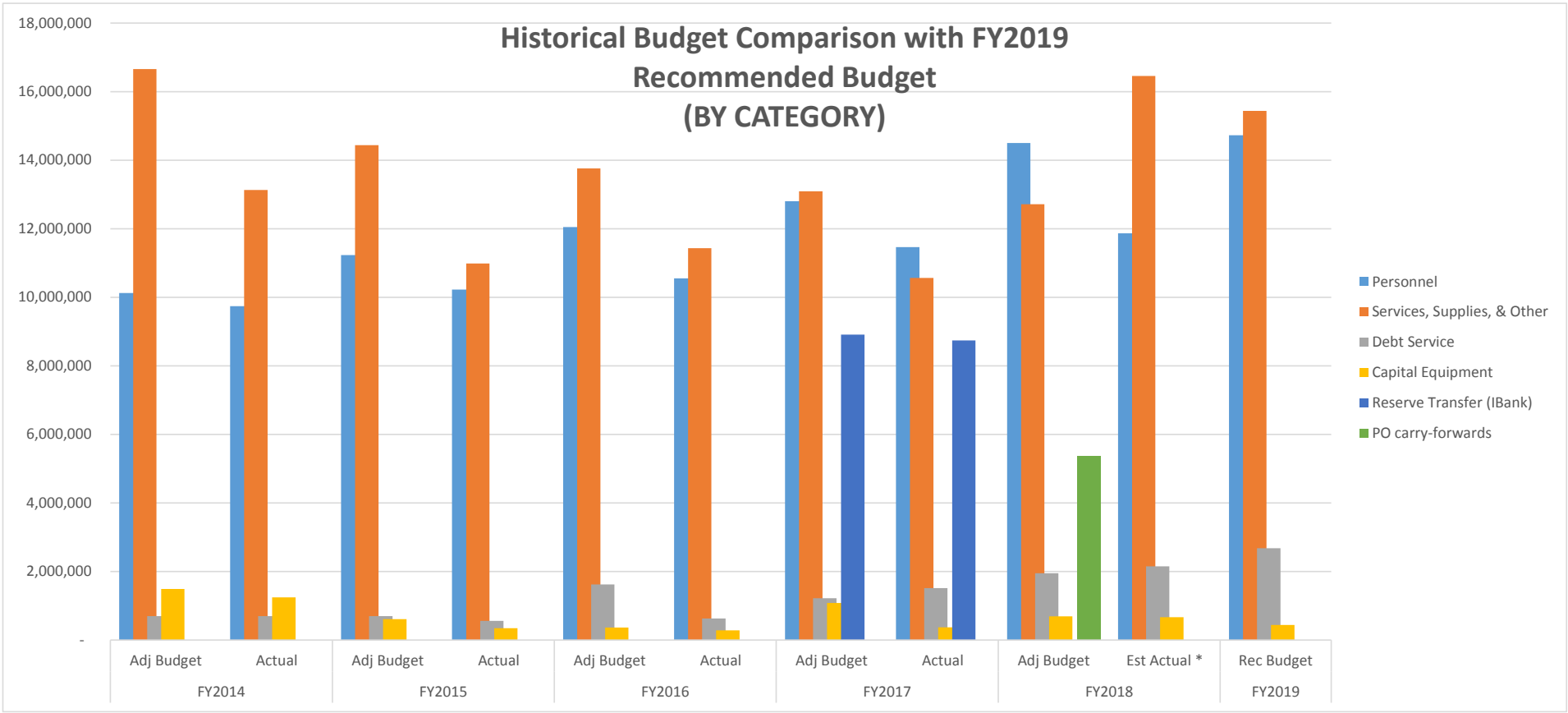
Recommended FY2019 Operating Budget: Fund 711

BY CATEGORY

	FY2014		FY2015		FY2016		FY2017		FY2018		FY2019
	Adj Budget	Actual	Adj Budget	Actual	Adj Budget	Actual	Adj Budget	Actual	Adj Budget	Est Actual *	Rec Budget
Personnel	10,123,934	9,737,978	11,229,313	10,225,879	12,045,806	10,552,312	12,802,461	11,465,387	14,501,384	11,864,152	14,724,425
Services, Supplies, & Other	16,655,255	13,127,905	14,439,537	10,988,214	13,761,627	11,431,083	13,091,074	10,563,256	12,717,698	16,458,957	15,436,081
Debt Service	700,404	699,734	699,110	557,249	1,623,943	629,061	1,220,550	1,515,413	1,949,327	2,152,826	2,676,489
Capital Equipment	1,493,132	1,244,269	608,134	349,146	367,484	286,108	1,083,050	369,864	692,680	666,042	438,000
Reserve Transfer (IBank)	-	-	-	-	-	-	8,909,823	8,743,468	-	-	-
PO carry-forwards		-		-		-		-	5,372,805	-	-
TOTAL Adjusted Budget	**28,972,725**	**24,809,886**	**26,976,094**	**22,120,487**	**27,798,861**	**22,898,563**	**37,106,958**	**32,657,388**	**35,233,893**	**31,141,977**	**33,274,995**

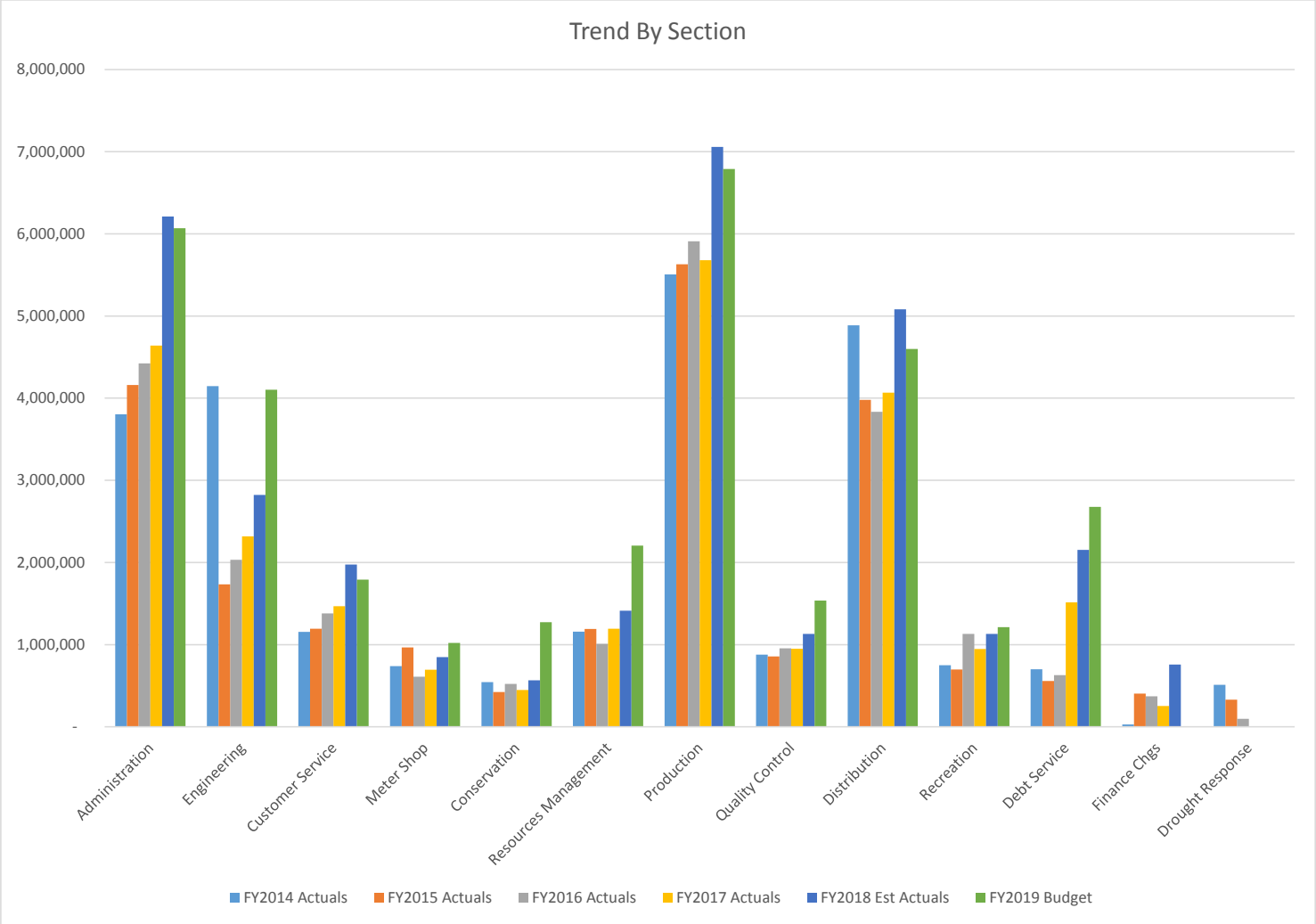


* FY2018 estimated actuals includes encumbrances to be carried-forward into FY2019.

Recommended FY2019 Operating Budget: Fund 711

BY SECTION

	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019
	Actual	Actual	Actual	Actual	Est Actual	Rec Budget
Administration	3,803,441	4,159,581	4,423,118	4,638,890	6,211,076	6,067,687
Engineering	4,147,378	1,732,543	2,033,528	2,318,507	2,823,216	4,102,547
Customer Service	1,156,201	1,193,137	1,379,905	1,467,008	1,976,251	1,790,583
Meter Shop	739,258	966,975	608,770	693,555	846,965	1,019,508
Conservation	544,960	422,637	521,443	446,381	564,643	1,272,934
Resources Management	1,158,906	1,190,178	1,009,331	1,194,622	1,411,608	2,206,623
Production	5,505,854	5,630,763	5,908,516	5,678,113	7,058,041	6,790,886
Quality Control	879,300	856,347	955,162	948,151	1,129,287	1,535,372
Distribution	4,886,432	3,978,580	3,832,777	4,066,836	5,081,789	4,599,237
Recreation	750,497	697,216	1,131,212	946,444	1,129,287	1,213,129
Debt Service	699,734	557,249	629,061	1,515,413	2,152,826	2,676,489
Finance Chgs	28,169	404,348	370,000	252,768	756,988	-
Drought Response	509,756	330,933	95,741	-	-	-
TOTAL	**24,809,886**	**22,120,487**	**22,898,563**	**24,166,688**	**31,141,977**	**33,274,995**



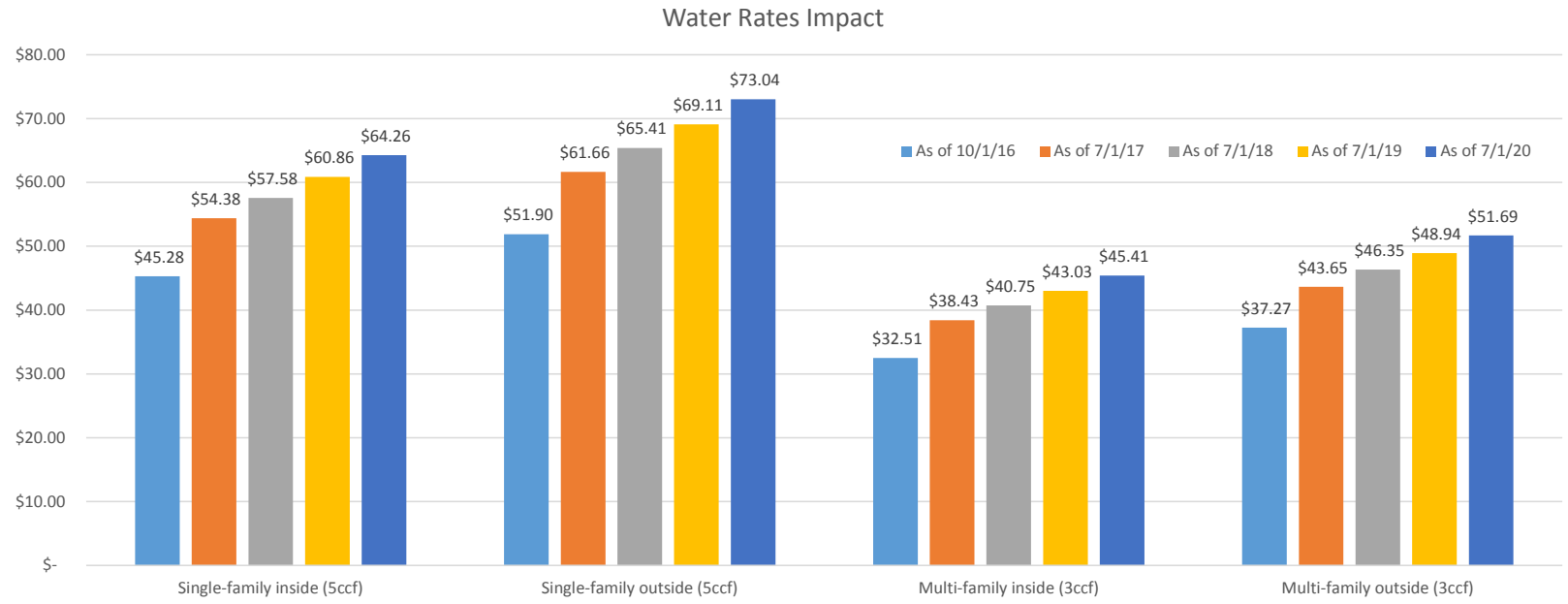
Budget Trends by Percent

	% of Change: Actuals					
	FY2014-15	FY2015-16	FY2016-17	FY2017-18	Average	FY2014-18
Personnel	5.0%	3.2%	8.7%	3.5%	5.1%	21.8%
Services, Supplies, & Other	-16.3%	4.0%	-7.6%	55.8%	9.0%	25.4%
Debt Service	-20.4%	12.9%	140.9%	42.1%	43.9%	207.7%
Capital Equipment	-71.9%	-18.1%	29.3%	80.1%	4.8%	-46.5%
TOTAL (w/o transfers)	**-10.8%**	**3.5%**	**4.4%**	**30.2%**	**6.8%**	**25.5%**

	% of Change: Budget						
	FY2014-15	FY2015-16	FY2016-17	FY2017-18	FY2018-19	Average	FY2014-19
Personnel	10.9%	7.3%	6.3%	13.3%	1.5%	7.9%	45.4%
Services, Supplies, & Other	-13.3%	-4.7%	-4.9%	-2.9%	21.4%	-0.9%	-7.3%
Debt Service	-0.2%	132.3%	-24.8%	59.7%	37.3%	40.9%	282.1%
Capital Equipment	-59.3%	-39.6%	194.7%	-36.0%	-36.8%	4.6%	-70.7%
TOTAL (w/o transfers)	**-6.9%**	**3.0%**	**1.4%**	**5.9%**	**11.4%**	**3.0%**	**14.8%**

	Budget vs Actuals				
	FY2014	FY2015	FY2016	FY2017	FY2018
Personnel	-3.8%	-8.9%	-12.4%	-10.4%	-18.2%
Services, Supplies, & Other	-21.2%	-23.9%	-16.9%	-19.3%	29.4%
Debt Service	-0.1%	-20.3%	-61.3%	24.2%	0.0%
Capital Equipment	-16.7%	-42.6%	-22.1%	-65.8%	-3.8%
TOTAL (w/o transfers)	**-14.4%**	**-18.0%**	**-17.6%**	**-15.2%**	**-11.6%**

	Percent of Total Budget					
	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019
Administration	15.3%	18.8%	19.3%	19.2%	19.9%	18.2%
Engineering	16.7%	7.8%	8.9%	9.6%	9.1%	12.3%
Customer Service	4.7%	5.4%	6.0%	6.1%	6.3%	5.4%
Meter Shop	3.0%	4.4%	2.7%	2.9%	2.7%	3.1%
Conservation	2.2%	1.9%	2.3%	1.8%	1.8%	3.8%
Resources Management	4.7%	5.4%	4.4%	4.9%	4.5%	6.6%
Production	22.2%	25.5%	25.8%	23.5%	22.7%	20.4%
Quality Control	3.5%	3.9%	4.2%	3.9%	3.6%	4.6%
Distribution	19.7%	18.0%	16.7%	16.8%	16.3%	13.8%
Recreation	3.0%	3.2%	4.9%	3.9%	3.6%	3.6%
Debt Service	2.8%	2.5%	2.7%	6.3%	6.9%	8.0%
Finance Chgs	0.1%	1.8%	1.6%	1.0%	2.4%	0.0%
Drought Response	2.1%	1.5%	0.4%	0.0%	0.0%	0.0%
TOTAL	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**



Totals shown are for water only and do not include utility and franchise taxes.
Single-family rate assumes 5/8-in meter.
Multi-family rate assumes 1 1/2-in meter for a 16-unit complex.

Inside City Rates

Inside City Fixed Rates - Ready to Serve					
	Ready to Serve ($/Meter)				
Meter Size	**As of 10/1/16**	**As of 7/1/17**	**As of 7/1/18**	**As of 7/1/19**	**As of 7/1/20**
5/8-in	$ 8.78	$ 9.53	$ 10.18	$ 10.71	$ 11.26
3/4-in	$ 9.01	$ 9.78	$ 10.45	$ 10.99	$ 11.56
1-in	$ 9.70	$ 10.53	$ 11.25	$ 11.83	$ 12.44
1 1/2-in	$ 10.61	$ 11.52	$ 12.31	$ 12.94	$ 13.61
2-in	$ 13.14	$ 14.26	$ 15.24	$ 16.02	$ 16.85
3-in	$ 31.74	$ 34.45	$ 36.82	$ 38.71	$ 40.71
4-in	$ 38.63	$ 41.93	$ 44.81	$ 47.11	$ 49.55
6-in	$ 54.70	$ 59.37	$ 63.45	$ 66.71	$ 70.16
8-in	$ 73.07	$ 79.31	$ 84.76	$ 89.11	$ 93.73
10-in	$ 93.74	$ 101.75	$ 108.73	$ 114.32	$ 120.24
Fire Service - All Sizes *	$1 /month	$1.09 /month	$1.15 /month	$1.21 /month	$1.26 /month

Inside City Volume (Commodity) Rates - Consumption					
	As of 10/1/16	**As of 7/1/17**	**As of 7/1/18**	**As of 7/1/19**	**As of 7/1/20**
Single Family Residential and Multi-Family Residential (calculation is based upon the number of dwelling units multiplied by the tier width)					
Tier 1 (0-5 ccf**)	$ 5.75	$ 6.24	$ 6.66	$ 7.01	$ 7.37
Tier 2 (6-7 ccf)	$ 6.42	$ 6.97	$ 7.45	$ 7.83	$ 8.24
Tier 3 (8-9 ccf)	$ 7.41	$ 8.05	$ 8.60	$ 9.04	$ 9.51
Tier 4 (10 ccf & above)	$ 8.79	$ 9.54	$ 10.20	$ 10.72	$ 11.28
Commerical: Business, Industrial, Restaurant, Hotel, Golf, Municipal, Bulk, Fire Service Leaks					
Uniform	$ 6.57	$ 7.13	$ 7.62	$ 8.01	$ 8.43
UCSC					
Uniform	$ 6.70	$ 7.27	$ 7.77	$ 8.17	$ 8.60
Landscape / Irrigation (tiers based on percent of water budget)					
Tier 1 (≤100% of budget)	$ 6.86	$ 7.44	$ 7.95	$ 8.36	$ 8.80
Tier 2 (101% - 150%)	$ 9.15	$ 9.93	$ 10.62	$ 11.16	$ 11.74
Tier 3 (150% & above)	$ 10.27	$ 11.14	$ 11.91	$ 12.52	$ 13.17
Elevation Surcharge					
As Applicable	$ 0.42	$ 0.46	$ 0.49	$ 0.51	$ 0.54

Inside City Volume (Commodity) Rates - Infrastructure Reinvestment Fee					
	As of 10/1/16	**As of 7/1/17**	**As of 7/1/18**	**As of 7/1/19**	**As of 7/1/20**
Single Family Residential and Multi-Family Residential (calculation is based upon the number of dwelling units multiplied by the tier width)					
Tier 1 (0-5 ccf**)	$ 1.55	$ 1.73	$ 1.82	$ 2.02	$ 2.23
Tier 2 (6-7 ccf)	$ 2.32	$ 2.59	$ 2.73	$ 3.03	$ 3.34
Tier 3 (8-9 ccf)	$ 2.86	$ 3.20	$ 3.37	$ 3.74	$ 4.13
Tier 4 (10 ccf & above)	$ 3.85	$ 4.30	$ 4.53	$ 5.02	$ 5.55
Commerical: Business, Industrial, Restaurant, Hotel, Golf, Municipal, Bulk					
Uniform	$ 2.27	$ 2.53	$ 2.66	$ 2.96	$ 3.27
UCSC					
Uniform	$ 2.40	$ 2.68	$ 2.82	$ 3.13	$ 3.46
Landscape / Irrigation (tiers based on percent of water budget)					
Tier 1 (≤100% of budget)	$ 2.82	$ 3.14	$ 3.31	$ 3.67	$ 4.06
Tier 2 (101% - 150%)	$ 4.22	$ 4.71	$ 4.96	$ 5.50	$ 6.08
Tier 3 (150% & above)	$ 4.27	$ 4.77	$ 5.02	$ 5.57	$ 6.16

Inside City Volume (Commodity) Rates - Rate Stabilization Fee					
	As of 10/1/16	**As of 7/1/17**	**As of 7/1/18**	**As of 7/1/19**	**As of 7/1/20**
All accounts (Per ccf)	$ -	$ 1.00	$ 1.00	$ 1.00	$ 1.00

More information is available online at www.cityofsantacruz.com/h2orates

* This amount may be billed annually and will be added to any other applicable water use fixed and volume charges.

** ccf equals 100 cubic foot of water

Outside City Rates

Outside City Fixed Rates - Ready to Serve					
	Ready to Serve ($/Meter)				
Meter Size	**As of 10/1/16**	**As of 7/1/17**	**As of 7/1/18**	**As of 7/1/19**	**As of 7/1/20**
5/8-in	$ 10.05	$ 10.91	$ 11.66	$ 12.26	$ 12.89
3/4-in	$ 10.32	$ 11.20	$ 11.97	$ 12.59	$ 13.24
1-in	$ 11.11	$ 12.06	$ 12.89	$ 13.55	$ 14.25
1 1/2-in	$ 12.16	$ 13.20	$ 14.10	$ 14.83	$ 15.60
2-in	$ 15.05	$ 16.34	$ 17.46	$ 18.35	$ 19.30
3-in	$ 36.36	$ 39.47	$ 42.17	$ 44.34	$ 46.64
4-in	$ 44.25	$ 48.03	$ 51.33	$ 53.96	$ 56.76
6-in	$ 62.66	$ 68.01	$ 72.68	$ 76.42	$ 80.37
8-in	$ 83.71	$ 90.86	$ 97.10	$ 102.09	$ 107.38
10-in	$ 107.38	$ 116.55	$ 124.55	$ 130.95	$ 137.74
Fire Service - All Sizes *	$1.15 /month	$1.23 /month	$1.30 /month	$1.35 /month	$1.40 /month

Outside City Volume (Commodity) Rates - Consumption					
	As of 10/1/16	**As of 7/1/17**	**As of 7/1/18**	**As of 7/1/19**	**As of 7/1/20**
Single Family Residential and Multi-Family Residential (calculation is based upon the number of dwelling units multiplied by the tier width)					
Tier 1 (0-5 ccf**)	$ 6.59	$ 7.16	$ 7.65	$ 8.04	$ 8.46
Tier 2 (6-7 ccf)	$ 7.37	$ 8.00	$ 8.55	$ 8.99	$ 9.46
Tier 3 (8-9 ccf)	$ 8.54	$ 9.27	$ 9.90	$ 10.41	$ 10.95
Tier 4 (10 ccf & above)	$ 10.15	$ 11.02	$ 11.78	$ 12.38	$ 13.02
Commerical: Business, Industrial, Restaurant, Hotel, Golf, Municipal, Bulk, Fire Service Leaks					
Uniform	$ 7.53	$ 8.17	$ 8.73	$ 9.18	$ 9.66
North Coast AG					
Uniform	$ 3.58	$ 3.88	$ 4.15	$ 4.36	$ 4.59
Landscape / Irrigation (tiers based on percent of water budget)					
Tier 1 (≤100% of budget)	$ 7.85	$ 8.53	$ 9.11	$ 9.58	$ 10.08
Tier 2 (101% - 150%)	$ 10.48	$ 11.38	$ 12.16	$ 12.79	$ 13.45
Tier 3 (150% & above)	$ 11.76	$ 12.77	$ 13.64	$ 14.34	$ 15.09
Elevation Surcharge					
As Applicable	$ 0.48	$ 0.52	$ 0.56	$ 0.59	$ 0.62

Outside City Volume (Commodity) Rates - Infrastructure Reinvestment Fee					
	As of 10/1/16	**As of 7/1/17**	**As of 7/1/18**	**As of 7/1/19**	**As of 7/1/20**
Single Family Residential and Multi-Family Residential (calculation is based upon the number of dwelling units multiplied by the tier width)					
Tier 1 (0-5 ccf**)	$ 1.78	$ 1.99	$ 2.10	$ 2.33	$ 2.57
Tier 2 (6-7 ccf)	$ 2.68	$ 2.99	$ 3.15	$ 3.49	$ 3.86
Tier 3 (8-9 ccf)	$ 3.30	$ 3.69	$ 3.88	$ 4.31	$ 4.76
Tier 4 (10 ccf & above)	$ 4.44	$ 4.96	$ 5.22	$ 5.80	$ 6.41
Commerical: Business, Industrial, Restaurant, Hotel, Golf, Municipal, Bulk					
Uniform	$ 2.59	$ 2.90	$ 3.05	$ 3.38	$ 3.74
North Coast AG					
Uniform	$ 3.05	$ 3.40	$ 3.58	$ 3.98	$ 4.39
Landscape / Irrigation (tiers based on percent of water budget)					
Tier 1 (≤100% of budget)	$ 3.23	$ 3.60	$ 3.79	$ 4.21	$ 4.65
Tier 2 (101% - 150%)	$ 4.83	$ 5.39	$ 5.68	$ 6.30	$ 6.97
Tier 3 (150% & above)	$ 4.89	$ 5.46	$ 5.75	$ 6.38	$ 7.05

Outside City Volume (Commodity) Rates - Rate Stabilization Fee					
	As of 10/1/16	**As of 7/1/17**	**As of 7/1/18**	**As of 7/1/19**	**As of 7/1/20**
All accounts (Per ccf)	$ -	$ 1.00	$ 1.00	$ 1.00	$ 1.00

More information is available online at www.cityofsantacruz.com/h2orates

* This amount may be billed annually and will be added to any other applicable water use fixed and volume charges.

** ccf equals 100 cubic foot of water

Drought Cost Recovery Fee

Drought Cost Recovery Fee (DCRF)					
	Stage 1 – 5% Shortage	**Stage 2 – 15% Shortage**	**Stage 3 – 25% Shortage**	**Stage 4 – 35% Shortage**	**Stage 5 – 50% Shortage**
Maximum Targeted Cost Recovery	$ 1,000,000	$ 2,500,000	$ 4,000,000	$ 5,500,000	$ 7,500,000
5/8-in	$ 2.45	$ 6.12	$ 9.79	$ 13.46	$ 18.35
3/4-in	$ 2.45	$ 6.12	$ 9.79	$ 13.46	$ 18.35
1-in	$ 6.13	$ 15.30	$ 24.48	$ 33.65	$ 45.88
1 1/2-in	$ 12.25	$ 30.60	$ 48.95	$ 67.30	$ 91.75
2-in	$ 19.60	$ 48.96	$ 78.32	$ 107.68	$ 146.80
3-in	$ 36.75	$ 91.80	$ 146.85	$ 201.90	$ 275.25
4-in	$ 61.25	$ 153.00	$ 244.75	$ 336.50	$ 458.75
6-in	$ 122.50	$ 306.00	$ 489.50	$ 673.00	$ 917.50
8-in	$ 281.75	$ 703.80	$ 1,125.85	$ 1,547.90	$ 2,110.25
10–in	$ 347.90	$ 869.04	$ 1,390.18	$ 1,911.32	$ 2,605.70

The Drought Cost Recovery Fee maximum amounts set forth above are a fixed fee and are hereby established and shall be applicable for the full fiscal year (twelve months) following the water shortage declaration made by City Council. The maximum targeted cost recovery amount is indicated above and is linked to the water shortage stage declared by the City Council.

WATER COMMISSION
212 Locust Street, Suite A, Santa Cruz, CA 95060 ◆ Ph: 831-420-5200

June 4, 2018

Mayor David Terrazas
Vice Mayor Martine Watkins
Councilmember Sandy Brown
Councilmember Cynthia Chase
Councilmember Chris Krohn
Councilmember Cynthia Mathews
Councilmember Richelle Noroyan

Dear Mayor Terrazas, Vice Mayor Watkins and Councilmembers Brown, Chase, Krohn, Mathews and Noroyan:

The Santa Cruz Water Commission is pleased to convey our recommendations regarding the Water Department's FY 2019 Recommended Operating Budget and Capital Investment Program (CIP). Per the discussion below, we unanimously recommend the Council's approval of this proposed budget and CIP.

Through a series of staff presentations and discussions during the winter and spring of 2018, the Water Commission conducted a detailed review of the Department's proposed CIP, operating budget and 10 year financial pro forma, which is based on the Department's 2016 Long Range Financial Plan (LRFP) adopted by the City Council on June 14, 2016. The pro forma is a product of the Department's financial model and provides a comprehensive, 10 year view of not only revenue requirements, expenditures and projected needs for debt funding of capital investments, but also a picture of how well the Department is doing in building and maintaining reserves and achieving financial targets for debt service coverage as the CIP begins to ramp up.

The Water Department's Recommended FY 2019 Operating and CIP budgets were developed to provide the resources necessary for the Water Department to provide a reliable and high quality supply of potable water to a population of nearly 100,000 people. The Department engages in a wide range of activities to achieve this goal. Examples include:

- Operating, maintaining and repairing the water system to deliver water to customers 24/7/365;

- Implementing drinking water quality monitoring and reporting programs needed to protect public health, comply with federal and state drinking water regulations and provide information to customers;
- Planning for and implementing water system rehabilitation and replacement programs and projects for a water system that has a depreciated value of $400 million and a replacement value of $800 million;
- Implementing programs and procedures to ensure compliance with federal and state environmental laws and regulations, including planning for and implementing stewardship programs to protect and enhance critically important natural resources;
- Installing, maintaining and reading nearly 25,000 water meters; producing, delivering monthly bills; collecting customer payments and providing customer services;
- Designing and implementing an effective water conservation program, including water curtailment programs as needed to address potential supply shortages due to the system's lack of adequate storage to reliably meet demand during dry years;
- Developing and implementing programs to protect City-owned watershed lands, easements and rights-of-way from encroachment and from wildfire;
- Planning and operating a recreation and natural resources interpretation program for the Loch Lomond recreation area as part of the state licensing requirement for the Newell Creek Dam; and
- Planning for and managing the Department's finances to ensure that it is a sustainable enterprise with adequate funds to address ongoing operating and capital investment requirements.

Attachment A provides the Department's complete list of FY 2018 Accomplishments and FY 2019 Goals. This information provides a thorough and interesting summary of the diverse and important efforts our Water Department staff is engaged in on behalf of the 100,000 people who receive safe, reliable water from the Santa Cruz water system.

From our review, we would like to draw your attention to the following budget and CIP highlights:

- Projected revenues for FY 2019 include $45,850,000 in water rate revenue and $1,378,000 in other revenues for a total of $47,228,000. Water rate revenues are less than the combined Operating Budget and CIP due to planned debt financing for projects.
- The proposed Operating Budget for FY 2019 is $33,275,000. The Operating Budget supports ongoing 24/7/365 water utility operations as well as several new projects and initiatives.
    - A net of two additional new full-time employees is being requested,
        - One to improve staffing levels for Loch Lomond's 6 days per week, dawn to dusk operations, and
        - One for succession planning for a critical position in our Water Treatment and Production section. As part of this request, we are adjusting the position level and training requirements for the new position, which will be the permanent replacement for the key employee who will be retiring next year.

- Funds are being proposed to begin work on replacing the Department's Laboratory Information Management System due to the fact that the current system is no longer supported and cannot meet the requirements of the national Environmental Lab Certification Program. The FY 2019 work program also includes a needs assessment for a maintenance management/asset management program.
- Additional funds are being added to support and enhance the Water Department's Safety Program.
- Several vehicles that have reached the end of their useful life are being replaced and one additional vehicle is being purchased for the Meter Shop to support the work of existing staff. A specialty all-terrain vehicle is being purchased for Distribution to provide better access to raw water transmission lines that run cross-country rather than in the public right-of-way.
- The Department is establishing a vehicle and equipment replacement fund that will help to better anticipate and manage the costs associated with replacing vehicles and equipment over time.

- The proposed CIP budget for FY 2019 is $20,559,000.
  - Major progress is expected on several key CIP projects during FY 2019 including:
    - The Newell Creek Dam Inlet-Outlet project – key milestones in FY 2019 for this $50 million project including the release of the Draft Environmental Impact Report in October 2018; completion of 90% design in May of 2019; and hiring a construction management firm;
    - Replacement of the tube-settlers and flocculators at the Graham Hill Water Treatment Plant (GHWTP) – tube-settlers and flocculators are two of the key process components in treating water to meet drinking water standards; and
    - Replacement of the concrete tanks at the GHWTP that store finished water, wash water, and treatment process residuals.
  - Continuing work on implementing the Council-approved Water Supply Augmentation Strategy work plan recommended by the Water Supply Advisory Committee in November 2015, including pilot testing Aquifer Storage and Recovery wells in the Santa Cruz Mid-County and Santa Margarita groundwater basins.
  - $2.875 million in projects to replace water mains, including a project to replace the aging water main on Water Street between River Street and Reed Way.
  - Completion of important master planning work on facility conditions, treatment process issues and long-range water treatment needs for the 60-year old GHWTP. This work will define and schedule several major treatment-related projects that will be implemented via the CIP during the years to come.

As the Water Commission has worked with the Water Department on budget and financial planning and analysis issues over the last several years, we've received regular updates on the

Department's finances including quarterly financial reports (see Attachment B) and comparative budget analytics (see Attachment C).

Using these reports, we're actively tracking several key indicators of financial health, for example, how actual revenues generated by water sales compare with revenue projections from water sales included in the 2016 Cost of Service and Water Rate Study. Tracking this metric helps both staff and Commissioners keep focused on how accurate our system is for projecting revenues. This and other analyses now in regular use by the Department's finance section will be helpful in updating the water rate structure, planned for FY 2021, when costs associated with the City's comprehensive water supply strategy will be more fully understood.

Another major goal of the Department's budget analytics work is to highlight trends and understand major changes at both the organization and section level. We're always impressed by the staff's knowledge and ability to concisely describe circumstances and conditions across the department that influence actual spending from year to year and projected spending for the next fiscal year and beyond. Some key trends we inquired about during our review of the FY 2019 budget and CIP included:

- Projected debt service coverage.
- Anticipated bonded-debt interest rates.
- Expected ratio of pay-go versus debt financing of CIP.
- Use of outside experts to advise on and help manage CIP projects.

With respect to financial forecasting and being able to put the proposed budget and CIP in an appropriate and understandable context, we'd like to especially commend the City and the Department for the financial analysis and modeling tools that they have developed and applied at the Water Department. For the last two years, the Commission's budget review has focused heavily on not just the figures included in the Department's proposed budget and CIP, but on what they mean in terms of achieving the financial metrics that the City Council set for the Department when the Council adopted the LRFP in June of 2016. The key document that we use in understanding what how the Department's proposals fit into that plan is the 10 year pro forma, or financial performance forecast, generated by the Department's financial model (See Attachment D).

The one page pro forma provides a long range view of operating and capital spending, performance on key financial metrics such as debt service coverage, and illustrates how assumptions about salary and benefits, including pension obligations, will affect revenue requirements over time. Department staff has been transparent in describing the key assumptions driving the financial model, and Water Commissioners have received detailed and thoughtful answers to our questions about various aspects of the results presented in the pro forma. Our key take away from these efforts is that Department staff has a well-considered long range financial plan and strategy – a plan which has continued to evolve and improve based on Department staff increasing their familiarity with this essential analytical and planning work.

In closing, the Water Commission recommends that the City Council adopt the Water Department's proposed FY 2019 Operating Budget and CIP. Our careful review of these proposals shows that they have been developed using realistic assumptions that are well aligned with the financial policies and assumptions approved by the Council in its 2016 action approving the Department's LRFP.

We appreciate this opportunity to provide our recommendation to the Council, and are available to answer any questions you may have.

Sincerely,

Linda Wilshusen
Chair, Santa Cruz Water Commission

cc: City Manager Martin Bernal
Members of the Santa Cruz Water Commission
Rosemary Menard, Santa Cruz Water Director

Attachments:
Attachment A – Water Department FY 2019 Proposed Operating and CIP Budgets including FY 2018 Accomplishments and FY 2019 Goals
Attachment B – Example of Quarterly Financial Reports prepared for and distributed to the Water Commission
Attachment C – Water Department Budget Analytics
Attachment D – Water Department 10 year Financial Pro Forma

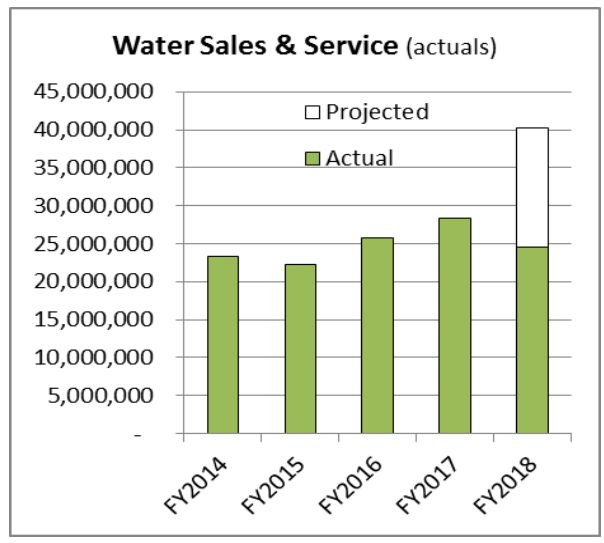
Water Department
3rd Quarter FY 2018 Financial Report
Preliminary, Unaudited, as of 3/31/18

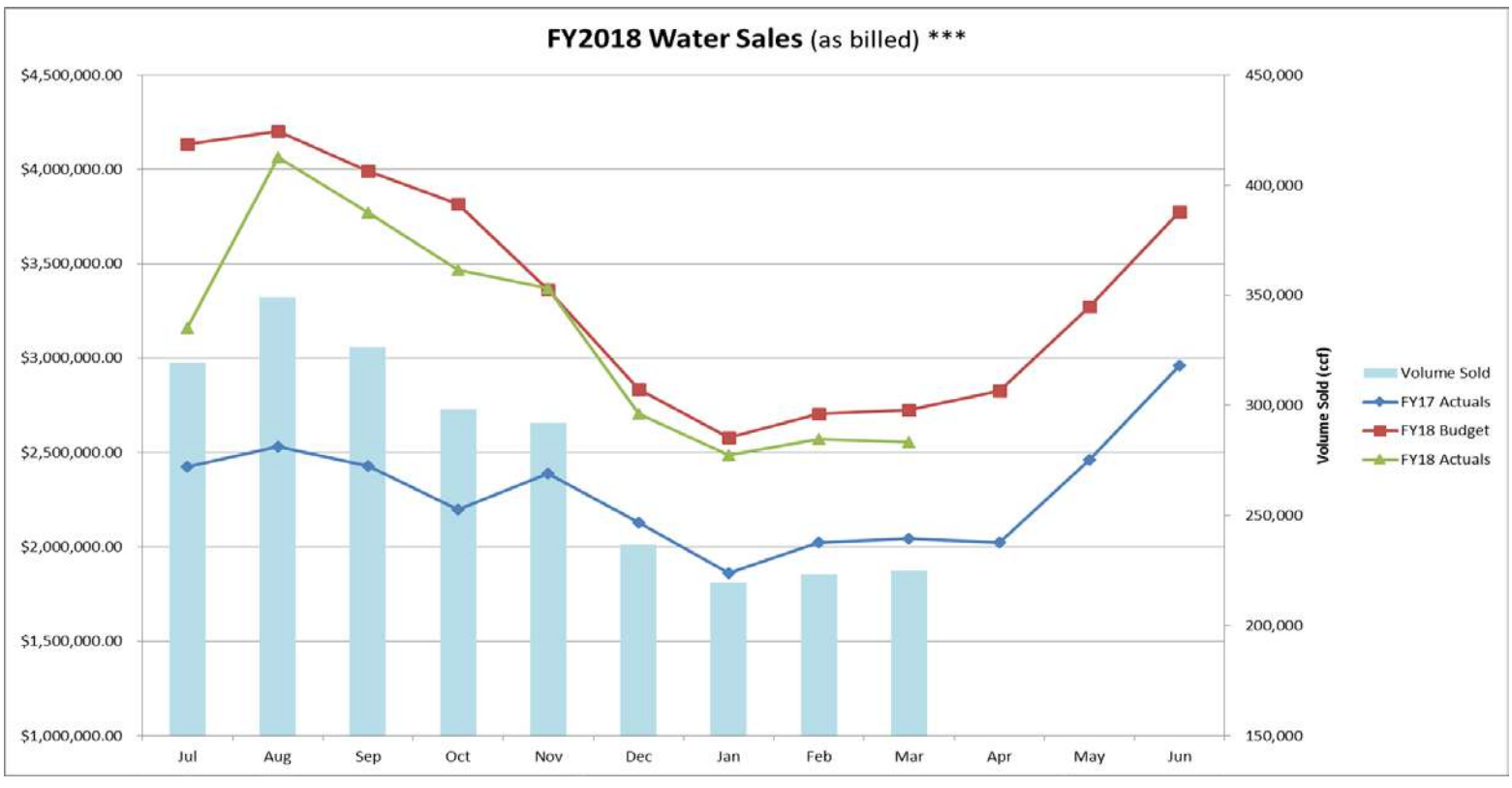
Financial Status for Water Operations, Fund 711

	FY 2018 Ado Budget	FY 2018 Adj Budget	Actual YTD Thru 3/31/18	Remaining Enc	FY 2018 YTD Act + Enc	YTD % of Budget Act + Enc
Revenues						
Water Sales and Service *	40,171,529	40,171,529	24,611,829	-	24,611,829	61%
Miscellaneous	1,193,181	1,536,181	954,545	-	954,545	62%
Grants & Other Financing	-	-	10,613	-	10,613	0%
Total Revenues	**41,364,710**	**41,707,710**	**25,576,987**	**-**	**25,576,987**	**61%**
Expenses			-			
Personnel	14,249,469	14,501,384	8,898,114	-	8,898,114	61%
Services, Supplies, and Other	14,667,833	18,090,513	8,685,631	3,165,385	11,851,016	66%
Capital Outlay: Other	175,000	692,680	614,492	51,550	666,042	96%
Debt Service	1,949,327	1,949,327	1,532,563	-	1,532,563	79%
Total Expenses	**31,041,629**	**35,233,903**	**19,730,799**	**3,216,936**	**22,947,735**	**65%**
Balance	10,323,081	6,473,807	5,846,187		2,629,251	

Fund Balances

	Balance as of 3/31/18	Target for FY end **
711- Enterprise Operations	10,074,877	7,329,745
713- Rate Stabilization	4,657,658	5,821,270
714- Public Art	316,244	N/A
715-System Devel. Charges	3,658,763	N/A
716- 90-Day Operating Reserve	6,516,570	7,148,009
717- Emergency Reserve	3,055,696	3,100,000
718- MHJB Endowment	142,751	145,000





* Actual revenues received (not as billed) for Fund 711, does not include Rate Stabilization Fee

** Target balance for Fund 711 and 716 updated from FY2019 Pro Forma

*** Includes Rate Stabilization Fee

CIP Projects Overview, as of 3/31/2018

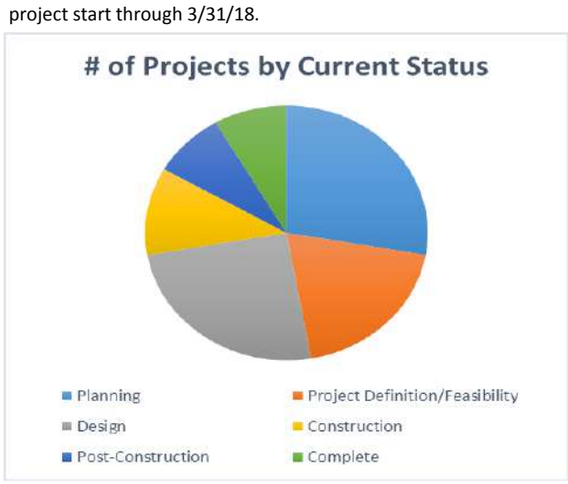
Rehab or Replacement Projects	Project #	Life of Project Total (Projected) *	Spend Thru 3/31/18 **	Project Duration	Current Status
Aerators at Loch Lomond	c701706	350,000	-	2017-2019	Design
Bay Street Reservoir Reconstruction	c700313	25,774,072	25,352,742	2007-2019	Post-Constr
Beltz 10 & 11 Rehab & Development	c700026	509,243	106,836	2017-2018	Design
Coast Pump Station Line Repairs	c701707	695,120	130,000	2018	PD/Feasibility
Felton Diversion Replac. & Pump Station	c701602	1,111,900	98,732	2016-2020	Design
Gravity Trunk Main Valve Replacement	c701504	640,000	583,519	2014-2017	Complete
Newell Creek Dam Inlet/Outlet Pipeline	c701606	49,192,744	5,020,760	2016-2022	Design
Newell Creek Pipeline Rehab/Replacement	c701701	20,022,600	9,999	2016-2020	Planning
N. Coast System Rehab- Laguna Diversion	c701801	1,620,000	-	2018-2021	PD/Feasibility
N. Coast System Rehab- Majors Diversion	c701802	1,570,000	-	2018-2021	PD/Feasibility
North Coast System Rehab	c709835	27,640,259	14,007,074	2003-2023	Planning
Pressure Regulating Stations	c701703	490,000	119,150	2017-2020	Construction
San Lorenzo River Diversion & Tait Wells	c709872	2,295,014	1,981,624	2002-TBD	Planning
Tube Settler Replacement	c701708	2,875,200	228,589	2018-2019	Design
University Tank No. 4 Rehab/Replace	c701505	3,770,000	-	2014 - 2020	Planning
University Tank No. 5 Replacement	c701506	4,428,000	559,624	2014 - 2019	Construction
Water Treatment Upgrades	c700025	1,857,147	1,636,858	On-going	Planning
Wharf Water Main Replacement	c701613	193,501	158,188	2016	Complete
WTP Concrete Tanks Replacement	c701501	28,838,320	2,043,977	2014 - 2021	Design
WTP Filter Rehabilitation and Upgrades	c701303	6,037,300	6,019,570	2013 - 2018	Post-Constr
WTP Flocculator Improvements	c701502	3,220,000	-	2018-2020	Planning
		183,130,420	**58,057,243**		

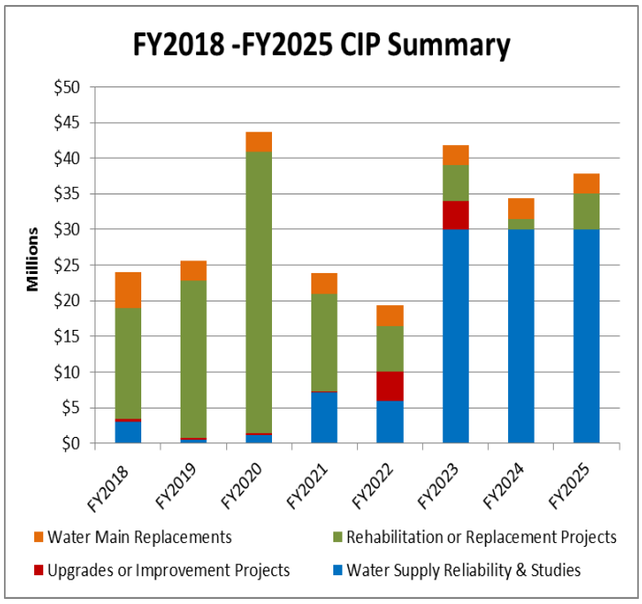
Upgrades or Improvement Projects	Project #	Life of Project Total (Projected) *	Spend Thru 3/31/18 **	Project Duration	Current Status
Advanced Metering Infrastructure (AMI)	c701603	11,100,000	29,100	2017-2023	PD/Feasibility
Brackney Landslide Risk Reduction	c701803	70,100	70,100	TBD	Planning
Coast Pump Station Flood Reduction	c701804	67,300	67,300	TBD	Planning
Loch Lomond Facilities Improvements	c701301	385,000	73,626	2013-2020	Design
Photovoltaic System Evaluation/Construc	c701607	910,000	838,082	2016-2018	Post-Constr
Security Camera & Building Access Upgrades	c701704	645,000	176,996	2016-2019	Construction
Spoils and Stockpile Handling Facilities	c701508	350,000	237,054	2015-2019	Construction
Union/Locust Building Expansion	c701805	450,000	36,711	2017-2018	Design
Water Resources Building	c701702	1,100,000	206,585	2017-TBD	Design
		15,077,400	1,735,555		

Water Supply Reliability & Studies	Project #	Life of Project Total (Projected) *	Spend Thru 3/31/18 **	Project Duration	Current Status
Aquifer Storage and Recovery	c701609 & -10	3,985,000	849,950	2016 - 2022	PD/Feasibility
Recycled Water	c701611 & -12	675,000	573,807	2016 - 2018	PD/Feasibility
River Bank Filtration	c701806	1,300,000	-	2018-2019	PD/Feasibility
Source Water Evaluation	c701608	1,200,000	424,528	2016 - 2020	Planning
Water Supply Reliability - WSAC	c701402 & -03	2,296,250	2,296,249	2014 - 2016	Complete
Water Supply Augmentation Strategy	c701705	106,648,352	155,848	2020 - 2025	Planning
		116,104,602	4,300,382		

Water Main Replacements	Project #	Average Spend Per Year	Spend For 7/1/17 - 3/31/18	Project Duration	Current Status
Main Replacements - Engineering Section	c700002 +	1,298,289	3,999,409	Annual - Ongoing Programs	
Main Replacements - Customer Initiated	c700004	35,759	-		
Main Replacements - Distribution Section	c701507	369,643	178,293		
Main Replace.- Outside Agency Initiated	c700003	172,564	123,625		
		1,876,255	4,301,326		

* Non-inflated 2015 dollars, will change as projects move through design process. Includes budget adjustments in process.
** Amount includes current encumbered and spent funds from the project start through 3/31/18.





WATER COMMISSION
INFORMATION REPORT

DATE: May 29, 2018

AGENDA OF June 4, 2018

TO: Water Commission

FROM: Heidi Luckenbach, Deputy Director/Engineering Manager

SUBJECT: Recommendations from the Ad-Hoc Committee on a Decision-Making Framework for the Water Supply Augmentation Strategy.

RECOMMENDATION: Receive information about, provide feedback on, and accept the decision-making framework developed by the Ad-Hoc Committee.

BACKGROUND:
The Water Supply Advisory Committee (WSAC) Final Report on Agreements and Recommendations defines the various elements of the Water Supply Augmentation Strategy (WSAS) to be evaluated, the activities needed as part of the evaluation, and the timeline for reaching decision points and milestones. A significant amount of analytical work has been accomplished in the last two and a half years on all elements of the WSAS work plan. This includes work on conservation, in lieu water transfers, aquifer storage and recovery, advanced treated recycled water and desalination. Staff has been developing a work plan for the next three years that includes the continuation of technical analyses, as well as further development of the criteria and guidelines developed by the WSAC against which the technical data will be compared and contrasted. Some fairly significant decisions will need to be made between now and 2025, with many of those decisions being made between now and the end of 2020 in order to develop, recommend and implement a water supply augmentation plan. Clarity around the decision-making process is clearly a very important aspect of this work.

The WSAC Final Report describes a change management strategy built on the Plan-Do-Check-Act cycle, which is designed to "…incorporate new information and [is] well adapted to the circumstances involved in implementing the Water Supply Augmentation Plan (Plan)." This section of the Final Report, Section 3.24, anticipates the need for modifications as the plan is implemented. Specifically, it defines relevant terms (e.g., adjustment and adaptation); provides Guiding Principles (e.g., public health and public acceptance); identified Thresholds (e.g., cost, timeliness and yield) which will lead to "an assessment of the Plan and possible adaptation;" and Performance Metrics to assess how individual elements are tracking against performance targets. The possibility of catastrophic events disrupting the plan is also acknowledged.

The WSAC provided this sketch of decision-making in recognition that the planning-level information available during the WSAC process was only adequate for allowing the WSAC to make contingent recommendations and that the City would need to be able to adjust or adapt the plan as information became available or circumstances change over time. Because the approach used during the decision-making process will need to be very transparent to all stakeholders so that the final recommendation to the Council can be well documented and supported, at the December 4, 2017 Water Commission meeting, staff requested an Ad-Hoc Committee of the Water Commission be created to fashion a robust decision-making process framework to be applied by the Commission and, ultimately the Council, moving forward.

That Ad Hoc Committee was to work with staff to develop a decision-making framework that would include both the criteria and, perhaps even more importantly, a process for evaluating the various water supply augmentation strategy elements. That decision-making process needs to be based on the City Council's direction, which is, in turn, based on the WSAC Final Report. The process needs to be consistent with the intent, direction, and criteria presented in the report. It also needs to consider the new information developed to date as well as additional new information which will be forthcoming from the work underway by staff and consultants on the alternative augmentation strategies.

DISCUSSION:
The staff recommendation to create an Ad-Hoc Committee was approved by the Water Commission at its December meeting and the Commission Chair appointed Commissioners Engfer, Schwarm and Wadlow to the committee. The group met on three occasions: January 9, February 6 and April 17 with several communications in between via email. At the first meeting, staff reiterated the goal and provided the following context and questions for consideration by the group as a place to start.

Context
This decision-making process will need to be very clear to all stakeholders so that the final recommendation to the Council is well documented and supported. In working with the Ad-Hoc Committee, staff wishes to use this group and the full commission to vet ideas and create a robust process to be applied moving forward. In recognition of the reality that adjustments and adaptations would be required as each alternative was better understood, the final WSAC report provides adaptive management guidance for the implementation of the recommendations. The adaptive management plan consists of a change management strategy and decision-making framework that include:

- *Plan Do Check Act model*
- *Adaptive pathways framework that recognizes the need for informed decision making, adaptations and/or adjustments*
- *Guiding principles: public health, public acceptance, regional collaboration, plan goal, incremental implementation*
- *Guidance for decision making that comes in several forms*
    - *Threshold Criteria: cost, timeliness, yield*

- *Preferences*
  - *Groundwater-storage based strategies*
  - *Advanced Treated Recycle Water over desalination*
  - *Consideration of how the project(s) contribute to system robustness, resiliency, redundancy and adaptive flexibility*

Other decision-making concepts were considered during the WSAC's consensus-building process, using the group's multi-criteria decision system (MCDS) tool (see Table 11 of the WSAC Final Report) and through discussions and applications of risk/uncertainty, applying a variety of "what if" statements to the consideration of alternatives. While not elevated to a higher level of consideration, WSAC kept these concepts in the mix for consideration during adaptations, at which time a comprehensive decision process would be applied.

***Question/Consideration**: Is there agreement around the framework provided by the WSAC and outlined above?*

***Question/Consideration**: It appears that the WSAC weighted some criteria greater than others. E.g., cost is more important than redundancy. Is this correct? If not, discuss and clarify how to proceed, perhaps through a weighting and sensitivity analysis approach.*

***Question/Consideration**: It appears that there are tiers of criteria. E.g., threshold criteria of cost, timeliness and yield are first tier, preferences second, other (say as per MCDS) are third.*

***Question/Consideration**: It appears that the WSAC believed that there would be one solution. E.g, in lieu, or ASR, or RW or Desal. (An exception is that in lieu could be part of each of these solutions.) Discuss how this may or may not be the case. And consider how to evaluate portfolios.*

Following the meetings and other email discussions staff wrote the following to summarize the discussions and common understandings developed. It must be reiterated however that this is the framework from which staff will continue to develop a fully-vetted, although likely dynamic, decision tool.

Summary Work Flow

The decision making process is in general as follows: the WSAC Work Plan (Figure 12 Gantt Chart of the WSAC Final Report) is implemented by the Water Department, using the procedural approach shown on Attachment 1, making *adjustments* as needed as information is obtained or circumstances change. *Adaptations* away from the projected course require input from the Water Commission and/or City Council, also shown on Attachment 1. Each alternative is being studied to obtain as much information as possible with regards to all the criteria (cost, timeliness, yield, regional collaboration, public health, etc.). By 2020 staff will have a recommended augmentation plan that includes all implemented adjustments and recommended adaptations.

Detailed Work Flow and Common Understandings

1. Implement the WSAC work plan as per Figure 12 of WSAC Final Report.
    a. Each Element (In lieu, Aquifer Storage and Recovery, Recycled Water, Desalination) is evaluated independently, and in parallel.
    b. Use performance metrics, thresholds **and** guiding principles to evaluate the Elements for making adjustments. (Note, performance metrics exist for the ASR project, but must be developed for the other elements.)
    c. Develop each concept (which may be independently considered and/or as part of a portfolio) to an equal level of detail for equitable comparison.

2. Adaptations to the WSAC work plan require feedback from the Water Commission and ultimate approval by the City Council. Examples may include a staff recommendation to discontinue analysis of all but the ASR alternative; or, a recommendation to develop a portfolio of groundwater projects (in lieu plus ASR plus a groundwater replenishment project using advanced treated recycled water) because none solve the water supply project on their own.

3. If Water Commission and City Council support a recommended adaptation, staff would continue to implement this modified work plan.

Criteria: The WSAC report provides a range of criteria including thresholds (cost, timeliness and yield), guiding principles (public health, public acceptance, regional collaboration, plan goal and incremental implementation), and triggers (specific to each element). The Ad Hoc Committee agreed that they all need to be considered, they all carry equal merit in the evaluation of alternatives, and that we need to remain open to the possibility that additional criteria may be introduced as each element is better understood and they appear relevant (e.g., affordability).

Rating Structure/Evaluation Tools: A variety of tools and rating structures were considered to evaluate alternatives and communicate the results. In terms of rating structures, the group recommends a value for objective criteria (such as yield) and 1, 0, -1 rating for subjective criteria (such as resiliency and redundancy). In terms of evaluation tools, the group recommended the option of a sensitivity analysis to evaluate uncertainty. A sensitivity analysis involves the use of ranking and weighting different criteria to test the ramifications of a decision.

Action Items

1. Develop Performance Metrics (triggers) for all elements. Triggers were identified for ASR during the WSAC process, but not for the other elements.
2. Review WSAC metrics of supply gap, cost, timeliness and yield, as well as Guiding Principles. Do they still make sense? Should others be added?
3. Continue to develop a more detailed decision making process that will include rating structures, sensitivity analyses and the possibility of triple bottom line.
4. Continue to develop each element to equal level of detail for comparison with other elements.

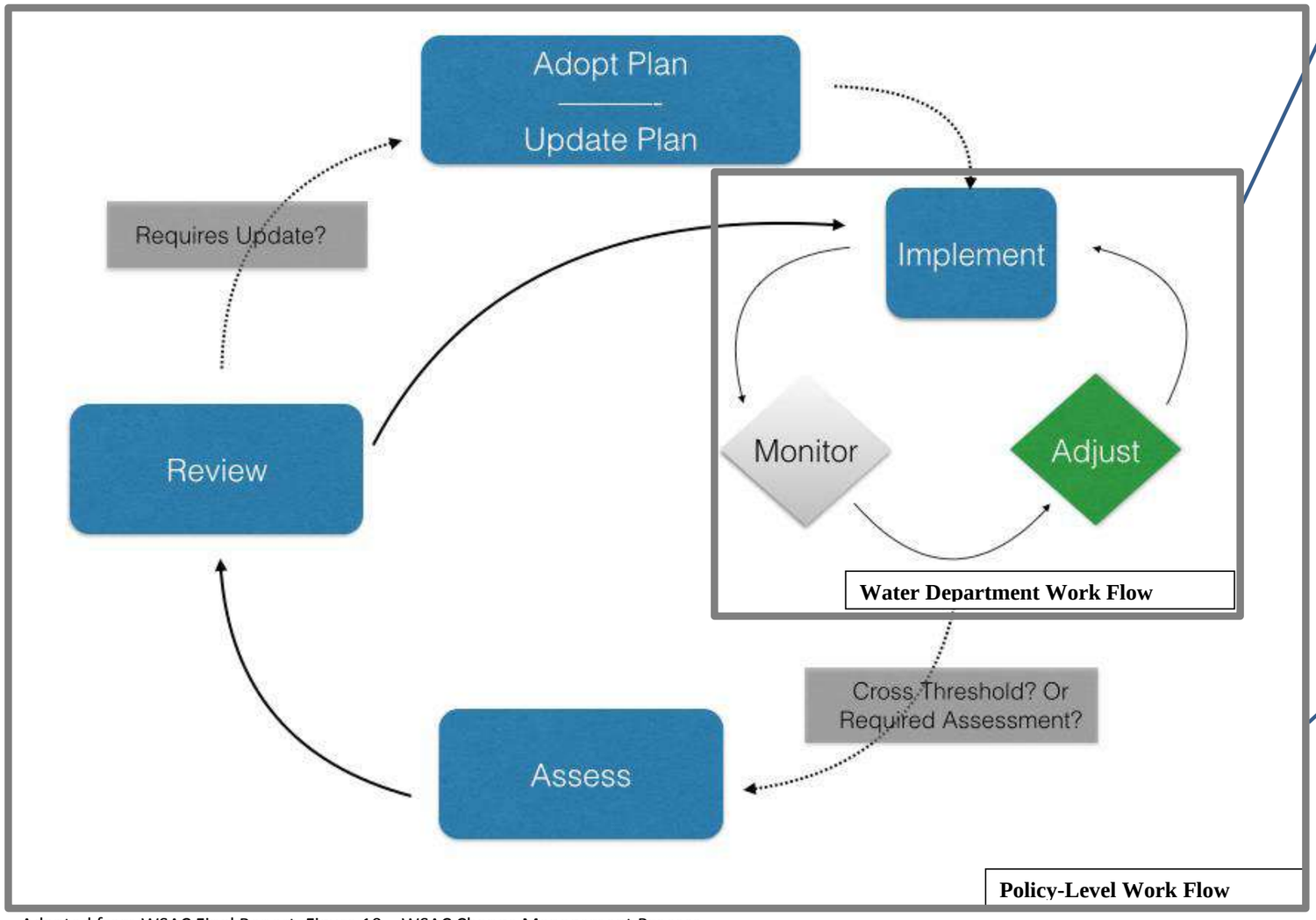
5. Consider developing portfolios that include two or more elements.
6. Finalize comprehensive decision-making framework and associated tools and metrics; present to Commission for review and approval.
7. Commission to then submit that framework to the Council for review, improvement, and, ultimately, approval to apply it going forward.

FISCAL IMPACT: None.

PROPOSED MOTION: Motion to accept the decision-making framework proposed by staff and the Ad Hoc subcommittee for the Water Supply Augmentation Strategy and approve of next steps.

ATTACHMENT(S): Attachment 1: Annotated Work Flow Diagram

Attachment 1: Annotated Work Flow Diagram



Adapted from WSAC Final Report, Figure 10 – WSAC Change Management Process

In this smaller circle staff is implementing the WSAC Work Plan. Threshold and guiding principle data is collected for each alternative. *Adjustments* are made to stay on track, using ***performance metric***s (aka "triggers") as a guide.

Adjustment: Made to keep analysis on track and continue to pursue the feasibility of an Element. An example of an adjustment is to add number of required wells to the ASR project to meet the project goals.

Performance Metric. The feasibility metric(s) for each Element. E.g., a well injection rate, below which would be impractical to operate.

The outer circle is when an adaptation appears necessary; *adaptation*(s) require Water Commission and/or City Council recommendation/authorization. The process would include assessment of the situation, review of recommended alternatives, potential update to the WSAC plan, and/or further work by staff.

Adaptation: Modification to the WSAC Work Plan. E.g., shift from one Element to another; modification in timing, development of portfolios, adding criteria.

<u>Thresholds</u>
- Cost
- Timeliness
- Yield

<u>Guiding Principles</u>
- Public Health
- Public Acceptance
- Regional Collaboration
- Plan Goal
- Incremental Implementation

WATER COMMISSION
INFORMATION REPORT

DATE: May 29, 2018

AGENDA OF June 4, 2018

TO: Water Commission

FROM: Heidi Luckenbach, Deputy Director/Engineering Manager

SUBJECT: Water Supply Augmentation Strategy, Quarterly Work Plan Update

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RECOMMENDATION: That the Water Commission receive information regarding the status of the various components of the Water Supply Augmentation Strategy and provide feedback.

BACKGROUND: As per the Final Agreements and Recommendations of the Water Supply Advisory Committee (WSAC), the Water Commission shall receive quarterly updates on the status of the various elements of the recommended plan. This is the tenth quarterly update. Elements of the Water Supply Augmentation Strategy (WSAS) include In Lieu water transfers with neighboring agencies, Aquifer Storage and Recovery, Recycled Water, and Seawater Desalination. Demand management, via implementation of the Long Term Water Conservation Master Plan, is foundational to the WSAS.

Also included in this quarterly report are updates on other studies and projects that have or may have a nexus with the WSAS work. These are included in the section at the end of this report under "Other." This report includes an update on Source Water Monitoring.

DISCUSSION: Progress and status of the various WSAS-related work is described in detail below as well as that of other projects related to but not specifically articulated in the WSAS.

Demand Management

Status of Measures in the Water Conservation Plan

No. 1 System Water Loss Reduction. Over the last three months, Water Conservation staff has focused on completing the 2017 distribution system water audit, and planning another comprehensive acoustic leak detection survey. The Water Department has contracted with Water Systems Optimization (WSO) to conduct the survey, which will cover 100 miles or about one-third of the distribution system across a range of pressure and pipe material throughout the water service area. The survey is scheduled between June 4 and 15 (Attachment 1). Staff is also

actively participating in a public stakeholder workgroup to support the development of water loss performance standards for urban retail water providers in California, as required by SB 555.

In addition, Conservation staff, in conjunction with the Regional Water Management Foundation and the Danish Water Technology Alliance, helped organize a workshop in March to share knowledge, ideas, and solutions to manage water losses and non-revenue water. The workshop featured presentations and discussion of case studies from utilities in Denmark and California, and was attended by several local agencies and water utilities from around the San Francisco Bay Area.

No. 2 Advanced Metering Infrastructure (AMI). The pilot program is fully underway with 355 Badger Beacon endpoints installed at dedicated irrigation accounts, City and County parks and various school sites. Approximately 30 percent of these customers have signed up to receive direct access to water usage details. This number is expected to increase over time with more outreach. Daily and hourly data have also been incorporated into and are being made available on the website for Waterfluence, the City's large landscape water budget program. A separate Business Case study of AMI is also underway. The Water Department contracted with Jacobs to assess the current metering inventory, evaluate different AMI technologies, and perform a lifecycle cost analysis to compare the costs and benefits for various system types. This project involves several sections of the Water Department and is expected to be completed this fall. While this study is underway, staff is analyzing the results of 250+ meter tests that were conducted on older meters that were removed and replaced as part of the pilot program.

No. 3 Large Landscape Budget-Based Water Rates. When the new water rate structure was rolled out in October 2016, a total of 321 out of 430 irrigation accounts were assigned unique water budgets based on their landscaped area as determined by aerial imagery. The other 109 accounts either used no or very little water (less than 10 CCF per year) in 2015 to warrant assigning a budget. An audit this spring of the annual water consumption at these 109 accounts indicated 19 sites resumed using water in 2017, and were recently mapped for inclusion into the budget-based water rate structure. These 19 accounts represent another 3 acres to the 190 acres of landscaped area that are subject to the budget-based rate structure.

No. 4 General Public Information. Spring is always an active season to perform conservation outreach and education and this year was no different. Some of the events that staff participated in, along with other local water agencies and organizations, include the following:

- Chamber of Commerce Business Expo
- Fix a Leak Week
- State of the San Lorenzo River Symposium
- Earth Day Santa Cruz
- Reimage Your Yard – Waterwise Landscape Transformation Workshop
- Staff of Life Market 49th Anniversary Party

No. 5 Home Water Use Reports. Water Conservation is seeking to implement a new program for customer engagement targeted towards the highest using single family residential customers. This program will involve sending home water use reports during the peak season (May through

October) that will include social norm comparisons of water usage between similar households. The program has multiple goals including attaining water conservation savings and increasing customer engagement with the utility and its program offerings, reducing peak-season water usage, furthering customer's ability to take responsibly & ownership of their water usage, and to generally increase education about water use efficiency. The program will contain three main components: home water use reports that are tailored to each specific customer household recipient, a customer web portal for participating customers to view their water usage customized outreach messages from the utility, and a utility analytics software portal for staff to manage and track program performance and enable two-way communication with customers.

A request for proposals for this program was published on May 1st with a deadline of May 18, 2018. The Water Department received four proposals from vendors. Staff is in the process of evaluating the proposals now and is expected to select a finalist by the beginning of June.

Stage 1 Water Shortage Alert. Since April 10, when both the Water Commission and City Council voted to declare a Stage 1 Water Shortage Alert, staff has been actively working to communicate with the general public, large users, and key groups about the water restrictions. These include public agencies such as the County of Santa Cruz and City of Capitola, UC Santa Cruz, School Districts, and other city departments (Parks, Fire, etc). Staff has also reached out to golf courses and the Beach Boardwalk, sent a direct mailing to area restaurants and hotels, given notice to large irrigation accounts and the Chamber of Commerce. A bill insert about water restrictions currently is being circulated to all accounts, and there will be an article on the subject in the upcoming edition of the SCMU Review.

Staff also has been recruiting for a temporary Water Conservation Assistant to help with education, outreach and enforcement duties. A selection was made in late May and is expected to begin work shortly.

In Lieu Water Transfers (Winter Water Strategy)

- Consultant: Black & Veatch
- Contract Signed: August 2017
- Project Partners: Soquel Creek Water District (SqCWD)
- Engaged Stakeholders: None at this time.
- Original Contract Amount: $668,000 (While Council approved the entire contract scope and budget, a purchase order was opened in the amount to cover Phase 1 only, $180,220.)
- Amount Spent: $122,431
- Amount Remaining: $57,789
- Status: On schedule

The scope of this study is to examine the compatibility of the City's surface water with SqCWD's distribution system and customer plumbing for the purposes of further understanding the opportunities and limitations with providing SqCWD water from the City's surface water sources. As reported previously, the study is organized in two phases: Phase 1, Bench Top Analysis and Phase 2 Pipe Loop Study. Bench testing is expected to be complete in June 2018. A workshop and presentation of findings by Black & Veatch is scheduled for mid-June for Department and SqCWD staff. Staff from California State Water Resources Control Board

Division of Drinking Water will also attend. It is expected that a determination on whether or not to proceed with Phase 2 will be made subsequently. A presentation of Bench Top findings to the Water Commission is currently scheduled for August 27.

SqCWD is sharing equally in contract costs. The City began invoicing SqCWD in March for their share of this study and will continue to do so quarterly.

Aquifer Storage and Recovery (ASR) (Winter Water Strategy) - Phase I Work

- Consultant: Pueblo Water Resources
- Contract Signed: February 2016
- Project Partners: None at this time.
- Engaged Stakeholders: SqCWD, County of Santa Cruz, Scotts Valley Water District, San Lorenzo Valley Water District
- Original Contract Amount: $446,370
- Contract Amendment No. 1: $377,615
- Amount Spent: $570,494
- Amount Remaining: $253,220
- Status: Delayed approximately 6 months.

Pueblo is currently under contract for Phase 1 of a potentially three phase evaluation process.

- Phase 1 – Paper study/modeling/siting study
- Phase 2 – Pilot study
- Phase 3 – Full Scale Implementation

Task 1.1 Existing Well Screening
This task is ongoing with no new report.

Task 1.2 Site Specific Injection Capacity Analyses
No new report.

Task 1.3 Geochemical Interaction Analysis
No new report.

Task 1.4 Pilot ASR Testing Program Development
As previously mentioned, this is an iterative task that relies on the two relevant groundwater models to finalize recommendations for piloting ASR at multiple sites (one in the Mid-County Basin and one in the Santa Margarita Basin).

After completing groundwater modeling of initial scenarios in the Mid-County Basin, Pueblo Water Resources has prepared and submitted a DRAFT ASR pilot Test Work Plan for Beltz 12, a City-owned and operated well; City staff is currently reviewing the work plan. Although modeling of initial scenarios in the Santa Margarita Basin is complete, a work plan for pilot testing in this basin has not been prepared due to issues associated with identifying and acquiring access to a test location property.

Task 1.5.1 Well Siting Study
Nothing new to report; as previously mentioned this work is ongoing and on a schedule similar to that of Tasks 1.4 (above), and 1.5.2 - Groundwater Model Coordination.

Task 1.5.2 Groundwater Modeling Coordination
Initial results from modeling of scenarios that include the historical time period (1973-2015) for the basins are as follows:

- Santa Margarita Groundwater Basin
    - There are roughly 1.5 billion gallons (bg) of storage in the Lompico formation
    - Losses in the basin are roughly in the 10 to 20 percent range
    - Injection capacities for wells in the basin average about 0.3 million gallons per day (mgd).
- Mid-County Groundwater Basin (Purisima)
    - The storage volume seen in the In-Lieu only scenarios is approximately 2.74 bg
    - Cumulative losses range between approximately 15% for the ASR only and around 30% for the In-Lieu only scenario.
    - The injection capacities seen in the scenarios were 2.75 mgd with 6 wells for an average of a little under 0.5 mgd.

The initial results shown above for both of the basins are generally consistent or slightly better than the assumptions made during WSAC. Combined storage in both basins is around 4.37 bg, which is greater than the WSAC assumption of 3.0 bg. Hydraulic losses in the basins range between 10 to 30% compared with WSAC-assumed losses of 20 to 40%. The WSAC assumed sustainable per well injection capacities of 0.3 mgd for the Santa Margarita Basin and 0.5 mgd for the Mid-County Basin appear to be validated by the initial results.

An important and complicated topic related to the ASR study continues to be the ongoing discussion around projections for future climate conditions, and how those may impact the local hydrology. In addition to the City, neighboring water agencies (Soquel Creek Water District, Scott's Valley Water District and San Lorenzo Valley Water District) are also looking at the feasibility of their water supply and alternatives along with complying with the requirements of the Sustainable Groundwater Management Act. With all of these efforts advancing simultaneously, there is some interest between the City and Districts in synchronizing the modeling efforts as they relate to climate change scenarios. The agencies are actively developing a plan for incorporating climate change projections into the various planning efforts by understanding the different climate change scenarios being considered and deciding on how each agency can proceed with their individual efforts as well as any collaborative efforts.

Due to previous delays with modeling of the Mid-County Basin, along with modeling of climate change scenarios, a deliverable documenting the initial results from modeling of the first set of scenarios (historical time period plus climate change) is not expected now until June/July of 2018. A presentation is currently scheduled for August 27 to the Water Commission summarizing Phase 1 of the ASR work and introducing Phase 2.

Issue(s)
One issue being dealt with at this time is related to climate change dataset selection as described above and how the use of different datasets in the various models may impact modeling results and observations about the feasibility of the various agency projects. In addition, identifying a pilot-testing location in the Santa Margarita Groundwater Basin continues to be a challenge in part because pilot testing is highly-facilitated when a production well already exists, and existing production wells tend to be in full-time use by their owner.

Advanced Treated Recycled Water
Regional Recycled Water Facilities Planning Study (RWFPS) Status

- Consultant: Kennedy/Jenks Consultants
- Contract Signed: February 2016
- Project Partners: Water and Public Works Departments, State Water Resources Control Board (SWRCB)
- Engaged Stakeholders: City Parks and Recreation Department, County of Santa Cruz – Water Resources Division, Santa Cruz County Sanitation District, Scotts Valley Water District, Soquel Creek Water District, University of California Santa Cruz
- Original Contract Amount: $486,000
- Contract Amendment No. 1: $26,357
- Contract Amendment No. 2: $74,951
- Funding: State of California $75,000*; City Public Works, $35,000; Water, remainder
- Amount Spent: $540,167
- Amount Remaining: $47,141
- Schedule: On Schedule, Final Report by June 2018

*Staff is preparing an invoice to the State Water Resources Control Board for disbursement of grant funds.

Key meetings; in addition to monthly project status meetings, meetings of note include the following:
April 2018, staff presented to internal Water Department staff on the Study as well as recycled water in general. The presentation was a lunch-and-learn format and was intended to be informational and gain a better understanding of internal questions, concerns and overall acceptance of recycled water as a potential water supply. After the presentation a survey was collected and in general, responses can be grouped into three categories; (1) initially accepted and in favor and after still accepted and in favor, (2) initially somewhat accepted and in favor and after increased acceptance and favor, (3) initially opposed and after opposed. The results of this survey appear to align with industry wide outreach efforts and will, therefore, provide guidance for any future City outreach efforts internally and potentially externally.

Next Steps
Staff is currently evaluating several of the long-term recommended potable reuse projects including indirect potable reuse through groundwater replenishment and surface water augmentation as well as direct potable reuse. Major assumptions, changes in regulations since completion of the Study, and potential areas of additional study are being examined.

A scope of work is being developed with HDR (our Program Management Group) to further develop all of the augmentation water supply alternatives to a point of equal comparison.

Desalinated Water

- Consultant: DUDEK
- Contract Signed: May 2017
- Project Partners: NA
- Engaged Stakeholders: None at this time.
- Original Contract Amount: $139,669
- Amount Spent: $113,678
- Amount Remaining: $25,990
- Schedule: Currently on schedule.

DUDEK was hired in May 2017 to complete a "Desalination Feasibility Update Review." A draft report was submitted to the City for review and comment in October 2017 and DUDEK reported out on the study at the Water Commission's November meeting.

To reiterate, the report provides a review of feasibility, cost, timeliness, and approach for pursuing a seawater desalination facility for use by the City with the purpose of supporting the City's selection of a preferred Element 3. Of particular interest is the assessment of changed conditions that may affect the design, environmental review and permitting of a seawater desalination project. The changed condition staff has been grappling with this quarter are the potential impacts of the 2016 Ocean Plan Amendment (OPA) on a seawater desalination project. OPA is the basis for Regional Water Quality Control Board (RWQCB) Water Code Section 13142.5(b) determinations. The OPA requires subsurface intake unless they are deemed infeasible. The study recommended pursuing an early consultation with the RWQCB to confirm and clarify additional study needed to determine the feasibility of subsurface intakes.

Staff hosted a meeting to discuss this issue in mid-March with staff from the RWQCB, SWRCB (responsible for assisting the RWQCBs in implementing the OPA), and the California Coastal Commission. Agency staff provided valuable feedback on requirements for additional studies. A draft Seawater Desalination Marine Work Plan describing additional work to support completion of CEQA and the regulatory permitting process was subsequently prepared and distributed for agency feedback by mid-June. Once finalized, the Work Plan will inform refinement of the cost and timeliness analyses for pursuing a seawater desalination facility, and the Desalination Feasibility Update Review report will be updated and finalized.

Other *(may include: Source Water Monitoring, North Coast Diversions and Pipelines, Newell Creek Pipeline, Newell Creek Dam Inlet-Outlet Pipeline, Felton Diversion, etc.)*

Source Water Monitoring

- Consultant: Trussell Technologies
- Contract Signed: November 2016
- Project Partners: NA
- Engaged Stakeholders: None at this time
- 2017 Contract Amount: $98,924. Amount remaining: $0

- 2018 Contract Amount: $80,002. Amount remaining: $59,682
- Schedule: Currently on schedule.

Through the Source Water Monitoring project, the City strives to learn more about water quality in the San Lorenzo River, especially during high-flow, winter months. This understanding could facilitate the treatment of more water during the winter, increasing the feasibility of an in-lieu water transfer project.

Trussell Technologies is under contract to conduct source water monitoring, data management and analysis for water year 2017 and 2018. Water year 2017 final report was delivered in February 2018. Monitoring for water year 2018 has commenced with an anticipated report delivery date in November 2018.

Outreach and Communication
Our Water, Our Future progress reports were distributed by email following Water Commission meetings.

FISCAL IMPACT: None.

PROPOSED MOTION: Motion to receive information regarding the status of the various components of the Water Supply Augmentation Strategy and provide feedback.

ATTACHMENT(S): Attachment 1: 2018 Leak Detection Proposal

WSO

City of Santa Cruz Water Department

Proposal: Distribution System Leak Detection

Date: February 16, 2018
To: Neal Christen, City of Santa Cruz
From: Reinhard Sturm, Kate Gasner, and Lucy Andrews, Water Systems Optimization

Background

The City of Santa Cruz has proactively managed water loss through recent leak detection, meter testing, and water loss control program development and implementation. To continue engaging with system efficiency and best management practices, the City of Santa Cruz has requested a quote from Water Systems Optimization (WSO) for 100 miles of distribution system acoustic leak detection. WSO performed 100 miles of leak detection for the City of Santa Cruz as part of a 2016 non-revenue water technical assistance project and looks forward to continued partnership in leakage management.

Qualifications

Water Systems Optimization (WSO), a small consulting firm based in San Francisco, specializes exclusively in water loss management. WSO's water loss management preeminence has been recognized by many industry leaders, ranging from the California Department of Water Resources to dozens of water utility managers throughout the United States. WSO has been the lead firm on all Water Research Foundation water loss control research studies, publications recognized as definitive guides to water loss analysis, data management, and program design. Additionally, WSO has worked with more than 60 utilities nationwide – 40 utilities in California alone – to thoroughly compile and validate water audits and then recover revenue and leakage losses. WSO also pioneers new methodologies and partnerships that promote water loss control, including the recent Municipal Water District of Orange County (MWDOC) water loss control program and the California statewide Water Loss Technical Assistance Program (Water Loss TAP). To supplement water loss control technical assistance, WSO also provides acoustic leak detection services.

Project Scope

Goals

1. Plan 100 miles of distribution system acoustic leak detection, capturing a range of infrastructure, geography, pressure, and soil types.
2. Conduct 100 miles of comprehensive acoustic leak detection by sounding all accessible contacts points.
3. Summarize findings, analyze savings, and recommend future leakage management strategies in a project report.

Tasks

1. GIS data export and analysis for leak detection route
2. Planning meeting
3. Comprehensive acoustic survey of 100 miles of main pipe

4. Report on findings and recommendations

Deliverables

- Cloud-based progress tracking tools
- Final report with a summary of findings, estimated savings, and recommendations for leakage management

Budget

WSO proposes a not-to-exceed budget of $30,000 for this scope of work. The budget will be billed each month on an hourly basis by task and staff member, with the exception of task 3, which will be billed by mileage covered.

Table 1: Proposed Project Budget

Task	**Budget**
Task 1: GIS data analysis	$1,000
Task 2: Planning meeting	$1,000
Task 3: Leak detection survey (100 miles) *	$27,000
Task 4: Reporting and recommendations	$1,000
Total	**$30,000**

** includes mobilization and travel expenses*

Timing

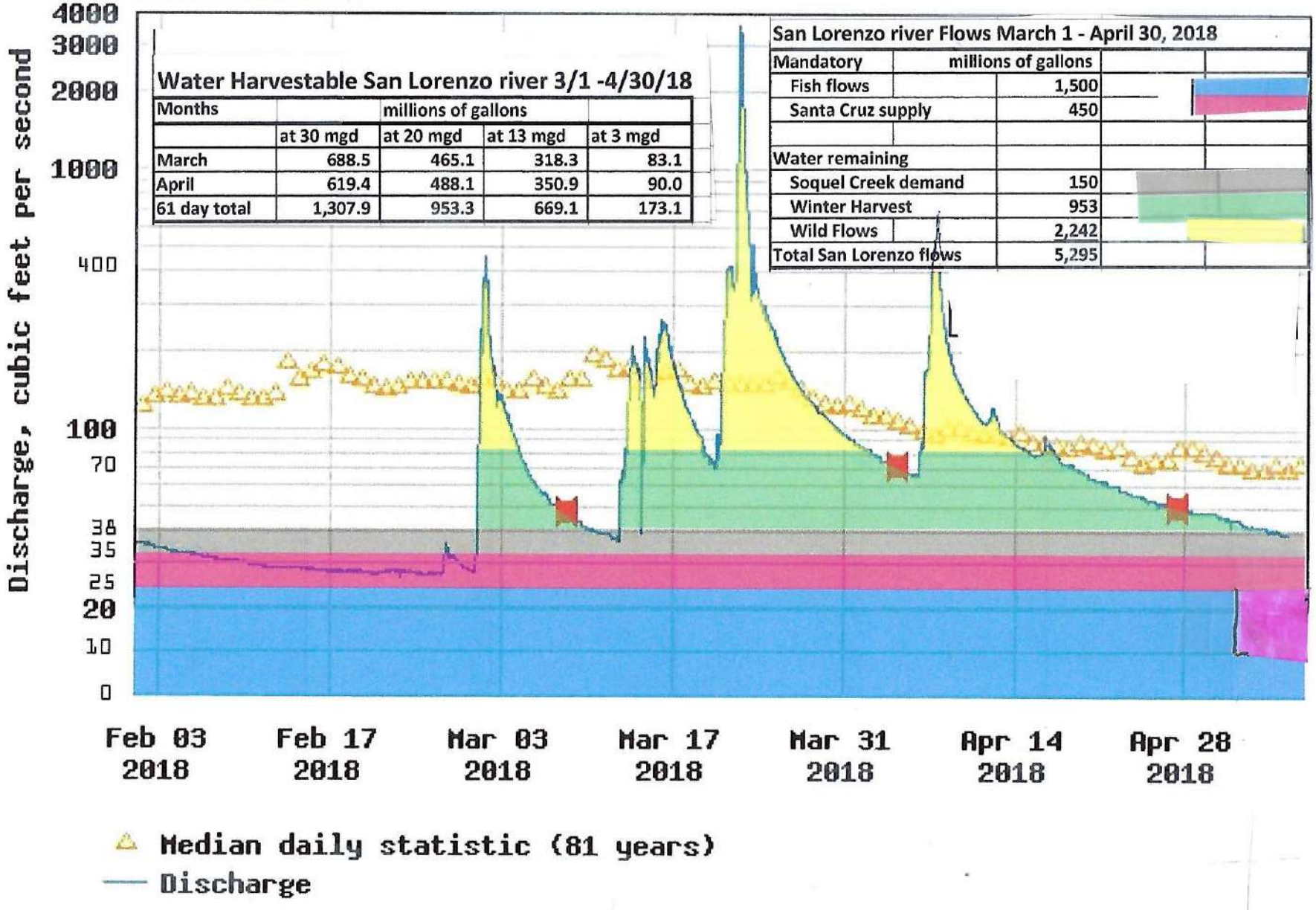
The City of Santa Cruz has indicated that the survey should take place before the close of the 2017-2018 fiscal year on June 30, 2018. WSO can accommodate this timing and will work with City of Santa Cruz staff to identify a survey schedule that is mutually convenient.

WATER FOR SANTA CRUZ COUNTY

Winter Harvesting – A Strategy to Achieve Water Security

USGS

11160500 SAN LORENZO R A BIG TREES CA



Water Harvestable San Lorenzo river 3/1 -4/30/18

Months	millions of gallons			
	at 30 mgd	at 20 mgd	at 13 mgd	at 3 mgd
March	688.5	465.1	318.3	83.1
April	619.4	488.1	350.9	90.0
61 day total	1,307.9	953.3	669.1	173.1

San Lorenzo river Flows March 1 - April 30, 2018

Mandatory	millions of gallons
Fish flows	1,500
Santa Cruz supply	450
Water remaining	
Soquel Creek demand	150
Winter Harvest	953
Wild Flows	2,242
Total San Lorenzo flows	5,295

1

revised 05.10.18

WATER FOR SANTA CRUZ COUNTY

Rosemary Menard
Water Director
City of Santa Cruz

May 30, 2018

Re: Winter Harvest water availability in "Very Dry Years" and fact update

Dear Rosemary,

Winter Harvest study:
Water for Santa Cruz County continues its in depth study of the steam flows in Santa Cruz county. As a result we have observed that while 2018 has been a very low rainfall year, rains in March and April were sufficient to provide almost 1 billion gallons of water for winter harvest without limiting fish flows or the ability of Santa Cruz to meet its customers' daily water demand. This information is very encouraging. WFSCC has studied the river flows in the San Lorenzo for 81 years using DFG-5 fish flows. In all but "Very Dry" years stream and river flows are sufficient to re-supply 1 Billion gallons to Loch Lomond. It means that the rivers and streams of N. Santa Cruz county are sufficient to meet the needs of Santa Cruz, drought insurance and the entire demand of Soquel Creek Water District customers.

San Lorenzo River Classification	# of years of 81 studied	**Mimimum** Flow available, winter after fish flows	**Average** Flow available, winter after fish flows
Wet Above 100,000 Acre feet	26	> 2.5 Biliion gal	> 2.5 Billion gal.
Normal 50,000 - 100,000 Acre feet	27	2.0 Biliion gal.	> 2.2 Billion gal
Dry 30,000 - 50,000 Acre feet	14	980 million gal	2.21 Billion gal
Very Dry below 30,000 Acre feet	14	170 million gal	869 Million gal
Average year 94,975 Acre feet	81	> 2.5 Biliion gal	> 2.5 Billion gal.

It is quickly clear that there is plenty of water for winter harvest from the San Lorenzo in all years, except " Very Dry" years.

	14 year average	**5 year rolling average**	**3 year rolling average**
A closer look at "Very dry " years	869 Million gal	647 Million gal	462 Million gal

The conclusion we draw is that even in dry and very dry years there is plenty of water for winter harvest. Even if we string all 14 "very dry" years in a row, we average 869 million gallons of winter harvest per year.

Fact update Table:
Much has been learned since the WSAC study which concluded at the end of 2015. This table indicates the facts as we knew them then and as they have been revealed since then.

	Knowledge That has already been established as "fact"		
	Item	WSAC knowledge at 11/2015	Current knowledge at 5/2018
A-1	Santa Cruz Water Demand	3.2 billion gallons	2.5 - 2.7 billion gallons. In 2015, 2016, 2017
A-2	Santa Cruz critical annual water need in sustained drought	1.2 billlion galons	Affected by 2015 response to Drought emergency which reduced demand to 2.5 Billion gallons. Buffer is 500-700 m gal.
A-3	Water supplly from N. Coast	Majors creek, 100 m. gallons Jan-April	1. N. Coast streams 671 m. gallons, year round. 2. N. Coast annual supply pre-fish was 1.1 Billion gal. 3. North coast water can move freely.
A-4	Water available for Winter Harvest in San Lorenzo river	1. L. Lomond fills naturally 7 of 10 years 2. Felton Diversion pumping to LL averaged 50 m gal./year for 18 years	1. Water available at present permit levels in all but "very dry years". 2. Non "very dry years" =9 of 10 years
A-5	Permit for Winter Harvets Felton Diversion to Loch Lomond	3. Permit limit is 900 m. gal, Nov.-April. Daily limit = 13.2 mgd.	Water take 18 year average < 50 m gal.
A-6	Pipeline Capacity Felton Diversion to Loch Lomond	Pipe capacity 3 mgd.	Design contract executed; pipe size unknown
A-7	Fish Flows	DFG # 5. = 25 cfs Jan -March	DFG now wants 25 cfs in April for Steelhead.
	Knowledge That has not yet been established as "fact"		
	Item	WSAC knowledge at 11/2015	Current knowledge at 5/2018
B-1	Pipeline Capacity controls winter harvest	no comment	20, 30 or 40 mgd increases winter harvest likelihood of 1 Billion gal to > 95%.
B-2	HCP permit request	amend permit to allow direct diversion to GHWTP.	1. amend permit to increase daily max. limit to 20,30 40 mgd. 2. Allow transfer to Purissima
B-3	Fish flows II	no thought	If permit max raised to 40 mgd, then fish flows in winter can go to 40 cfs.
B-4	Winter Harvest potential	Kennedy Jenks 2013 study said 140 m. gal.Nov- April	Available in 2015> 1.0 B. gal. Available in 2016 >1.0 B. gal Available in 2017 > 1.0 B. Gal. AVailable in 2018 > 953 m. gal Potential if daily max raised to 40 mgd, and fish flows to 40 cfs = 1.35 B gal.
B-5	In lieu cost	$131 million, Kennedy Jenks	1/2 of $ 18.5 million...Other costs for GHWTP upgrade belong to S. Cruz. GHWTP is old needs $100 million upgrade
B-6	Water Chemistry	big red flag	no issue, easy to treat, water color brown
B-7	Can Auquifer hold water and resupply	??	Monitoring well levels rising. See SqCWD graphic. In lieu transfer is goldplated as no water leaves the aquifer.
B-8	Cost of Water Supply augmentation	WSAC $ 131 million	Water transfer to SqCWD cost = $ 10 million GHWTP upgrade cost = $100 million