CITY OF SANTA CRUZ

Water Department

Water Commission Agenda
Regular Meeting
7:00 p.m. – February 1, 2016
Council Chambers
809 Center Street, Santa Cruz

Agenda

Call to Order

Roll Call

Election of Officers ☆(Pages 1-2)

Recommendation: The Water Commission elects a Chair and Vice-chair for 2016.

Presentation *Organized groups may make presentations to the Water Commission. Presentations that require more than three minutes should be scheduled in advance with Water Department staff.*

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 (Pages 3-48)

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

1. City Council Actions Affecting Water ☆ (accept info) (Pages 3-4)
2. Approve the January 4, 2016 Water Commission Minutes ☆ (accept info) (Pages 5-12)
3. Landscape Ordinance ☆ (approve info) (Pages 13-38)
4. Update Initial Water Supply Outlook ☆ (accept info) (Pages 39-48)

Items Removed from the Consent Agenda

General Business (Pages 49-79)
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.

1. Inputs and Outputs of Capital Financing Plan and Water Rate Increase Work ☆(Pages 49-76)

   Recommendation: Receive and discuss information on Santa Cruz Water Department Financial Plan Inputs, 10 Year Capital Improvement Financing Strategy and 5 Year Operating and Capital Financing Plan, and Proposed Water Rates Needed to Support the 5 Year Plan.

2. Cost of Service Analysis and Rate Structure Design ☆(Pages 77-79)

   Recommendation: Agree upon recommendations to the City Council on the Cost of Service Analysis and the design of rate structures for the various customer classes.

Subcommittee/Advisory Body Oral Reports

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

Adjournment The next meeting of the Water Commission is tentatively scheduled for March 7, 2016 at 7:00 p.m. in Council Chambers.

☆Denotes written materials included in packet

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.

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 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 arrangement can be made. The Cal-Relay system number: 1-800-735-2922.

WATER COMMISSION
INFORMATION REPORT

DATE: 12/17/15

AGENDA OF: January 26, 2016

TO: Water Commission

FROM: Rosemary Menard

SUBJECT: Election of Officers

RECOMMENDATION: The Water Commission elects a Chair and Vice-chair for 2016.

BACKGROUND: Water Commission Bylaws, Article VI – Officers and Elections provided for review.

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WATER COMMISSION
REPORT

DATE: January 25, 2016

TO: Water Commission

FROM: Rosemary Menard
Water Director

SUBJECT: City Council Items Affecting Water

January 12, 2016

Grant Funding for Water Conservation Rebate Programs and Proposed Bay Street Reservoir Solar Photovoltaic System (WT)
Resolution No. NS-29,040 was adopted authorizing the City Manager to submit an application for the WaterSMART Water and Energy Efficiency Grant offered by the U.S. Department of the Interior Bureau of Reclamation; and if selected, execute all standard agreements for such funds and any amendments thereto, and any other documents necessary to secure the grant funds, in a form acceptable to the City Attorney.

Tait Wells Replacement Project – Approval of Plans and Specifications, and Authorization to Advertise for Bids and Award of Contract (WT)
Motion carried approving the drawings, specifications and contract documents for the Tait Wells Replacement Project-Phase 1 Well Drilling. The City Manager is hereby authorized and directed to execute the contract as authorized by Resolution No. NS-27,563.

Loch Lomond Improvements, Revised Fee Schedule, and Revision of SCMC Chapter 16.05.100 – Budget Adjustment (WT)
Resolution No. NS-29,041 was adopted to revise Loch Lomond Recreation Area Fee Schedule and rescinding Resolution No. NS-28,156 in its entirety.

Resolution No. NS-29,042 was adopted appropriating funds and amending the FY 2016 budget in the amount of $30,500 from the Water Enterprise Fund (Fund 711) to fund ADA access improvements at Loch Lomond Recreation Area.

Motion carried to return in one year with a status report on conditions of inclusion of allowing alcohol in the recreation area.

Ordinance No. 2016-01 was introduced for publication amending Chapter 16.05.100 (d) of the Santa Cruz Municipal Code pertaining to alcohol restrictions at Loch Lomond Recreation Area.

January 26, 2016

Ordinance No. 2016-01 Amending Chapter 16.05.100 (d) to Revise Regulations Regarding Alcohol Consumption at the Loch Lomond Recreation Area (WT)
Ordinance No. 2016-01 was adopted.

Water Commission (Two possible reappointments, both with terms expiring 1/1/20) (CC)
Motion **carried** to reappoint **David Green Baskin** and appoint **Doug Engfer** as Water Commissioners.

Water Department

Water Commission
7:00 p.m. –January 4, 2016
Council Chambers
809 Center Street, Santa Cruz

Minutes of a Water Commission Meeting

Call to Order: Chair D. Baskin called the meeting to order at 7:02 p.m. in the City Council Chambers.

Roll Call

Present: D. Baskin, D. Schwarm, A. Schiffrin, D. Stearns, W. Wadlow, and L. Wilshusen, G. Mead

Absent: None

Staff: R. Menard, Water Director; H. Luckenbach, Deputy Director/Engineering Manager; T. Goddard, Administrative Services Manager; Dave Culver, Chief Financial Officer; A. Poncato, Administrative Assistant III

Others: There was one member of the public.

Presentation: There were no presentations.

Statement of Disqualification: There were no statements of disqualification.

Oral Communications: There were no oral communications.

Announcements: Ms. Menard introduces Mr. Culver, temporary Chief Financial Officer, to Commission.

Consent Agenda

1. City Council Actions Affecting Water
2. Approve the December 7, 2015, Water Commission Minutes

Commissioner Schiffrin moved the consent agenda. Commissioner Mead seconded.

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

Items removed from Consent Agenda

3. Urban Water Management Plan Update and discussion of this item was deferred until later in the agenda.

General Business

1. Cost of Service Analysis and Rate Structure Design – Presentation and Discussion
   Ms. Menard introduced Sanjay Gaur of Raftelis Consulting to provide a presentation on the cost of service analysis and the work done to date on rate structure design.

Commission Questions/Comments:

In prior discussions related to the San Juan Capistrano case, we were told that rates had to be based on the cost of service and that tiered rates to incentivize conservation could not be used. Does what has been presented tonight meet the cost of service test?

- Response: Yes. The San Juan Capistrano case doesn't prohibit tiered rates. It requires that the rate charged in each case reflect the actual cost of service. In addition, you could justify steeply inclining block rates that would incentivize conservation by, for example, placing all the costs for a supplemental supply in the highest tier.

How aggressive can we get?

- We cannot establish tiered rates under the current legal framework that are not based on what it costs to deliver the level of services in that. However, if you wanted to be really aggressive, in theory at least, you could set a penalty rate and this rate could move around based on the drought condition.

Will the decision about what is going to be included in the Capital Improvement Program have any impact on the cost of service for various customer classes in terms of changing the methodology for how that is determined, or can the same analysis that is being done for one set of revenue requirements be the same for another? In other words, once we have a methodology for the cost of service it won't matter what the revenue requirements are different revenue requirement levels would affect what the cost is but not the way it's going to be distributed?

- Yes, that is exactly what the idea is.

One of the uncertainties is the cost of a supplemental supply, given that the cost ranges for new sources are extreme. Would the same methodology apply to determining how the cost would be distributed regardless of which supply project or combination of supply projects is chosen?

- This cost of service analysis is intended to be used for rate setting for the coming five years and after five years, we should redo the analysis and use that updated analysis to allocate costs based on those results. During the next five years, we will be doing mostly technical study and project development and will not be constructing a new water supply project. So, by the time we update the cost of service analysis in 5 years, we will have a much better feel for what the cost of a new supply project will be, which should help us forecast the revenue requirements more accurately.

Where are soft costs like studies and habitat conservation allocated?

- These costs would be included in Base Delivery category.

How are you incorporating the analysis that David Mitchell did for us to determine whether the impact of rate increases is on lessening sales?

- We have not reached that point yet, but when we get there we will look into his study and take his information into account.

Can you describe maximum day and maximum hour, please? The maximum hour seems very high in terms of the percentage.

- There are different assets that are designed to meet certain system performance criteria. Max hour, for example, is often in the morning when most people are using water. Max day, for example, includes the capacity of the treatment plant to produce all of the water that may be needed in a given day. These are things that drive the sizing of the infrastructure and so the characteristics of your systems in terms of peaking in particular, both diurnal and seasonal peaking, determine how big you have to build things. Infrastructure or facilities that have to be bigger to meet max hour or max day are allocated to customers whose demands needs to be met under those circumstances.

Can you explain the difference between transmission and distribution?

- A transmission line is a backbone piece of infrastructure like the Ocean Street trunk main. A distribution line is like the piece of pipe that is in front of your home. Distribution facilities are typically sized for both domestic consumption as well as fire flows. Transmission facilities are typically designed to move a large amount of water to get it to different parts of the system.

So you are taking all the assets in the system and assigning them to one of these categories?

- Yes and sometimes an asset can be divided into multiple categories as some assets are designed for both peak and base. A treatment plant is a good example of this: A portion of a treatment plant's capacity is used for meeting base demand, and a portion of the plant is used to meet peak demand. If demand were flat, you wouldn't need to size the plant for peaking, therefore, the portion of the cost of the facility associated with peaking needs to borne by those customers whose use peaks.

How does this relate to allocation of cost between customers and classes?

- The customer classes that peak a lot should pay more while those that do not peak as much should pay less.

Can you talk about fire protection costs in terms of distribution?

- Distribution system pipes are sized to distribute water at flows needed for firefighting. Pipes are sized to move a lot of water to hydrants very quickly and very seldom do the domestic services using any distribution line use the full capacity of that line.

So the size of the line is determined by fire flow?

- Yes, almost entirely.

On the O&M Allocation, you have water supply listed separately but I don't see it listed separately on the Asset Allocation.

- The water supply on the asset allocation spreadsheet is within the categories called reservoir and collection.

Is that analysis going to change when we put in newer supplies online? For example, cost allocations for upgrades to the North Coast pipeline. We are going to have new supplies brought on that will be high costs attached it.

- The North Coast pipeline costs are included in the collection asset category. We've looked at pipeline sizing and determined that changing size (downsizing the replacement pipeline) is not warranted at this time.

Could we put the ASR in that allocation and treat it as an underground reservoir?

- Yes.

Don't we want to set up a framework now that provides consistency and then build upon it so that when we get 5 years down the road we have a framework that fits where we are going?

- Yes, but in terms of some of the tweaking of what specific projects look like and how we may allocate it, we may not need to do that work in the next three months.

Please explain the difference between base supply and base.

- Base supply is associated with the water that is needed and base is the infrastructure, meaning the pipes and the pumps.

What is the meant by Revenue Offset?

- Revenue offset is miscellaneous revenue that we collect, which is non-rate revenue. For example, interest paid on fund balances.

In terms of water use, how important is the number of dwelling units in a multi-family project compared to the amount of open space in a multi-family project? Typically the earlier multi-family units that were built had more open space, so they tend to have higher water usage because of the additional landscaping. The newer multi-family units have almost no outdoor space, so in terms of normal water use isn't that a more meaningful measure to base tiers on than the number of dwelling units on a multi-family account?

- The dwelling unit strategy works really well when focused on indoor water use. If you have a property with separate irrigation meters, then the irrigation use is charged on a different rate structure, using dwelling unit's works very well. It is more complicated when indoor water and outdoor irrigation water are on the same account.

How does the proposal for new single family tiers compare to what we were allocating for people to use during water restrictions?

- Allocation for single family households was10ccf. The potential revised tiers for single family accounts would establish 4 tiers with a usage of 10 ccf or greater being charged at the tier 4 rate. What we noticed during rationing was that most single family accounts were using between 4 and 6 ccf during the last couple of summers. This makes us think that the amount of water use by single-family customers in tier 4 (10 ccf and greater) won't be huge.

Just to be clear, was it was the tiered rates that led to the reduction in use?

- Likely, it was a combination of a number of things. The econometric demand forecast work that was done in the Water Supply Advisory Committee established a price elasticity of demand for each customer classes based on actual customer usage data from 2000 – 2013. As you know, a series of rate increases were put in place beginning in late 2004 and significantly increasing rates between 2004 and 2011. And at the same time, tiered rates for single-family customers were changed from 3 tiers to 5 tiers. Together these two factors probably had a lot to do with the beginnings of the downward shift of single family, a trend that the drought has taken to the next level.

What is our thinking about how much revenue to collect in the fixed versus the variable part of the bill?

- We're still working on this, but we are thinking about a couple of options that would give us the revenue stability we need to finance our capital improvement program.

Can you please clarify the chart on page 17 so it indicates whether it includes distribution of capital costs or not?

- Capital Costs are not distributed in the creation of the charts because the charts use asset values of existing infrastructure and don't take into account future costs.

Since there are multifamily units with any number of units you can imagine, do you break them into blocks or are they prorated by the number of units?

- The billing system uses the number of units indicated on the account to calculate costs for usage in each of the tiers.

<u>Final Comments and Requests for Follow Up: Additional Comments</u>

- The suite of projects that we are going to be working on, excluding the water supply projects, is mostly rehabilitation and replacement projects related to the basic infrastructure. In general, these projects will fall into the base supply, some into peaking and possibly some into meters.
- Commissioner Schiffrin supports rate structures that create separate funding approaches for capital versus operating costs.
- It would be helpful to show the percentage of single family bills that would fall into the new proposed tiers, similar to the chart on page 31 that distributes single family consumption using the old tiers. In order to help people understand this information, there should be a notation that the Water Commission has asked that both a uniform and tiered rate structure be evaluated for commercial customers on the list on page 29 of the presentation.

Commissioner Wilshusen moved to receive the information. Commissioner Mead seconded.
VOICE VOTE: MOTION CARRIED
AYES: All.
NOES: None

2. Draft Water Commission Work Plan for Calendar Year 2016
   Ms. Menard provided the presentation summarizing the Commission Work Plan for Calendar Year 2016 and responded to Commission questions.

Commission Questions/Comments

Commissioner Wilshusen moved to accept the report. Commissioner Sterns seconded.
VOICE VOTE: MOTION CARRIED
AYES: All.
NOES: None

3. Water Supply Augmentation Strategy, Initial Work Plan
   Ms. Luckenbach provided the presentation summarizing the Water Supply Augmentation Strategy and responded to Commission questions.

Commission Questions/Comments

Isn't there a test going on with Soquel Creek on the whole in lieu concept?

- We are working to finalize SEQA if California Fish and Wildlife let us finish the process to be able to start a trail in February, assuming we have water.

What is this trial period really going to try?

- It is going to do is a variety of things but mainly it is going to attempt to deliver 100 million gallons at about 1 million gallons a day over a period of 90-100 days and it's going to test water quality issues and operational issues. We will be able to collect and monitor data to see what is happening to water levels around the wells that are taken offline. Overall, the trial will give us information and the ability to better understand how an in lieu water exchange would work. It will also be the basis for us to start working on whatever partnership agreement we can work out with them.

This means, we are going to sell them water so they have to pump less and they are going to monitor whether or not they have recovered any water which in a year, can they do that?

- We will be able to see something. It will give us some data about what we have seen.

Does this tie into the modeling work they are doing on the aquifer?

- The data collected will be used to help calibrate the model.

Do we divert water to them after we have pumped as much water as we can to Loch Lomond?

- The structure of the agreement said that we can't do it unless we are full or spilling or we project there is 90% chance of being full. There are other conditions in the terms of the agreement that would basically have us not do it at all in the event that we are putting our customers at risk of future curtailments due to not having adequate supply to meet their needs during the peak demand season.

So it wouldn't necessarily start in February unless we have an abundance of rain in January?

- Yes.

Requests for follow-up:

- Reports on the trial run with Soquel Creek are requested.

Commissioner Schiffrin moved the staff recommendation with the added direction that when this returns in the quarterly report the information requested by the commissioners be included. Commissioner Wadlow seconded.
VOICE VOTE: MOTION CARRIED
AYES: All.
NOES: None

4. Water Efficient Landscape Ordinance
   Mr. Goddard provided a very brief presentation summarizing the Water Efficient Landscape Ordinance changes that are being required as a result of new direction from the State of California and responded to Commission questions.

Commission Questions/Comments

How does this deal with our customers in the county outside of the city?

- County Board supervisors are about to finalize its own landscape ordinance. Our ordinance applies to everywhere we serve water, not just within the city limits. The county defers to water suppliers, like the city, to perform this function where we supply water.

Follow-up:

- Mr. Baskin will meet with Mr. Goddard to discuss his questions and comments on the draft ordinance and a revised draft will be sent out in advance of the next meeting. Ms. Menard then suggested that, assuming no further comments, the item be placed on the consent agenda for the February 1, 2016, agenda.

Commissioner Schiffrin moved that per the Ms. Menard's suggestion, the Water Commission Chair meets with staff to review the ordinance. Any changes that are made will be sent out to the Commission members with a request that they respond to any concerns and that the item is placed on the consent agenda for the next scheduled Water Commission meeting. Commissioner Wilshusen seconded.
VOICE VOTE: MOTION CARRIED
AYES: All.
NOES: None

Consent Item #3 – Update on Urban Water Management Plan Work Plan

Mr. Goddard gave a very brief overview of the work plan for the update of the City's Urban Water Management Plan. Commissioners discussed the pros and cons of having the Water Commissioners review and comment on the plan chapters as it is being developed. After this discussion, the Commission agreed that, because so much of the plan would be incorporating work done in the Water Supply Advisory Committee's process that there was really very little that could be added by

having the Water Commission be actively involved in the review of plan chapters as they are developed.

Subcommittee/Advisory Body Oral Reports

Directors Oral Report No action shall be taken on this item.

- A comment was made about not seeing the reservoir coming up in part because we are still taking water out of the systems, but the ground is getting saturated and we are expecting the current storm to improve our water situation.
- Ms. Menard will be presenting information about the Water Supply Advisory Committee recommendation and to the Board of Directors for the Soquel Creek Water District on January 19, 2016, and again to the Scotts Valley Water District on January 14, 2016. She will be doing outreach to the two boards over the next few weeks.
- There is a lot of work happening with the groundwater sustainability agency. The next meeting of the Soquel Aptos Groundwater Management Committee will be on January 21, 2016. At this meeting, they will be making final recommendations to the partner agencies on the joint powers agreement. The one question Ms. Menard has is whether or not this agreement will trigger a CEQA review because the groundwater sustainability plan is exempt from CEQA, like the urban water management plan, but something I read recently indicated that it was an open question about the JPA agreements were subject to CEQA.
- In respect to the earlier conversation we had about rates and proposition 218, a group of people from ACWA have been creating a ballot initiative on revisions to the portion of proposition 218 that would allow for there to be conservation rates that aren't based on cost exactly. It would also allow for water utilities, or utilities that have to operate under the provisions of proposition 218, to set rates in such a way that you could do lifeline rates or low-income subsidies, which are currently illegal.

Adjournment Meeting adjourned at 10:42 pm. The next regular meeting of the Water Commission is scheduled for February 1, 2016, at 7:00 p.m. in the Council Chambers.

Respectfully submitted,

Amy Poncato

Digitally signed by Amy Poncato
DN: cn=Amy Poncato, o=Water Department, ou=Administration, email=aponcato@cityofsantacruz.com, c=US
Date: 2016.02.01 11:01:36 -08'00'

Staff

WATER DEPARTMENT MEMORANDUM

DATE: January 20, 2016

TO: Water Commission

FROM: Toby Goddard, Administrative Services Manager

SUBJECT: Water Efficient Landscape Ordinance

RECOMMENDATION: That the Water Commission recommend that City Council adopt an ordinance amending Chapter 16.16 of the Santa Cruz Municipal Code.

BACKGROUND: On January 4, 2016 the Water Commission was scheduled to review the proposed changes to the Chapter 16.16 of the Santa Cruz Municipal Code pertaining to water efficient landscape standards. Due to the late hour, the Commission agreed to defer consideration of the item until its February meeting as a consent item, with the understanding that staff would meet in the meantime with Commissioner Baskin to discuss his comments and concerns

DISCUSSION: Staff met with Commissioner Baskin on January 5, 2016, which resulted in three relatively minor changes to the proposed ordinance. One proposed new definition was deleted, and the proposed amendments to sections 16.16.090 and 16.16.100 regarding final inspection and maintenance schedule were clarified.

The proposed ordinance was also recently circulated for review by City Parks and Planning staff. As a result, one other change was made to section 16.16.030(a)(3) staff involving applicability of the standards to developer-installed projects. Previously the ordinance applied to new single and multiple-family development projects resulting in three or more dwelling units where the total landscape area of a project installed by the developer was equal or greater than 2,500 square feet. The proposed ordinance would now apply to all such projects, regardless of landscape size.

The attached ordinance reflects the above noted changes. The matter is currently scheduled to be considered by City Council for a first reading and public hearing on February 8, 2016.

Attachments:

1. January 4, 2016 staff report
2. Revised ordinance

WATER DEPARTMENT MEMORANDUM

DATE: December 11, 2015

TO: Water Commission

FROM: Toby Goddard, Administrative Services Manager

SUBJECT: Water Efficient Landscape Ordinance

RECOMMENDATION: That the Water Commission recommend that City Council adopt an ordinance amending Chapter 16.16 of the Santa Cruz Municipal Code.

BACKGROUND: On April 1, 2015, Governor Brown issued an executive order directing the California Department of Water Resources (DWR) to, among other things, update the state Model Water Efficient Landscape Ordinance and increase water efficiency standards for new and existing landscapes. The California Water Commission approved a revised model ordinance on July 15, 2015. Local agencies (cities and counties) were given until December 1, 2015 to adopt the state' model or a local ordinance that is at least as effective in conserving water as the state's ordinance.

The City of Santa Cruz, as both a land use agency and a public water supplier, has had such an ordinance in place since 1993, as required by an earlier state law, Assembly Bill 325 of 1990. It is codified as Chapter 16.16 of the Santa Cruz Municipal Code. The City's ordinance has been amended several times, with the last major updating undertaken in 2010 in response to The Water Conservation in Landscaping Act of 2006 (Assembly Bill 1881, Laird). Its overall purpose is to ensure that the City's limited water supply is used efficiently and effectively in new landscapes within the City's water service area and to avoid certain landscape and irrigation design aspects that have the potential to result in water waste.

DISCUSSION: The new state model ordinance includes a number of revisions, summarized in a guidance document (Attachment 1). In addition to a number of technical changes, the most significant revisions involved: 1) lowering the threshold for new development projects that are subject to the ordinance, 2) reducing the portion of landscapes that can be planted with high water used plants, and 3) instituting an annual reporting requirement on local agencies on the implementation and enforcement of the ordinance. The new changes are aligned and consistent with the Water Supply Advisory Committee's call for an increased emphasis on reducing peak season water consumption.

Staff has reviewed the changes to the state model ordinance and compared those with the existing ordinance (Attachment 2). In many respects, the City's 2010 ordinance is stronger than the state's new model and certain requirements are already adequately addressed. Elsewhere, changes were made to meet or exceed the standards in the new model.

The proposed ordinance amendments are presented in Attachment 3. The following is a summary of the changes being proposed, organized by section:

- **Section 16.16.020 Definitions.** A number of new terms were added to the ordinance to reflect changes in state law or where staff felt additional clarification was needed.

- **Section 16.16.030 Applicability.** One of the main changes in the state model was to lower the threshold for landscapes that are subject to the ordinance from 2,500 to 500 square feet. The City's ordinance currently applies to all new development requiring a building permit or land use approval. Single family and two unit residents on lots less than 10,000 square feet, however, are required to meet only basic turf limitations and spray irrigation setbacks. The proposed ordinance makes these individual small development projects now subject to tighter requirements, consistent with state law.

- **Section 16.16.070 Landscape Water Conservation Standards.** A number of changes are proposed to the City's landscape water conservation standards. The annual landscape water budget is significantly reduced for all projects. No longer would turf be permitted in new nonresidential projects, unless it qualifies under the definition of a recreation area. Currently, turf and overhead spray irrigation are prohibited in areas less than eight feet wide; these limits are being expanded to ten feet. Additional requirements are proposed involving pressure regulation, flow sensors, soil management, submeters, and graywater. Finally, new single family and two-unit residences would be required to meet a series of new landscape water conservation standards involving soil preparation and management, plant types, turf limits, and irrigation equipment, again, to be at least as effective as the state model ordinance.

- **Section 16.16.090 Final Inspection.** The ordinance is being modified to address persons who would be authorized to conduct a water audit at the time of final inspection.

- **Section 16.16.100 Irrigation System Management and Maintenance.** Adds a requirement for the designer or installer to provide a maintenance schedule to the applicant.

The proposed changes will require additional process for project applicants and additional staff effort for plan review and inspection, mainly on the smaller residential projects. Full, professionally prepared landscape plans would not be required on these smaller projects as they currently are on larger projects, but building plans would need to include standard notes indicating the City's landscape requirements on plans prior to building permit issuance. Installed landscapes would be reviewed at final inspection stage prior to granting occupancy.

Finally, there is a new reporting requirement for local agencies added during the state's update process. For 2015, the report mainly involves the status of the local agency's ordinance and

whether the agency is using the state model or a local ordinance. The City of Santa Cruz since 2001 has used a local ordinance, which staff regards as friendlier to communicate, more practical, and more effective in saving water than the state's approach. After 2015, and every year henceforth, the City will be required to provide the state with information on the following items:

- the number and types of projects subject to the ordinance
- Total landscape area in square feet subject to the ordinance
- Number of new housing starts, new commercial projects and landscape retrofits

The Water Department now tracks only the number projects and landscape areas subject to the ordinance, so this requirement represents a new state unfunded mandate. As if this weren't enough, the state curiously wants local agencies to also report their challenges in implementing and enforcing the ordinance. These new reporting requirements seemed directed at understanding the degree to which local agencies are or are not carrying out this function of implementing landscape regulations for new development. Whether new and expanded rules and reporting requirements will improve compliance by local agencies is yet to be determined. DWR acknowledges itself that it is not a regulatory agency and lacks any authority to enforce this section (California Code of Regulations Title 23, Division 2, Chapter 2.7).

Additional information on the model ordinance, including the full text, is available at online at: http://www.dwr.water.ca.gov/wateruseefficiency/landscapeordinance/

Attachments:

1. Summary of Changes to State Model Water Efficient Landscape Ordinance
2. Comparison of 2015 Model Ordinance to the City Water Efficient Landscape Ordinance
3. Proposed New Chapter 16.16 Water Efficient Landscaping

Chapter 16.16
WATER-EFFICIENT LANDSCAPING

Sections:

16.16.010 PURPOSE.

The purposes of this chapter are to promote efficient water use, to manage peak season water demand, and to preserve water storage in order to ensure a reliable and adequate public water supply by regulating landscape design, construction, and maintenance. It is also the purpose of this chapter to comply with California Government Code Section 65591 et seq., the Water Conservation in Landscaping Act.

(Ord. 2010-11 § 2 (part), 2010).

16.16.020 DEFINITIONS.

For the purpose of this chapter, the following words shall have the meanings set forth below:

(a) "Anti-Drain Check Valve" means a valve located under a sprinkler head, or other location in the irrigation system, to hold water in the system to prevent drainage from the sprinkler head when the sprinkler is off.

~~(a)~~(b) "Applied water" means the portion of water supplied by the irrigation system to the landscape.

~~(b)~~(c) "Automatic irrigation controller" means an automatic timing device used to remotely control valves that operate an irrigation system. Automatic irrigation controllers schedule irrigation events using either evapotranspiration (weather-based) or soil moisture data.

~~(c)~~(d) "Backflow prevention device" means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system.

~~(d)~~(e) "CCF" means one hundred cubic feet, a common billing unit used by water agencies for basing charges for water service. One hundred cubic feet equals seven hundred forty-eight gallons.

~~(e)~~(f) "Certified irrigation designer" means a person certified to design irrigation systems by an accredited academic institution, a professional trade organization, or other program such as the U.S. Environmental Protection Agency's WaterSense irrigation designer certification program and Irrigation Association's certified irrigation designer program.

~~(f)~~(g) "Certified landscape irrigation auditor" means a person certified to perform landscape irrigation audits by an accredited academic institution, a professional trade organization or other program such as the U.S. Environmental Protection Agency's WaterSense irrigation auditor certification program and Irrigation Association's certified landscape irrigation auditor program.

~~(g)~~(h) "Common area" means those areas in a residential development that are owned, shared, and available for use by all residents, and managed by either the homeowner's association or governing board.

~~(h)~~(i) "Community garden" means a plot of land used by a community group and open to the public for the cultivation of flowers, vegetables, edible plants, or fruit.

~~(i)~~(j) "Conversion factor (0.00083)" means the number that converts acre-inch per acre per year to CCF per square foot per year.

~~(j)~~(k) "Director" means the director of the water department of the city of Santa Cruz, or the director's authorized representative.

~~(k)~~(l) "Drip irrigation" means any nonspray low volume irrigation system utilizing emission devices with a flow rate measured in gallons per hour. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.

~~(l)~~(m) "Establishment period" means the first year after installing the plant in the landscape or the first two years if irrigation will be terminated after establishment. Typically, most plants are established after one or two years of growth.

~~(m)~~(n) "ET adjustment factor" means a factor of 0.55 for residential areas and 0.45 for non-residential areas~~0.7~~, that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape.

~~(n)~~(o) "Expanded service" means an additional water meter or larger capacity meter is required to serve the proposed development, as determined by the water agency.

~~(o)~~(p) "Evapotranspiration rate" means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specified time.

~~(p)~~(q) "Flow rate" means the rate at which water flows through pipes, valves and emission devices, measured in gallons per minute, gallons per hour, or cubic feet per second.

(r) "Flow sensor" means an inline device installed at the supply point of the irrigation system that produces a repeatable signal proportional to flow rate for the purpose of reporting high flow conditions due to broken pipes or popped sprinkler heads. Flow sensors must be connected to an automatic irrigation controller, or flow monitor capable of receiving flow signals and operating master valves.

(s) "Friable" means a soil condition that is easily crumbled or loosely compacted down to a minimum depth per planting material requirements, whereby the root structure of the newly planted material will be allowed to spread unimpeded.

(t) "Graywater" means untreated waste water that has not been contaminated by any toilet discharge and has not been affected by infectious, contaminated, or unhealthful bodily wastes and does not present a threat from contamination by unhealthful processing, manufacturing or operating wastes. Graywater includes, but

is not limited to wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, and laundry tubs, but does include wastewater from kitchen sinks or dishwashers.

~~(q)~~(u) "Hydrozone" means a portion of the landscaped area having plants with similar water needs. A hydrozone may be irrigated or nonirrigated.

~~(r)~~(v) "Irrigation audit" means an in-depth evaluation of the performance of an irrigation system. An irrigation audit includes, but is not limited to: inspection, system tune-up, system test with distribution uniformity or emission uniformity, reporting overspray or runoff that causes overland flow, and preparation of an irrigation schedule.

~~(s)~~(w) "Irrigation efficiency" means the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices.

~~(t)~~(x) "Irrigation survey" means an evaluation of an irrigation system that is less detailed than an irrigation audit. An irrigation survey includes, but is not limited to: inspection, system test, and written recommendations to improve performance of the irrigation system.

~~(u)~~(y) "Irrigation water use analysis" means an analysis of water use data based on meter readings and billing data.

~~(v)~~(z) "Landscape architect" means a person who holds a license to practice landscape architecture in California as further defined by the California Business and Professions Code, Section 5615.

~~(w)~~(aa) "Landscape area" means all the planting areas, turf areas, and water features in a landscape design plan subject to the landscape water budget calculation. The landscape area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or nonpervious hardscapes, other nonirrigated areas designated for nondevelopment (e.g., open spaces and existing native vegetation), agricultural uses, commercial nurseries and sod farms.

~~(x)~~(bb) "Landscape water budget" means the upper limit of annual applied water for the established landscaped area. It is based on the region's reference evapotranspiration, type of plant material, and landscape area as specified in Section 16.16.070(b).

~~(y)~~(cc) "Landscape contractor" means a person licensed by the state of California to construct, maintain, repair, install, or subcontract the development of landscape systems.

~~(z)~~(dd) "Lateral line" means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.

~~(aa)~~(ee) "Local agency" means a city or county, including a charter city or charter county, or water agency that is responsible for adopting and implementing this chapter. The local agency is also responsible for the enforcement of this chapter, including but not limited to, in the case of a city or county, approval of a permit and plan check or design review of a project and, in the case of a water agency, approval of a new or expanded water service application.

~~(bb)~~(ff) "Low volume irrigation" means the application of irrigation water at low pressure through a system of tubing or lateral lines and low volume emitters such as drip, drip lines, and bubblers.

~~(cc)~~(gg) "Low water use plant" means a plant species whose water needs are compatible with local climate and soil conditions. Species classified as "very low water use" and "low water use" by WUCOLS, having a regionally adjusted plant factor of 0.0 through 0.3, shall be considered low water use plants.

~~(dd)~~(hh) "Model water-efficient landscape ordinance" means the regulations developed by the California Department of Water Resources required by the California Water Conservation in Landscaping Act and contained in the California Code of Regulations, Title 23, Division 2, Chapter 2.7.

~~(ee)~~(ii) "Modified service" means a substantial change in the water use characteristics of an existing service connection (for example, converting from a single-family residential service to multiple residential service, or from a residential use to a commercial use).

~~(ff)~~(jj) "Mulch" means any organic material such as leaves, bark, straw, compost, or inorganic mineral materials such as rocks, gravel, and decomposed granite left loose and applied to the soil surface for the

beneficial purposes of reducing evaporation, suppressing weeds, moderating soil temperature, and preventing soil erosion.

~~(gg)~~(kk) "Native plant" means a plant indigenous to a specific area of consideration. For the purposes of these guidelines, the term shall refer to plants indigenous to the coastal ranges of central and northern California, and more specifically to such plants that are suited to the ecology of the present or historic natural community(ies) of the project's vicinity.

~~(hh)~~(ll) "New construction" means the construction of a new building or structure containing a landscape or other new land improvement, such as a park, playground, or greenbelt without an associated building.

~~(ii)~~(mm) (ii) "Overhead sprinkler irrigation systems" means systems that deliver water through the air (e.g., spray heads and rotors).

~~(jj)~~(nn) "Overspray" means the irrigation water which is delivered beyond the target area.

~~(kk)~~(oo) "Pervious" means any surface or material that allows the passage of water through the material and into the underlying soil.

~~(ll)~~(pp) "Plant factor" or "plant water use factor" is a factor, when multiplied by ETo, that estimates the amount of water needed by plants.

~~(mm)~~(qq) "Precipitation rate" means the rate of application of water measured in inches per hour.

~~(nn)~~(rr) "Project applicant" means the individual or entity submitting a landscape plan required under Section 16.16.030, in connection with a building permit application or design review from the local land use agency or requesting new, modified or increased water service from the water agency. A project applicant may be the property owner or his or her designee.

~~(oo)~~(ss) "Rain sensor" or "rain-sensing shutoff device" means a component which automatically suspends an irrigation event when it rains.

~~(pp)~~(tt) "Recreational area" means areas dedicated to active play such as parks, playgrounds, sports fields, and golf courses where turf provides a playing surface.

~~(qq)~~(uu) "Reference evapotranspiration" or "ETo" means a standard measurement of environmental parameters which affect the water use of plants.

~~(rr)~~(vv) "Rehabilitated landscape" means any project that is required to modify its existing landscape as a condition of a land use approval or a discretionary permit or any re-landscaping project that requires a permit, plan check, design review, or requires a new or expanded water service application.

~~(ss)~~(ww)"Runoff" means water which is not absorbed by the soil or landscape to which it is applied and flows from the landscape onto other areas.

~~(tt)~~(xx) "Soil moisture-sensing device" or "soil moisture sensor" means a device that measures the amount of water in the soil. The device may also suspend or initiate an irrigation event.

~~(uu)~~(yy) "Sprinkler head" means a device which delivers water through a nozzle.

(zz) "Static Water Pressure" means the municipal water supply pressure when water is not flowing. It is measured at the nearest fire hydrant to the landscape site.

~~(vv)~~(aaa) "Station" means an area served by one valve or by a set of valves that operate simultaneously.

(bbb) "Swing Joint" means an irrigation component that provides a flexible, leak-free connection between the emission device and lateral pipeline to allow movement in any direction and to prevent equipment damage from pedestrian traffic.

~~(ww)~~(ccc) "Submeter" means a private metering device to measure water applied to the landscape that is installed after the primary utility water meter.

~~(xx)~~(ddd) "Turf" means a ground cover surface of mowed grass that requires frequent watering during the growing season. Annual bluegrass, Kentucky bluegrass, perennial ryegrass, red fescue, and tall fescue are cool-season grasses. Bermuda grass, kikuyu grass, seashore paspalum, St. Augustine grass, zoysia grass, and buffalo grass are warm-season grasses.

~~(yy)~~(eee) (xx) “Valve” means a device used to control the flow of water in the irrigation system.

~~(zz)~~(fff) “Water feature” means a design element where open water performs an aesthetic or recreational function. Water features include ponds, lakes, waterfalls, fountains, artificial streams, spas, and swimming pools (where water is artificially supplied).

~~(aaa)~~(ggg) “WUCOLS” means the Water Use Classification of Landscape Species published by the University of California Cooperative Extension, the Department of Water Resources and the Bureau of Reclamation, 2000, and any subsequent revisions.

(Ord. 2010-11 § 2 (part), 2010).

16.16.030 APPLICABILITY.

The director shall be responsible for assuring that all applicants for new, increased, or modified water service shall comply with the standards set forth in this chapter wherever water service is provided by the city as a condition of receiving water service.

(a) The provisions of this chapter shall apply to all of the following landscape projects:

(1) New commercial, industrial, and public development projects requiring a building permit, land use approval/design review or requiring a new, expanded, or modified water service.

(2) Existing commercial, industrial, and public development that is required to rehabilitate or modify their landscape as part of a land use approval/design review process shall also be required to comply with the provisions of this chapter in the relandscaped area.

(3) Developer-installed landscaping. New single- and multiple-family residential development projects resulting in three or more dwelling units. ~~with a total irrigated landscape area which is installed by the developer equal to or greater than two thousand five hundred square feet.~~

(4) Single-family and two-unit residences. New single-family and two-unit residential development projects on a parcel of land less than ten thousand square feet shall be required to meet only provisions ~~regarding turf limits~~ listed in Section 16.16.070(~~c~~j) ~~and spray irrigation setbacks listed in Section 16.16.070(e)~~. ~~Such projects are encouraged to follow voluntary water-efficient landscape guidelines/checklists.~~

(5) New single-family and two-unit residential development projects on a parcel of land equal to or greater than ten thousand square feet shall be required to meet all standards set forth below.

(6) New recreation areas. New parks, playgrounds, sports fields, and golf courses are subject to all the provisions of this chapter except the turf area limits set forth in Section 16.16.070(c)(1).

(b) The provisions of this chapter shall not apply to:

(1) Remodels/additions to existing one- and two-unit homes.

(2) Existing landscapes of less than one acre in size.

(3) Ecological restoration projects that do not require a permanent irrigation system.

(4) Community gardens.

(5) Registered local, state, or federal historical sites where landscaping establishes an historical landscape style, as determined by a public board or commission responsible for architectural review or historic preservation.

(6) Enclosed, private yards and patios in multifamily residential developments.

(c) Pre-existing Landscapes Over One Acre in Size. Existing large landscapes, including existing cemeteries, shall be subject only to the provisions for existing landscapes listed in Section 16.16.110.

(Ord. 2010-11 § 2 (part), 2010).

16.16.040 LANDSCAPE PLAN REVIEW AND APPROVAL REQUIRED.

No person shall install landscaping for a project subject to this chapter without the review and approval required by this chapter.

(a) Design Review. For projects requiring design review or a discretionary land use approval, the applicant shall submit a landscape concept plan. The landscape concept plan shall include general representation of the site features, existing and proposed buildings, proposed planting areas, and the proposed method and type of irrigation.

(b) Building Permit/Plan Check. A complete landscape plan must be submitted and found to satisfy the requirements of this chapter before the local agency can approve a building permit application, or the director

can approve an application for water service and the installation of a new water meter, or authorize a change in water service. The city shall notify the applicant in writing if plans are found to be incomplete or inconsistent with the standards and indicate where such additions or revisions are necessary.

(c) Plan Review Fee. A landscape plan review fee set by resolution of the city council shall accompany each such application to cover the city's cost to review the landscape plan.

(Ord. 2010-11 § 2 (part), 2010).

16.16.050 PERSONS QUALIFIED TO PREPARE LANDSCAPE PLANS.

Landscape plans for all projects, except a single-family or two-unit residence, shall be prepared by, and bear the signature of, a certified irrigation designer, a certified landscape irrigation auditor, a licensed landscape architect, a licensed landscape contractor, a licensed professional engineer, or any other person authorized by the state to do this work.

(Ord. 2010-11 § 2 (part), 2010).

16.16.060 CONTENTS OF PLANS.

Landscape plans shall consist of separate planting, irrigation, and grading plans, all drawn at the same size and scale, and shall accurately and clearly include the following information:

(a) Project Information.

(1) Project applicant/contact person;

(2) Address;

(3) Parcel number(s);

(4) Total landscape area, in square feet;

(5) Source and type of water supply (potable/recycled/other alternative, including graywater), including number and size of service connections.

(b) Planting Plan. Planting plans shall identify and locate the following:

(1) New and existing trees, shrubs, groundcover, and turf areas within the developed landscape area;

(2) Planting legend indicating all plant species by botanical name and common name, spacing, and quantities of each type of plant by container size;

(3) Water use classification (high, moderate, low, or very low) for each plant material specified, according to WUCOLS;

(4) Each hydrozone (including high, medium, and low water uses) delineated and labeled, including the square footage for each area;

(5) Property lines, streets, and street names;

(6) Building locations, driveways, sidewalks, retaining walls, and other hardscape features;

(7) Appropriate scale and north arrow;

(8) Planting specifications and details.

(c) Irrigation Plan. Irrigation plans shall identify and locate the following:

(1) Irrigation point of connection (POC) to water system;

(2) Static water pressure at POC;

(3) Location and size of water meter(s);

(4) Backflow prevention devices as may be required by the water supply agency;

(5) Manual shut off valves;

(6) Location, size, and type of all components of the irrigation system, including automatic controllers, main and lateral lines, valves, sprinkler heads and nozzles, riser protection equipment, soil moisture sensors, pressure regulator, drip and low volume irrigation equipment;

(7) Flow rate (gallons per minute or gallons per hour), precipitation rate (inches per hour) and design operating pressure (psi) for each irrigation circuit;

(8) Irrigation legend with the manufacturer name, model number, and general description for all specified equipment, separate symbols for all irrigation equipment with different spray patterns, spray radius, and precipitation rates;

(9) Irrigation system specifications and details for assembly and installation;

(10) Recommended irrigation schedule for each month, including number of irrigation days per week, number of start times (cycles) per day and minutes of run time per cycle required for each irrigation event designed to avoid runoff, and estimated amount of applied irrigation water expressed in gallons per month and gallons per year, for the established landscape;

(11) The parameters used for programming the weather-based irrigation system controller schedule for the established landscape, including: soil type, slope, plant type, and type of irrigation nozzle/emitter used for each circuit;

(12) Calculation of landscape water budget;

(13) Stormwater management/rainwater collection features and facilities.

(d) Grading Plan (not required when landscaped slopes on the site are less than ten percent).

(1) Finish grades, contours, and spot elevations;

(2) Grading volume (cubic yards);

(3) Elevations of building floors, parking lots, and streets;

(4) Location and height of retaining walls;

(5) Drainage patterns and drainage control facilities.

(e) Specifications.

(1) In addition to planting, irrigation, and grading plans, any written specifications prepared for a project that are applicable to the landscape improvements shall be submitted for review.

(Ord. 2010-11 § 2 (part), 2010).

16.16.070 LANDSCAPE WATER CONSERVATION STANDARDS.

(a) Dedicated Landscape Water Meter.

(1) Separate water service meters shall be required for all new landscaping, except a single-family or two-unit residence, which equals or exceeds five thousand square feet in area, and for

renovated landscape sites that result in expansion of the total landscaped area equal to or more than five thousand square feet.

(2) For all new residential development projects on a parcel of land 10,000 square feet or greater and new nonresidential landscapes not required to have a separate water service meter, a private irrigation submeter shall be installed between the point of connection on the domestic water service and first irrigation valve. The submeter shall register water use in cubic feet.

(b) Landscape Water Budget.

(1) The landscape water budget for new residential landscapes shall be no more than fifty five (55)~~seventy~~ percent of reference evapotranspiration per square foot of landscaped area, and the water budget for non-residential landscapes shall be no more than forty five (45) percent of reference evapotranspiration per square foot of landscaped area. The landscape water budget shall be calculated using the equation below:

Landscape Water Budget = (0.~~7~~55 or 0.45) (ETo) (0.00083) (LA), where:

Water Budget	=	annual upper limit of irrigation water allowed (CCF/year)
0.~~7~~55 or 0.45	=	ET adjustment factor
ETo	=	Reference evapotranspiration (inches per year)
0.00083	=	Conversion factor to CCF
LA	=	Landscape area (square feet)

(2) New landscapes that include a recreation area or are irrigated with recycled water are allowed ~~an additional thirty percent of reference evapotranspiration per square foot for a total of~~ one hundred percent of reference evapotranspiration per square foot.

(3) The estimated annual water use, calculated by adding the amount of water recommended in the irrigation schedule, or by another method approved by the water agency, shall not exceed the annual landscape water budget.

(4) The landscape water budget assigned for a given irrigation account shall not be increased unless review of subsequent landscape plans has occurred and approval of said plans has been obtained by the land use or water agency.

(c) Turf Limits.

(1) The combined size of turf and areas devoted to high water use plants, decorative pools, fountains, water features and swimming pools for residential projects shall be limited to no more than twenty-five percent of the total developed landscape area. Turf is not permitted in new non-residential landscape projects. Thesis limits does not apply to recreation areas requiring large turf areas for their primary function. However, recreation areas shall be designed to limit turf in any portion of the landscaped area not essential for the operation of the recreational facility.

(2) Except when required as a storm water best management practice, turf and other high water use plants shall not be planted in the following conditions:

(a) Planting areas less than ~~eight~~ ten feet wide in any direction;

(b) On slopes greater than five percent;

(c) In street medians, traffic islands, planter strips, and parking lot islands.

(3) Turf varieties shall be water-conserving species, such as tall and hard fescues.

(d) Landscape Design.

(1) Except for areas designated for turf or high water use plants, all plants shall be composed of very low to moderate water use plants, as identified in Water Use Classification of Landscape Species (WUCOLS Guide) or other species, including native plants that are well adapted to the climate of the region, and require minimal water once established.

(2) Plants having similar water requirements shall be grouped together in distinct hydrozones, and where irrigation is required, the distinct hydrozones shall be irrigated with separate valves.

(3) Planting of trees and the protection and preservation of existing native species and natural areas is encouraged.

(4) Water in decorative pools and fountains must be recirculated.

(e) Irrigation Design.

(1) All irrigation systems shall be designed to avoid runoff, overspray, low-head drainage and other similar conditions where water flows off site onto adjacent property, nonirrigated area, walks, roadways, or structures.

(2) Areas less than ~~eight~~ ten feet wide must be irrigated with subsurface or low volume irrigation.

(3) Point source irrigation is required where plant height maturity will affect the uniformity of an overhead system.

(4) All overhead spray nozzles shall have a precipitation rate of no more than one inch per hour.

(5) Overhead sprinkler systems shall not be permitted within twenty-four inches of any nonpermeable surface, including driveways and sidewalks. The setback area may be planted or unplanted. Allowable irrigation within the setback may include drip, subsurface, or other low volume, nonspray irrigation technology.

(6) Plants that require different amounts of water shall be irrigated using separate irrigation circuits and valves.

(7) Trees shall be watered using separate irrigation circuits.

(8) Where available, recycled water shall be used to irrigate landscapes.

(f) Irrigation Equipment.

(1) A pressure regulator shall be installed if pressure at the water meter exceeds eighty psi. Additional pressure regulation devices are required if the water pressure exceeds the recommended pressure of the specified irrigation devices.

(2) Weather-based or other sensor-based, self-adjusting irrigation controllers shall be required, where feasible.

(3) Irrigation systems shall be equipped with rain-sensing devices to prevent irrigation during rainy weather.

(4) Sprinkler heads shall have matched precipitation rates within each control circuit valve and shall be selected for proper coverage and precipitation rate, thereby minimizing overspray and runoff.

(5) Anti-drain check valves shall be installed at strategic points to minimize or prevent low-head drainage.

(6) Swing joints or other riser protection components are required on all risers located in high traffic areas.

(7) The irrigation system shall provide for the installation of a manual shut-off valve installed as close as possible to the point of connection to minimize water loss in case of an emergency or routine repair. Additional manual shut off valves shall be installed as necessary.

(8) Flow sensors that detect and report high flow conditions due to broken pipes and/or broken sprinkler heads are required on all landscapes of 5,000 square feet or larger.

(g) Soil Management, Preparation, and Mulching.

(1) Prior to planting of any materials, compacted soils shall be transformed into a friable condition. Soil shall be prepared for planting by ripping and incorporating an organic amendment at the rate of six cubic yards per one thousand square feet into the top six inches, or amended with organic material as recommended by a landscape architect or soil laboratory report.

(2) All exposed soil surfaces of nonturf areas within the developed landscape area must be mulched with a minimum three-inch layer of organic material.

(3) A laboratory analysis and soil management report shall be completed and submitted for ~~review on~~projects over 5,000 square feet of landscape area and for projects where significant mass grading is planned and the recommendations incorporated into the landscape plans. For landscapes with multiple landscape installations, a soil sampling rate of 1 in 7 lots or approximately 15 percent shall satisfy this requirement.

(h) Stormwater Management.

(1) All planting areas are required to have friable soil to maximize water retention and infiltration. Implementing stormwater best management practices to minimize runoff and increase on-site retention and infiltration is strongly encouraged.

(2) Project applicants should refer to the local public works agency for information on any applicable stormwater requirements.

(i) Alternative Water Sources.

(1) Irrigating with alternative water sources such as recycled water, graywater, or rainwater is encouraged where available on site and permitted. All graywater systems shall conform to the California Plumbing Code (Title 24, Part 5, Chapter 16) and any applicable local ordinance standards. All recycled water irrigation systems shall be designed and operated in accordance with applicable local and state laws. The water budget for landscapes using only recycled water sources shall be 100 percent.

(j) Landscape Water Conservation Standards for Single-Family and Two-Unit Residences on Lots Less Than 10,000 Square Feet.

(1) Provide total landscape area, in square feet including a breakdown of turf and other plant material.

(2) Incorporate compost at a rate of at least six cubic yards per one thousand square feet into the top six inches of landscape area.

(3) Install climate-adapted plants that require little or no summer water for 75 percent of the landscaped area (excluding area devoted to edible plants).

(4) Apply a three inch layer of mulch on all exposed soil surfaces.

(5) Turf Limits

(a) The combined size of turf and areas devoted to high water use plants, decorative pools, fountains, water features and swimming pools for residential projects shall be limited to no more than twenty-five percent of the total developed landscape area.

(b) Turf shall not be planted on slopes greater than five percent.

(c) Turf is prohibited in areas less than 10 feet wide in any direction.

(6) Irrigation Equipment

(a) Automatic irrigation system controllers for landscaping provided by the builder and installed at the time of final inspection shall be weather- or soil moisture-based controllers that automatically adjust as weather conditions change in response to changes in plant water needs.

(b) Irrigation controllers shall be of a type which does not lose programming data in the event the primary power source is interrupted.

(c) Pressure regulators shall be installed on the irrigation system to meet manufacturers recommended pressure range.

(d) Manual shut-off valves shall be installed as close as possible to the point of connection of the water supply.

(e) All overhead spray nozzles shall have a precipitation rate of no more than one inch per hour.

(f) Areas less than ten (10) feet in any direction shall be irrigated with low volume or subsurface irrigation that produces no runoff or overspray.

(g) Overhead sprinkler systems shall not be permitted within twenty-four inches of any nonpermeable surface, including driveways and sidewalks. The setback area may be planted or unplanted. Allowable irrigation within the setback may include drip, subsurface, or other low volume, nonspray irrigation technology.

(Ord. 2010-11 § 2 (part), 2010).

16.16.080 ALTERNATIVE TO TURF LIMITATIONS.

The project applicant, in lieu of the requirement that the portion of the landscape devoted to turf, high water use plants, water features, and swimming pools be limited to no more than twenty-five percent of the total landscape area, may elect to complete the water-efficient landscape equations and worksheets contained in Appendix B of the State of California Model Water Efficient Landscape Ordinance. In such cases, selected plant materials and overall landscape design shall not cause the estimated total water use to exceed the landscape water budget.

(Ord. 2010-11 § 2 (part), 2010).

16.16.090 FINAL INSPECTION/WATER AUDIT.

The director shall have the right to enter upon any premises to make an inspection at any time before, during, and after irrigation system and landscape installation for the purpose of enforcing this chapter.

(a) Upon installation and completion of the landscape, the city shall make a final inspection or require a certified landscape irrigation auditor assigned by the city to conduct a water audit at the applicant's expense to verify that the landscape improvements were completed in accordance with approved plans. The final inspection or water audit shall verify that:

(1) The installed irrigation system is in a leak-free condition.

(2) The installed irrigation system is functioning as designed, specified, and approved.

(3) The irrigation system does not cause water waste due to runoff, low head drainage, overspray or other similar condition where water flows onto adjacent property, nonirrigated areas, structures, walkways, roadways or other paved areas.

(4) The person responsible for long-term landscape maintenance and irrigation management at the property has received the recommended irrigation schedule.

(b) The project must pass inspection or audit before the building permit can be signed off and approved for occupancy.

(c) Water Audit Required for Large Turf Areas. Properties with turf areas over five thousand square feet, upon completing the installation of the landscaping and irrigation system, shall be required to have an irrigation audit performed by a certified landscape irrigation auditor prior to the final field inspection.

(Ord. 2010-11 § 2 (part), 2010).

16.16.100 IRRIGATION SYSTEM MANAGEMENT AND MAINTENANCE.

(a) Maintenance. A regular maintenance schedule shall be submitted to the applicant by the landscape designer or installer at the time of completion of the landscape installation and prior to final sign-off. Landscape shall be maintained in good working condition and properly adjusted to ensure water efficiency. Any broken or malfunctioning equipment, including but not limited to main and lateral lines or control valves shall be repaired promptly with identical equipment to maintain the original design integrity.

(b) Irrigation System Inspections. Irrigation system shall be inspected regularly to correct misaligned, clogged or broken heads, missing heads and risers, stuck valves, and leaks. The irrigation meter shall be read periodically to check consumption and detect any leakage.

(c) Watering Schedule. Watering schedules shall be adjusted periodically to reflect seasonal variations in plant water requirements. Whenever possible, irrigation management shall incorporate the use of real-time, ETo data from the California Irrigation Management Information System (CIMIS) or similar weather-based irrigation scheduling system.

(d) Irrigation Operation. Irrigation shall be scheduled between the hours of 10:00 p.m. and 10:00 a.m. when daily temperature and wind conditions are at a minimum.

(Ord. 2010-11 § 2 (part), 2010).

16.16.110 PROVISION FOR EXISTING LANDSCAPING OVER ONE ACRE IN SIZE.

The city will assign a landscape water budget to each existing landscape with a dedicated irrigation account over one acre in size based on seventy percent of reference evapotranspiration, or one hundred percent of reference evapotranspiration for recreation areas. When evaluation of these properties shows that annual water use exceeds the landscape water budget, the customer will be required to have a certified irrigation auditor perform a water audit and make recommendations as necessary to reduce water consumption consistent with the landscape water budget.

(Ord. 2010-11 § 2 (part), 2010).

16.16.120 EXCEPTIONS.

The purpose of this chapter is to make optimum use of the water resources available to the city water department service area and to manage peak season water demands. As technology changes and more information is available regarding plant materials, irrigation equipment and techniques, and maintenance techniques that enhance water conservation, the director may allow the substitution of well-designed conservation alternatives or innovations which equally reduce water consumption and meet the intent of this chapter.

(Ord. 2010-11 § 2 (part), 2010).

16.16.130 ADMINISTRATIVE ENFORCEMENT.

In addition to any other remedy provided by the Santa Cruz Municipal Code, any provision of this chapter may be enforced by an administrative order issued pursuant to any one of the administrative processes set forth in Title 4 of the Santa Cruz Municipal Code. The water commission shall serve as the administrative enforcement hearing officer for the purpose of considering appeals.

(Ord. 2010-11 § 2 (part), 2010).

16.16.140 LIMIT OF CITY RESPONSIBILITY.

The city of Santa Cruz has limited water resources that are vulnerable to shortage in drought conditions. Residential, commercial and irrigation accounts in the water department service area are therefore subject to water restrictions or mandatory rationing during a declared water shortage emergency. Compliance with this chapter does not guarantee the survival of landscape plants or the availability of water for landscape irrigation based on this chapter. Irrigation shall be scheduled according to any water shortage regulations or restrictions in effect.

(Ord. 2010-11 § 2 (part), 2010).

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WATER DEPARTMENT
MEMORANDUM

DATE: January 25, 2016

TO: Water Commission

FROM: Toby Goddard, Administrative Services Manager

SUBJECT: Initial Water Supply Outlook for 2016

RECOMMENDATION: For information and discussion by the Water Commission.

This report provides an overview of current water conditions and presents the Water Department's first formal outlook covering the City's water supply situation for Water Year 2016. The end of January represents the mid-point of the winter wet season. The outlook will be updated as the 2016 wet season progresses and a final water supply outlook will be prepared toward the end of March, when the bulk of the wet season has passed and the water supply situation becomes more certain.

Rainfall

Rainfall returned to the Central Coast in early November, and weather conditions have been consistently wet in the three months since then. In the City of Santa Cruz, a total of 22.0 inches of rain has fallen so far, which is 140% of average rainfall for the season to date. As shown in Figure 1, rainfall has been above normal for November, December, and January in this strong El Niño period. While none of the storm systems to date have been extremely wet or powerful, the pattern has been consistently wet over the Santa Cruz Mountains, a welcome development after four consecutive years of extreme drought, especially compared to last January, when no rainfall was recorded the entire month.

In the City's watershed, rainfall has measured between 22 and 25 inches, with the gauge at the dam reading 24.1 inches. Normally, the watershed experiences considerably higher rainfall totals than in the City, but this year, the amounts are comparable, and represents about 90 percent of historic average in the Ben Lomond area for the season to date.

The short term forecast has a chance of rain returning to California at the end of January. Long-term, the National Weather Service Climate Prediction Center is showing the probability of above normal precipitation across all of California in its outlook over the next one to three months.

Stream Flow

Water Year 2016 began with near record low stream flows in the San Lorenzo River during the month of October. Since then, river flow has gradually but steadily risen with onset of the wet weather in November and December. It was not until January, however, that significant flows in the river were observed. Unlike rainfall patterns, stream flow in the San Lorenzo River has measured below the long-term average flow all winter long, a reflection of how dry the soils in the watershed were after an extended and unusually warm period of drought.

Figure 2 shows mean monthly stream flows in the San Lorenzo River for the season to date, along with the long-term average values for comparison. Also shown is a print of the daily discharge of the San Lorenzo River in Felton since early October. It shows the river responding to 13 different storm systems, but despite all the rain, it wasn't until just recently in mid-January that daily stream flows in the river began to exceed the long-term median flow.

Reservoir Storage

Loch Lomond Reservoir is presently 74.5% full, after reaching a low of 65.3% at the end of December. Storage has increased by about 260 million gallons since early January in response to all the recent rainfall. The Felton Diversion facility is in inflated but operators are waiting for the turbidity in the San Lorenzo River to drop down to acceptable levels for treatment before resuming pumping up to the lake. The water surface elevation is between 13 and 14 feet below the spillway elevation. Another 720 million gallons would be needed to reach full capacity, or about three times the amount of runoff received so far this season.

In early 2014, a temporary urgency petition was approved by the State Water Resources Control Board reducing the required flow release from Loch Lomond Reservoir from 1.0 to 0.20 cubic feet per second (cfs). The State extended its order three times, which is set to expire in February 2016. Over 330 million gallons of water has been retained in storage since the petition was granted. Whether the Water Department will request another extension will depend on weather conditions going forward, but it is assumed now that the temporary flow release will be allowed to expire.

Water Year Classification

The Water Department uses a water year classification system to characterize the City's overall annual water supply condition. Under this classification system, the water year beginning October 1 is designated as one of four types – Wet, Normal, Dry, or Critically Dry - depending on the total annual discharge of the San Lorenzo River, measured at the stream gage in Felton, and expressed in acre-feet[1].

[1] Discharge refers to the accumulated volume of runoff. One acre-foot of water is equal to 325,851 gallons. 3.07 acre-feet equals one million gallons.

Annual discharge of the San Lorenzo River is regarded as the best individual benchmark of the City's water supply condition for two reasons. First, the river is the city's single largest source of drinking water, providing about half the normal annual supply. Second, about three quarters of all the water used by city water customers is obtained

Cumulative discharge currently measures **16,793** acre-feet, roughly half the long-term average for the water year to date. Annual discharge from the San Lorenzo River must reach a threshold of **29,000** acre-feet to be classified as Dry, and **49,000** acre-feet for the year to be classified as Normal, about three times as much runoff as has been produced to date. After getting off to a slow start, though, more and more runoff is being generated with each passing storm system, as the watershed becomes increasingly saturated.

Cumulative discharge From October 1, 2014 through January 24, 2016 is shown in Figure 3.

U.S. Drought Monitor

The U.S. Drought Monitor map for January 19, 2016 continues to show the majority of California experiencing extreme to exceptional drought conditions. It serves as a stark reminder of this historic drought and indicator of just how much water would be required in the form of rain and snow around to state before conditions improve. The map dated January 19, 2016 is included in Figure 4.

Initial Outlook for 2016

At this time, the water supply outlook for 2016 is encouraging. There has been a seemingly constant parade of moderate storms over the northern half of the state, including the Central Coast region, serving to replenish soil moisture and restore some badly need flow to local streams. But despite the auspicious start, it will take more than three wet months to make up for the hydrologic deficit experienced after four long years of drought. Long-range weather models continue to show above average chances of precipitation over the area between February and April, the period that is most closely associated with wetter than average weather when El Niño conditions are present (Figure 5). Yet much uncertainty exists. Southern California is where the heaviest impacts of El Niño-related weather was predicted to occur, but so far, most of the storm energy has been tracking across the northern half of the state.

Even without El Niño, February and March are historically wet months and much time remains in this water year to continue the process of reestablishing base flow in the City's water supply watersheds and building storage for the dry season ahead.

The Water Department will continue to monitor water supply conditions, and will reevaluate the water supply outlook in early March. At that time, staff should have enough information on which to make a monthly projection of the City's water supply availability and evaluate the adequacy of this supply to meet expected water demands within the City's water service area for the rest of 2016. Coming out of two back-to-back years of water rationing, expectations are that system demand will not recover fully to pre-drought levels but continue to remain somewhat

from a flowing source of supply. In general, the higher the volume discharged from the San Lorenzo River means that:

- the local watersheds in the Santa Cruz mountains are more saturated;
- the stream sources will flow at higher levels later into the dry season; and
- there is more water available from all surface water sources, including the reservoir, to meet system demands over the course of the year.

depressed, even in the absence of any local water restrictions. Whether the City of Santa Cruz will be required by the state to meet the same conservation target in 2016 as it was in 2015 is yet to be determined, and won't be finalized unitl later this spring.

Attachments:

Figure 1: Monthly Rainfall, City of Santa Cruz
Figure 2: Monthly Streamflow, San Lorenzo River at Big Trees
Figure 3: Cumulative Runoff and Water Year Classification
Figure 4: U.S. Drought Monitor Map, California
Figure 5: National Weather Service/Climate Prediction Center's Three Month Precipitation Outlook

Figure 1. Monthly Rainfall, City of Santa Cruz, 01/25/2016

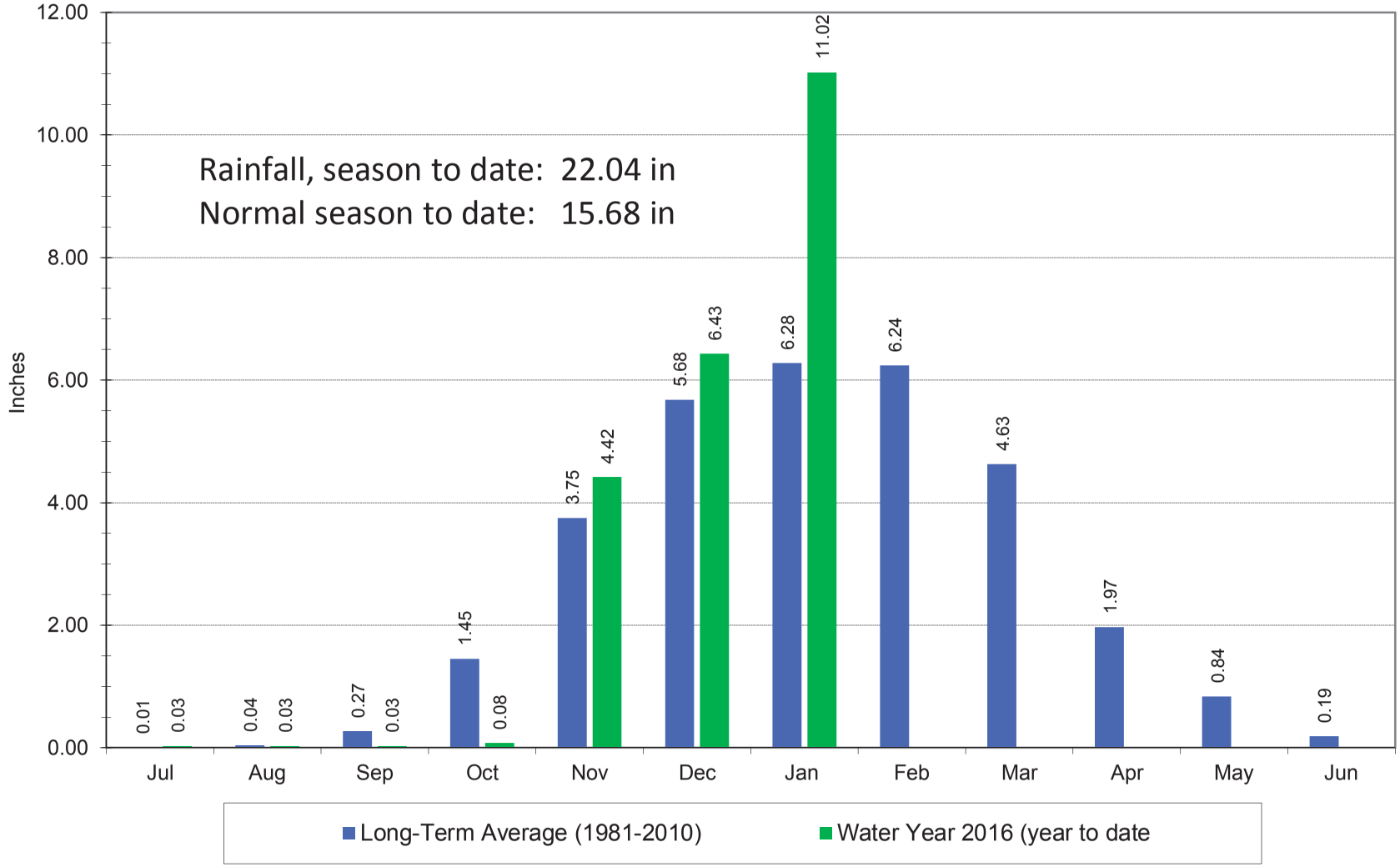

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Figure 2. Mean Monthly Streamflow, San Lorenzo River at Big Trees, 01/25/2016 (cubic feet per second)

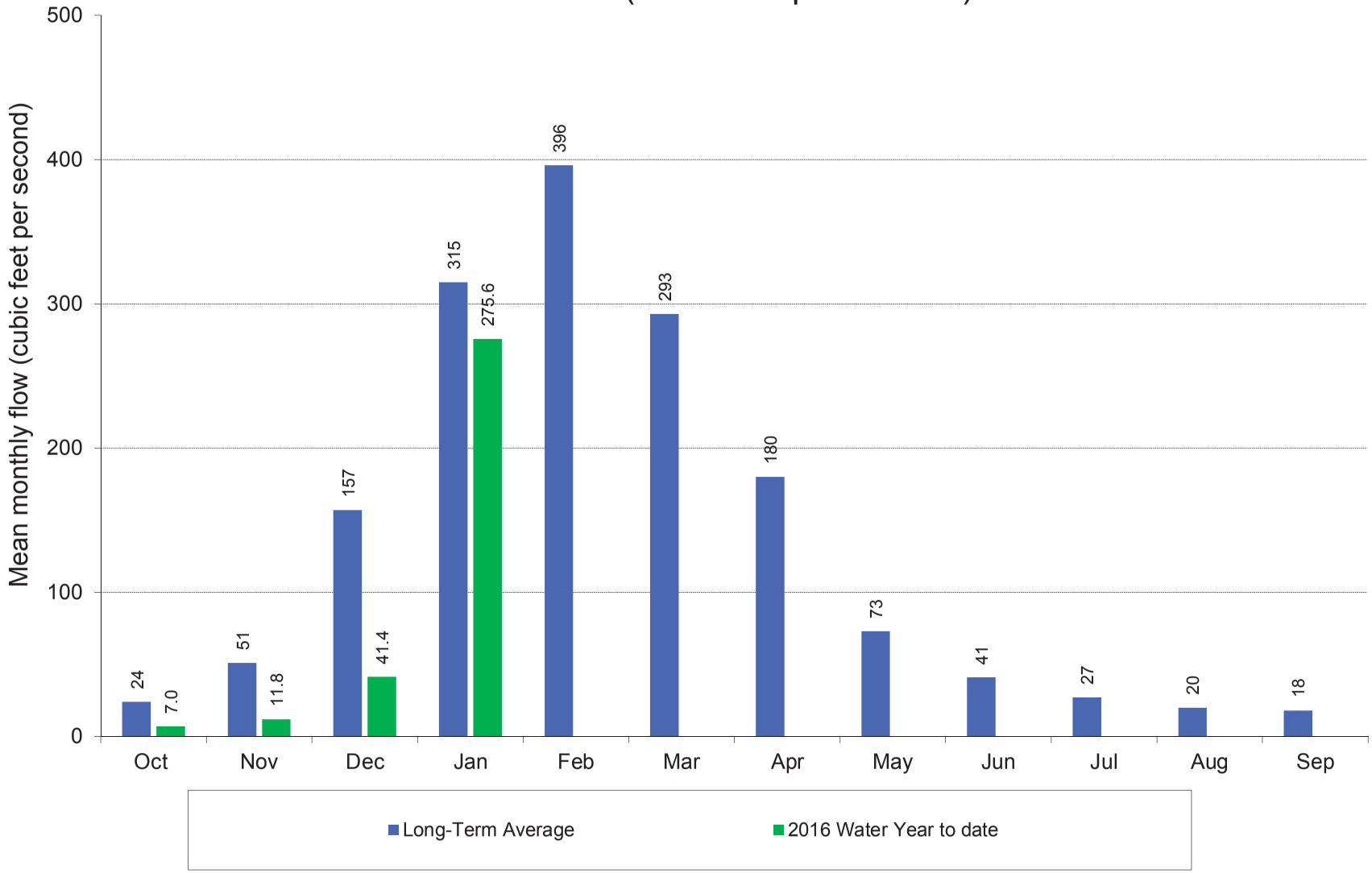

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Figure 2.a

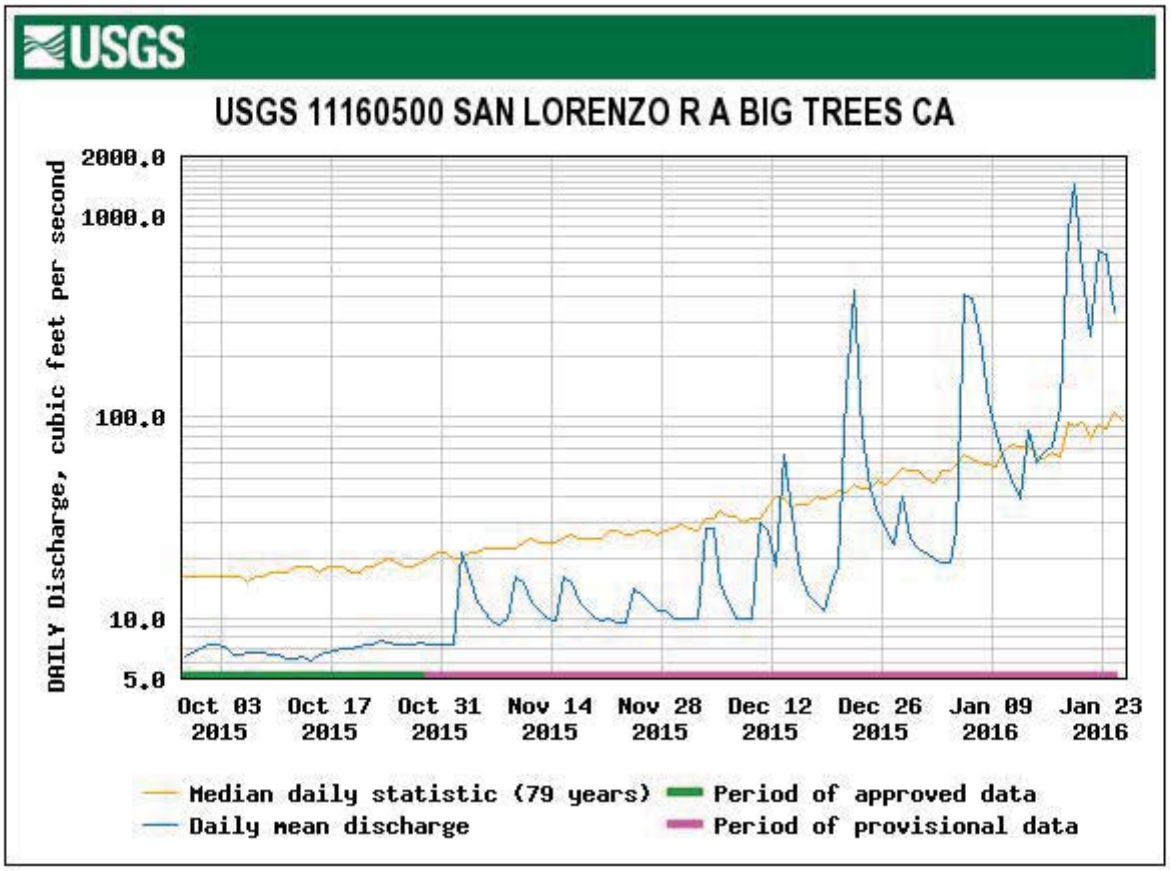
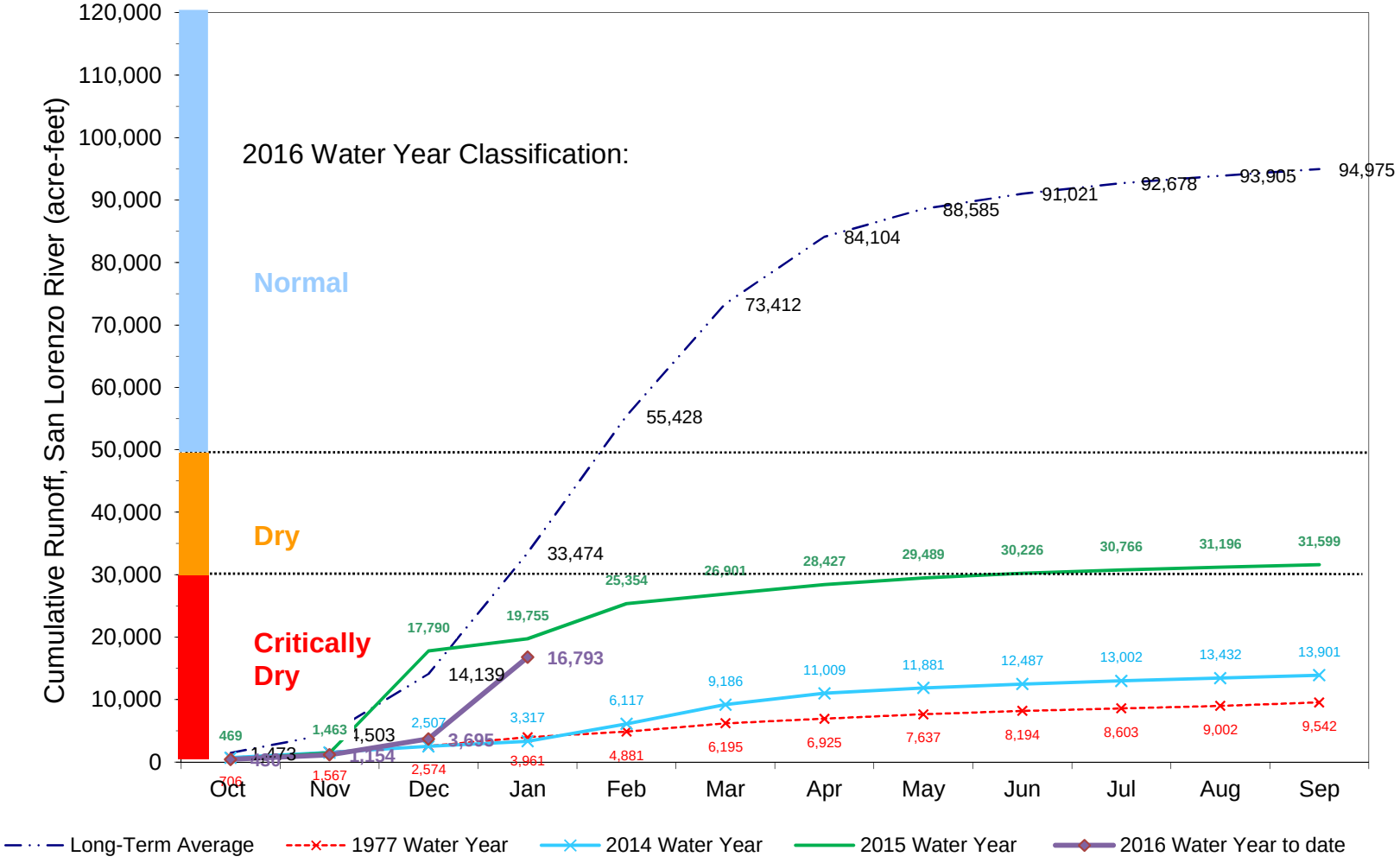
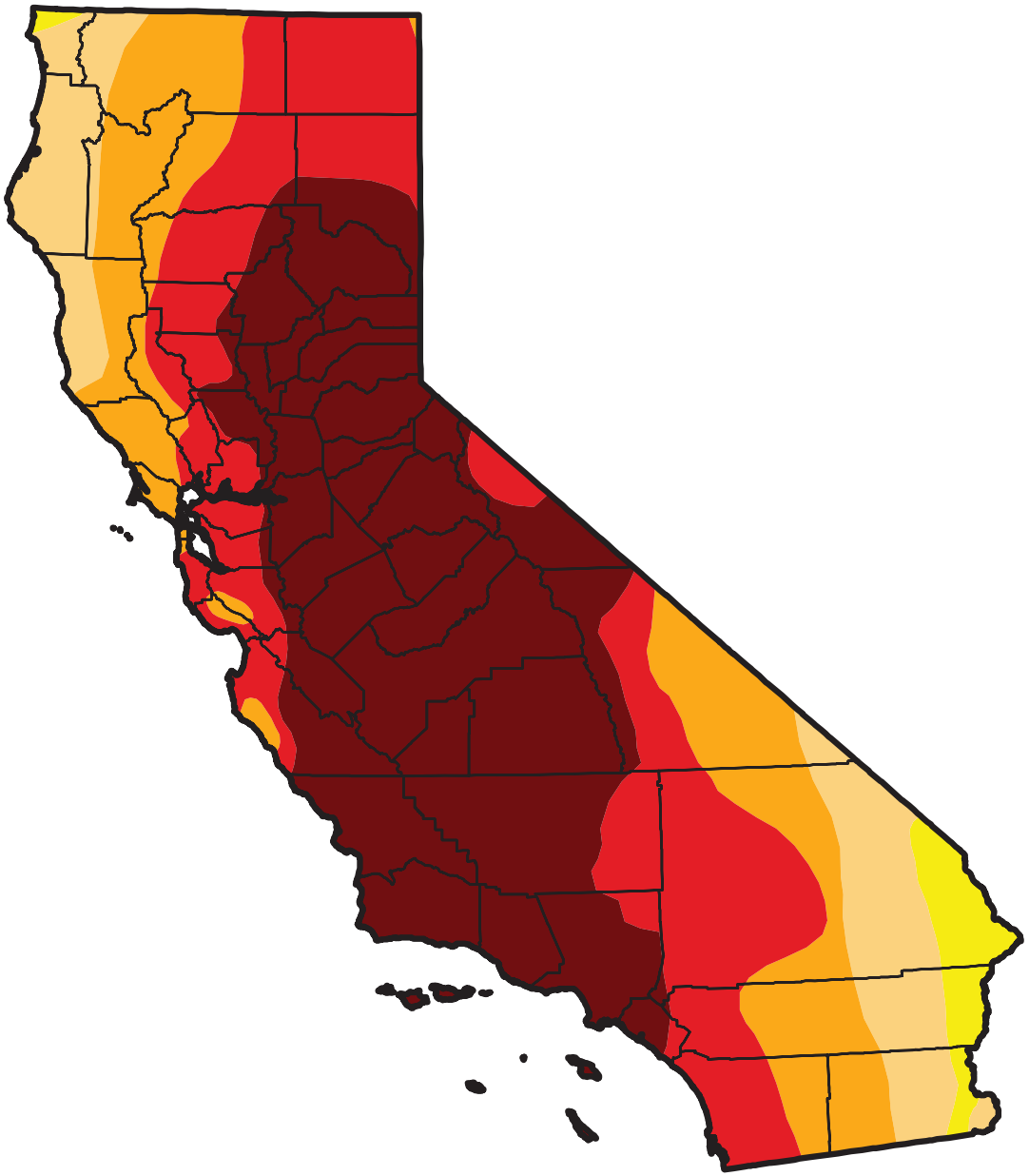

USGS
USGS 11160500 SAN LORENZO R A BIG TREES CA
DAILY Discharge, cubic feet per second
2000.0
1000.0
100.0
10.0
5.0
Oct 03 2015
Oct 17 2015
Oct 31 2015
Nov 14 2015
Nov 28 2015
Dec 12 2015
Dec 26 2015
Jan 09 2016
Jan 23 2016
Median daily statistic (79 years)
Daily mean discharge
Period of approved data
Period of provisional data

Figure 3. Cumulative Runoff and Water Year Classification, 01/25/2016 (acre-feet)



U.S. Drought Monitor
California



January 19, 2016
(Released Thursday, Jan. 21, 2016)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	97.17	86.13	68.15	42.66
Last Week *1/12/2016*	0.00	100.00	97.33	87.55	69.07	42.66
3 Months Ago *10/20/2015*	0.14	99.86	97.33	92.27	71.08	46.00
Start of Calendar Year *12/29/2015*	0.00	100.00	97.33	87.55	69.07	44.84
Start of Water Year *9/29/2015*	0.14	99.86	97.33	92.36	71.08	46.00
One Year Ago *1/20/2015*	0.00	100.00	98.13	94.34	77.52	39.15

Intensity:

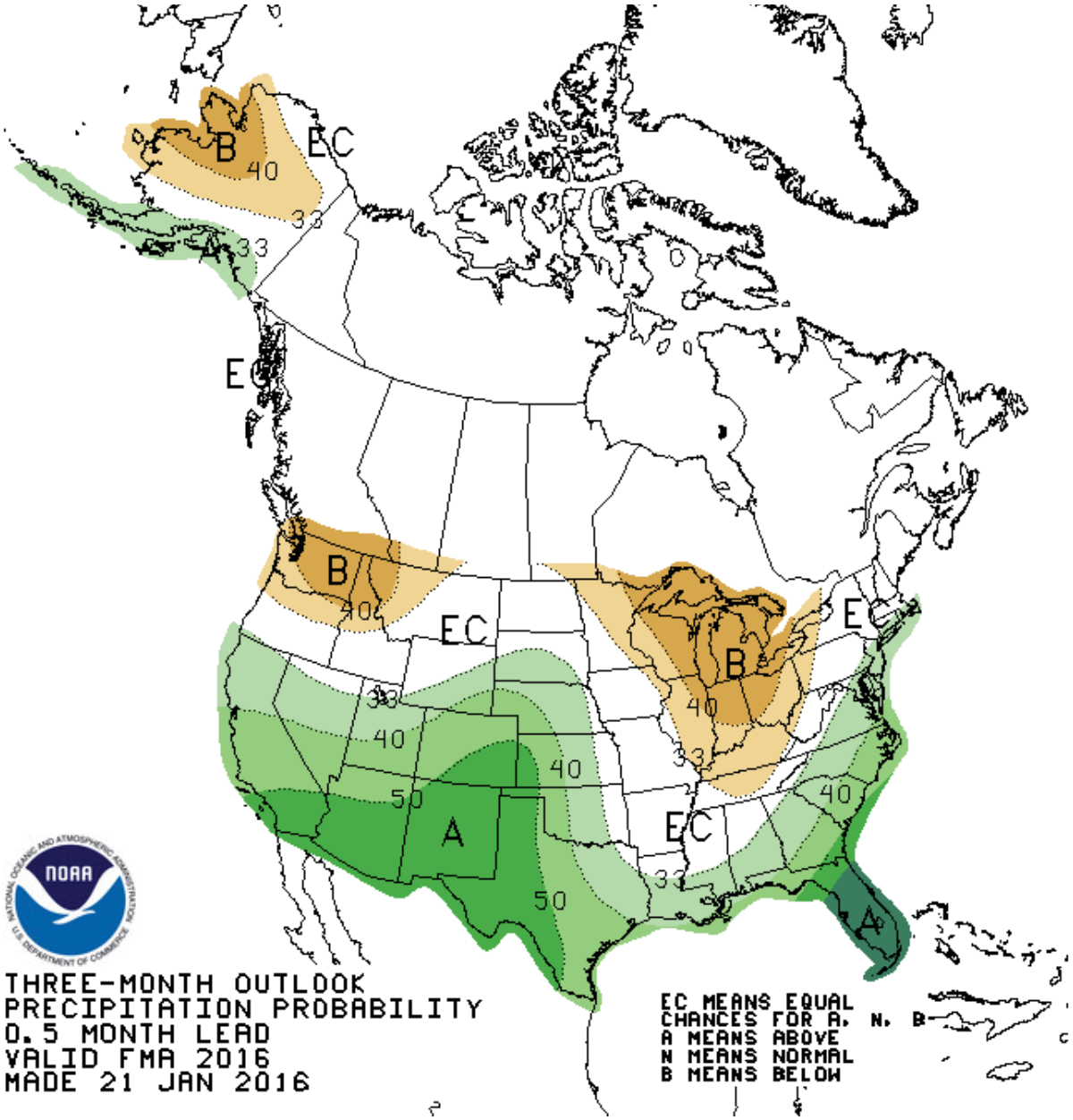
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Mark Svoboda
National Drought Mitigation Center

http://droughtmonitor.unl.edu/

Figure 5


B
EC
40
33
33
EC
B
40
EC
33
40
40
50
A
B
40
33
EC
40
33
50
A
THREE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
0.5 MONTH LEAD
VALID FMA 2016
MADE 21 JAN 2016
EC MEANS EQUAL
CHANCES FOR A, N, B
A MEANS ABOVE
N MEANS NORMAL
B MEANS BELOW

WATER COMMISSION
INFORMATION REPORT

DATE: 1/27/2016

AGENDA OF:	February 1, 2016
TO:	Water Commission
FROM:	Rosemary Menard, Water Director
SUBJECT:	Santa Cruz Water Department Financial Plan Inputs, 10 Year Capital Improvement Financing Strategy and 5 Year Operating and Capital Financing Plan, and Proposed Water Rates Needed to Support the 5 Year Plan (Presentation and Discussion)

RECOMMENDATION: Receive and discuss information on Santa Cruz Water Department Financial Plan Inputs, 10 Year Capital Improvement Financing Strategy and 5 Year Operating and Capital Financing Plan, and Proposed Water Rates Needed to Support the 5 Year Plan.

BACKGROUND: During much of the last 18 months, the Water Department has been heavily involved in analyzing and developing a financial sustainability plan for the utility. Water Department staff and consultants began efforts to complete the financial planning work plan adopted by the City Council when it adopted the new rates and are now moving through the final tasks of this work plan.

The goal of the discussion of the status and recommendations of the financial planning and rate-making work during the Water Commission's January, February and March 2016 meetings is to work is to provide a solid foundation for the Water Commission to use in building its recommendations to the City Council. Following up on the January discussion of the Cost of Service Analysis and Rate Structure Design, the February discussion will focus on the Financial Plan and in March, water rates will be the focus.

DISCUSSION: As part of the process to develop a financial plan and revised rates, the Department has worked with two consulting firms: Public Financial Management (PFM) for financial planning and Raftelis Consultants for rate making. The Commission is familiar with the work and work products of Raftelis Consultants. PFM was engaged to assist with another part of the financial planning work: debt capacity assessment and debt issuance planning.

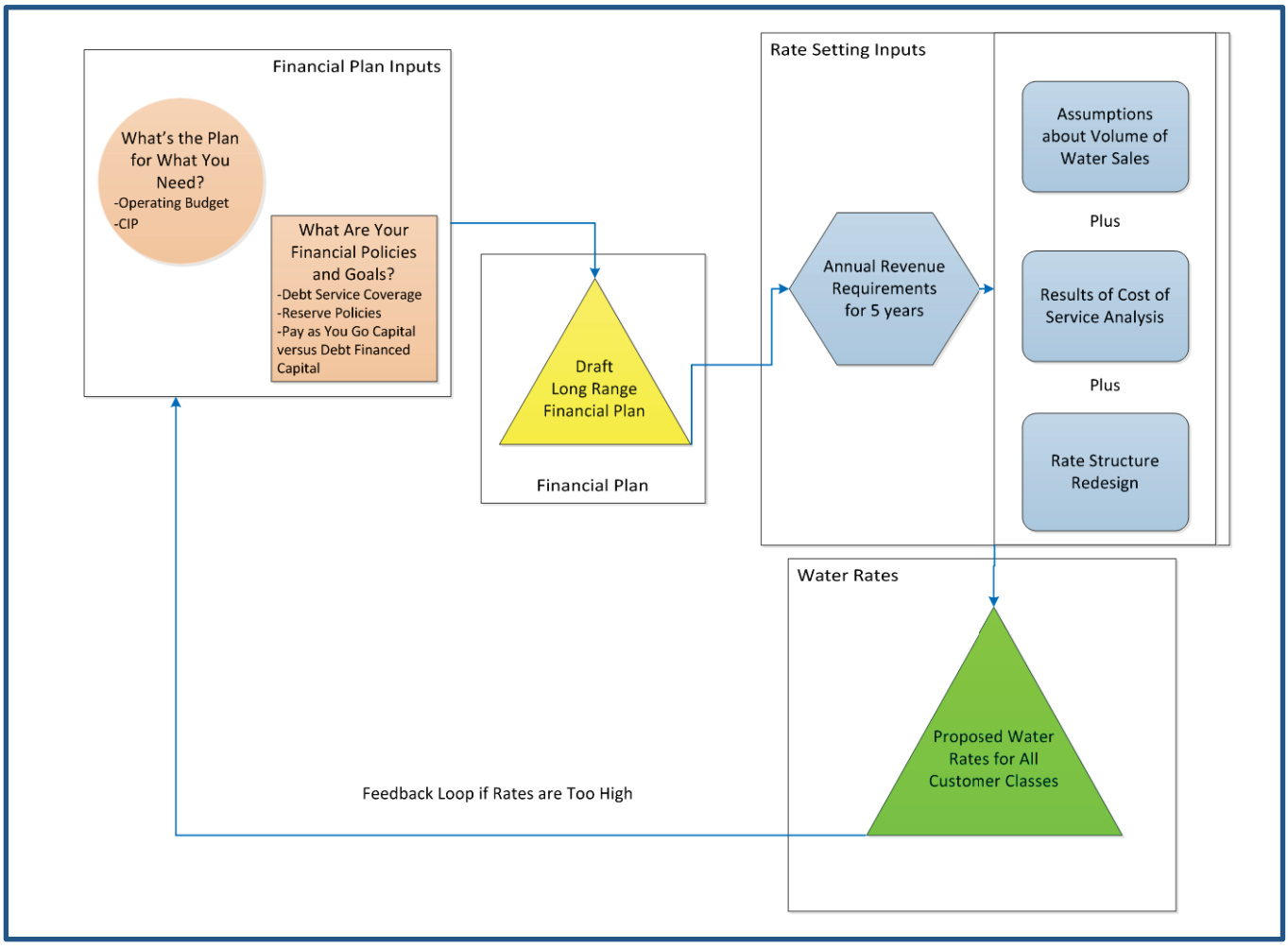
During the Water Supply Advisory Committee process, several committee members as well as several Water Commission members asked questions about the Department's capacity to issue debt to finance capital improvements to its system. PFM was engaged to assist the Department in understanding the opportunities and constraints for using debt to help finance its CIP, to provide review of its financial policies, and to advise the Department on how to establish and

maintain a sustainable financial position that would support access to capital markets on favorable terms. Attachment 2 provides the biography for the key PMF staff the Department has been working on in this effort.

A Conceptual Model of Financial Planning and Rate Making

Financial planning and rate making for today's water utility involves a comprehensive multi-stepped process depicted in Figure 1 on the following page. The figure depicts the inputs and outputs of the utility financial planning and rate--making processes and the feedback loop between proposed rates, the end product of the process, and the organization's budget and CIP, key inputs to the process.

Figure 1
Conceptual Model of Utility Financial Planning and Rate Making



On the upper left are inputs to both the financial planning and rate-making processes. The Department's operating budget and CIP are developed to include the ongoing work as well as the projects, be they planning or construction projects that the Department needs to get done.

The Water Commission has seen the Department's Operating and Capital budgets over time and has had presentations about the state of the water system and its needs as well be kept abreast of the work the Department has accomplished through the annual Parade of Projects presentations.

Financial policies lay out broad and specific financial planning goals that are intended to lay out a pathway for the utility to achieve its programmatic goals while ensuring the financial sustainability of the Water Enterprise. Major elements of the financial policies described in more detail in the draft Long Range Financial Plan included as Attachment 3 will also be familiar to many Water Commission members as they were discussed during the 2014 rate-making process.

Working together with PFM, a model was created that allowed the Department to set up a series of financial planning and policy parameters that needed to be satisfied, incorporate operating and capital budgets and generate annual revenue requirements, which is a major input into the rate-making process. These revenue projections include anticipated debt service to repay anticipated long-term financing through loans and bonds, assumptions about how much of the capital program will be cash financed versus debt financed, meeting reserve targets etc. Using these revenues, the Cost of Service Analysis and Rate Structure Design work done by Raftelis, and the assumption about water sales provided by the Water Department, Raftelis staff can develop proposed rates. Rate adjustments, if needed, require the adjustments of Financial Plan inputs and the steps described here are repeated.

Draft Long Range Financial Plan

The attached draft Long Range Financial Plan (LRFP or Financial Plan) covers the work that has been done by the Department and its consultants on developing financial plan inputs and putting together the main elements of a financial plan and strategy for the coming decade. The Financial Plan is designed around the following priorities:

- Continuing the efficient operation of a water utility serving consumers both inside and outside the city boundaries.
- Capital projects to comply with State regulatory requirements
- Capital projects to address infrastructure reinvestment and rehabilitation
- Advancement of the Water Supply Advisory Committee recommended Water Supply Augmentation Strategy

The Draft LRFP and Operating Budget and 10 Year Capital Improvement Program summarized in Appendices A and B of the document assign costs to these priorities over time.

Policy Considerations

As mentioned in the Financial Plan report the Water Department's priorities are focused on the following major areas;

- Continuing the efficient operation of a water utility serving consumers both inside and outside the city boundaries.
- Capital projects to comply with State regulatory requirements

- Capital projects to address infrastructure reinvestment and rehabilitation
- Advancement of the Water Supply Advisory Committee recommended Water Supply Augmentation Strategy

The draft LRFP and 10 Year Capital Improvement Program focuses on making the investments needed to achieve these priorities over time. The policy considerations for the Water Commission and City Council related to the draft Financial Plan focus on three primary areas;

- **Debt Service Coverage** – The draft LRFP maintains a debt service coverage ratio of 1.50 annual revenues to debt service which is an acceptable coverage to maintain the existing bond rating and provide access to capital markets.
- **Pay-as-you-go capital funding versus debt-financed capital** – There is no industry standard or best practice for this metric. The factors that should be considered are debt capacity, day's cash on hand and intergenerational equity.
- **Reserve Policies** – The draft LRFP fully funds reserves using one-time funds from the I-Bank reimbursement.

RECOMMENDED MOTION: No Action Requested at this time. Request the Commission provide feedback on the draft Long Range Financial Plan document, including the policy questions identified in this staff report.

Attachment 1
City of Santa Cruz
Water Department
Rate and Fee Issue Work Plan

Date	Task
August 25, 2014	Review the 2014-15 Rate and Fee Issue Work Plan with Water Commission
System Development Fees	
October 2014	**1. Policy Discussion** Goal: RFC will discuss the policy framework for the System Development Fees with Water Commission and key staff: a. Framework for the System Development and i. How can Santa Cruz fairly accommodate growth, given ongoing drought conditions?
November 2014-January 2015	**2. System Development Fees** Task: Based on the policy direction received from the Water Commission, RFC will conduct the System Development and analysis. a. Workshop to be held with the Water Commission.
February-March 2015	**3. System Development results will be presented to the Water Commission.**
March 2015	**4. Recommended results will be presented to City Council.**
	5. Fee Adoption
April / May 2015	a. Report Development
May / June 2015	b. Fee Adoption
July 1, 2015	c. Fee implementation
Water Rates	
March 2015	**1. Policy Discussion** Goal: Establish the intent and objective(s) of the rate structure (i.e. what should the new rate structure accomplish?). This will be conducted by engaging the Water Commission and key staff in a Pricing Objective exercise, where they will rank the objectives that they believe are the most important. a. Trends in water rates structure b. Establish the goals and policy of the Water Commission i. Water Commission and key staff will be asked to rank these goals/objectives
April-May 2015	c. Based on input provided by the Water Commission and key staff, RFC will present a framework for the rate structure best suited for each customer class.
	2. Cost of Service / Rate Design a. Task: Based on the policy direction received from the Water Commission, RFC will develop the appropriate models that can examine different conservation rate structures by customer class.
June-October 2015	i. Cost of Service / Rate Design 1. Several webinars and staff meetings will be conducted during this time period
November-January 2015	b. Workshop with Water Commission / City Council i. Present the draft results and receive input from Water Commission and, potentially, City Council.
February 2016 March 2016 Spring 2016 July 1, 2016	**3. Rate Adoption** a. Prop 218 Notice b. Report Development c. Rate Adoption/Prop. 218 Public Hearing d. Rate implementation

Attachment 2

Biographies for Public Financial Management Key Staff

Robert Gamble
Managing Director
Public Financial Management

Robert Gamble is a Managing Director in PFM's San Francisco office. His major focus at PFM has been the development and implementation of public-private partnerships (P3) and the creation of public financing strategies in support of those partnerships. In this area, he has supported the development of Yerba Buena Gardens, Rincon Point South Beach, and AT & T ballpark in San Francisco. In addition to general policy and financial work, he also focuses on the financing of affordable housing and financing of non-profit facilities.

With over 25 years in public finance and policy, Mr. Gamble previously served as Budget Director for the city and County of San Francisco under two mayors, Chief Financial Officer of the San Francisco Redevelopment Agency, and Executive Director of the Richard and Rhoda Goldman Fund.

His undergraduate degree is from Duke University and his Masters of Public Policy is from the Graduate School of Public Policy at the University of California at Berkeley.

Brian Thomas
Managing Director
Public Financial Management

Brian Thomas served in the public sector for almost 30 years before joining The PFM Group as a Managing Director in the Los Angeles office in 2011.

For the last ten and a half years, Mr. Thomas was the Assistant General Manager and Chief Financial Officer for the Metropolitan Water District of Southern California, the nation's largest supplier of treated drinking water. As the Assistant General Manager and Chief Financial Officer, he was responsible for all financial functions, including treasury and debt management, capital planning, financial reporting, the $1.8 billion expenditure budget, and water rates and charges. In addition, he was an important participant in negotiations involving water transfers, water wheeling, and the development of local water resources, including work on Metropolitan's local resource program and groundwater conjunctive use projects.

While Mr. Thomas was the Chief Financial Officer, Metropolitan issued over $5 billion of debt, including almost $2 billion of variable rate debt. In addition, during his tenure, Metropolitan executed almost $2 billion (notional) of interest rate swaps. He negotiated swap terms, terminated swaps and innovated swaps as Metropolitan managed through the financial crisis. Further, as bank liquidity became scarce and more expensive, Metropolitan developed alternative ways to address the need for floating rate debt, including issuing variable rate bonds supported by Metropolitan's own liquidity and issuing over $200 million of SIFMA Index Tender Bonds. Metropolitan was upgraded to AAA by Standard and Poor's and Fitch, and to Aa1 by Moody's, while Mr. Thomas was the Chief Financial Officer.

Also, Mr. Thomas served as the Assistant General Manager of Finance and Administration for the public utilities in the cities of Anaheim and Riverside. While serving in that capacity, he was responsible for all financial functions, as well as customer service and power resource planning. Mr. Thomas participated as a member of the Southern California Public Power Authority's Finance Committee while at Riverside and the Intermountain Power Project's Coordinating Committee when working for Anaheim.

Since his arrival at PFM, Mr. Thomas has been working with water and wastewater utilities in the California and Nevada, including the Southern Nevada Water Authority, Calleguas Municipal Water District, Eastern Municipal Water District, the Los Angeles Department of Water &Power, the City of Riverside Public Utilities Department and the Metropolitan Water District of Southern California on issues ranging from long-range financial planning, reserve policies, alternative procurement strategies, and debt structures.

Mr. Thomas is a frequent speaker at industry forums and has lectured in the field of water resource economics at Cal Poly, Cal State, Fullerton, and Cal State, Long Beach. He received a Bachelor of Science in Biology and a Bachelor of Science in Economics from California State Polytechnic University, Pomona. He also has a Master's degree and a Ph.D. in Economics from the University of California, Riverside.

APPENDIX A

City of Santa Cruz Water Department | Long Range Financal Plan (LRFP)

City of Santa Cruz Water Department

Draft 10 Year Long Range Financial Plan (LRFP)

10 Year Pro Forma

	Description	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	TOTAL 2017-2021	CIP Funding Percentage	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	TOTAL 2017-2026	CIP Funding Percentage
	Operating Revenues															
2	Fixed Fee Revenue	$ 9,806,318	$ 11,322,374	$ 12,333,915	$ 13,435,827	$ 14,636,184	$ 15,943,781	$ 67,672,081		$ 17,368,198	$ 18,919,873	$ 20,610,175	$ 22,451,488	$ 23,798,577	170,820,392	
3	Volumetric Revenue at Present Rates w/ Baseline Demand	13,404,375	16,329,488	19,908,378	19,937,471	20,217,796	20,276,958	96,670,091		20,336,270	20,373,996	20,411,625	20,449,229	$ 21,676,183	199,917,394	
4	Volumetric Revenue from Rate Increases w/ Baseline Demand	-	2,449,423	4,932,301	7,054,052	9,479,771	12,039,191	35,954,738		14,829,314	17,851,444	21,139,577	24,716,880	$ 26,199,893	140,691,846	
5	Lost Revenue from Quantity Effect of Price Change		(296,731)	(630,522)	(975,893)	(1,421,205)	(1,957,346)	(5,281,697)		(2,614,581)	(3,413,877)	(4,383,406)	(5,557,102)	$ (5,890,528)	(27,141,191)	
6	Elevation Surcharges	103,105	120,759	130,985	138,233	138,656	139,242	667,875		139,830	140,421	141,015	141,611	$ 150,108	1,380,860	
7	Total Rate Revenue	23,313,798	29,925,313	36,675,057	39,589,690	43,051,202	46,441,826	195,683,088		50,059,031	53,871,857	57,918,986	62,202,106	65,934,232	485,669,300	
8	Non-Rate Revenue	1,120,364	883,457	730,584	96,178	-	-	1,710,219		-	-	-	-	-	-	
9	Total Operating Revenue	24,434,162	30,808,770	37,405,641	39,685,868	43,051,202	46,441,826	197,393,307		50,059,031	53,871,857	57,918,986	62,202,106	65,934,232	487,379,519	
	Expenses															
10	Operation & Maintenance (O&M)															
11	Salary & Benefits	$ 11,730,581	$ 13,043,078	$ 14,145,403	$ 15,336,060	$ 16,100,927	$ 16,916,171	$ 75,541,639		$ 17,785,772	$ 18,714,052	$ 19,705,703	$ 20,765,825	$ 22,011,774	174,524,766	
12	Variable Costs	2,283,599	2,919,294	3,196,086	3,783,908	4,142,707	4,540,825	$ 18,582,820		4,977,200	5,455,516	5,979,797	6,554,460	$ 6,947,728	48,497,521	
13	Maintenance	1,741,700	1,793,951	1,847,770	1,903,203	1,960,299	2,019,108	$ 9,524,329		2,079,681	2,142,071	2,206,333	2,272,523	$ 2,408,875	20,633,813	
14	Other Operating Expenses	7,921,143	8,158,777	8,403,541	8,655,647	8,915,316	9,182,776	$ 43,316,057		9,458,259	9,742,007	10,034,267	10,335,295	$ 10,955,413	93,841,297	
15	Total O&M Expenses	$ 23,677,023	$ 25,915,101	$ 27,592,799	$ 29,678,817	$ 31,119,249	$ 32,658,880	$ 146,964,845		$ 34,300,912	$ 36,053,646	$ 37,926,101	$ 39,928,104	$ 42,323,790	337,497,397	
16	**Net Operating Revenues**	**$ 757,139**	**$ 4,893,669**	**$ 9,812,842**	**$ 10,007,051**	**$ 11,931,953**	**$ 13,782,946**	**$ 50,428,462**		**$ 15,758,119**	**$ 17,818,211**	**$ 19,992,885**	**$ 22,274,002**	**$ 23,610,443**	**149,882,122**	
	Capital Project Costs & Funding															
17	Capital Improvement Program Costs	$ 653,129	$ 14,698,100	$ 13,579,520	$ 35,774,344	$ 37,574,757	$ 26,251,158	$ 127,877,879		$ 15,635,558	$ 48,913,507	$ 45,672,352	$ 47,955,970	$ 12,442,250	298,497,517	
18	**Pay-Go Funded**	**653,129**	**7,278,796**	**5,917,724**	**5,035,952**	**7,120,186**	**7,015,414**	**32,368,072**	**25%**	**7,163,189**	**9,146,848**	**8,769,291**	**8,611,298**	**2,737,295**	**68,795,993**	**23%**
19	**Debt Funded**	**-**	**7,419,304**	**7,661,796**	**30,738,392**	**30,454,571**	**19,235,744**	**95,509,807**	**75%**	**8,472,369**	**39,766,659**	**36,903,061**	**39,344,672**	**9,704,955**	**229,701,523**	**77%**
20	Debt Service	748,938	2,063,807	3,481,440	4,456,740	4,456,592	6,387,896	20,846,475		8,190,046	8,239,183	10,761,893	13,169,060	13,959,204	75,165,861	
21	Debt Service as a % of Rate Revenue		6.9%	9.5%	11.3%	10.4%	13.8%	10.7%		16.4%	15.3%	18.6%	21.2%	21.2%	15.5%	
22	**Net Income (Loss)**	**$ (644,928)**	**$ (4,448,934)**	**$ 413,678**	**$ 514,359**	**$ 355,175**	**$ 379,636**	**$ (2,786,085)**		**$ 404,884**	**$ 432,180**	**$ 461,701**	**$ 493,644**	**$ 6,913,944**	**$ 5,920,268**	
23	**Cash Balances**															
24	Beginning Unrestricted Cash Balance	11,483,886	**10,838,959**	6,390,025	6,803,703	7,318,062	7,673,237	39,023,986		8,052,873	8,457,757	8,889,938	9,351,639	9,845,283	83,621,476	
25	Net Change to Cash Balances	(644,928)	(4,448,934)	413,678	514,359	355,175	379,636	(2,786,085)		404,884	432,180	461,701	493,644	6,913,944	5,920,268	
26	**Ending Cash Balance**	**10,838,959**	**6,390,025**	**6,803,703**	**7,318,062**	**7,673,237**	**8,052,873**	**36,237,901**		**8,457,757**	**8,889,938**	**9,351,639**	**9,845,283**	**16,759,227**	**89,541,744**	
	Debt Coverage & Targets															
27	**Debt Service Coverage (DSC) W/Out Reserves**	**1.01%**	**2.37%**	**2.82%**	**2.25%**	**2.68%**	**2.16%**			**1.92%**	**2.16%**	**1.86%**	**1.69%**	**4.75%**		
28	Debt Service Coverage (DSC) Target	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%			1.50%	1.50%	1.50%	1.50%	1.50%		
29	**Day's Cash**	**165**	**90**	**90**	**90**	**90**	**90**			**90**	**90**	**90**	**90**	**90**		
30	Day's Cash Target	90	90	90	90	90	90			90	90	90	90	90		

APPENDIX B

City of Santa Cruz Water Department | Draft Long Range Financal Plan (LRFP)

City of Santa Cruz Water Department

Water Financial Plan

Capital Improvement Program

Description	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	TOTAL 2017-2021		FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	TOTAL 2017-2026
Water Sources/Supply Projects														
Felton Diversion Replacement & Pump Station		$ -	$ 1,500,000	$ 1,500,000	$ 1,500,000	$ -	$ 4,500,000		$ -	$ -	$ -	$ -	$ -	4,500,000
Laguna Dam	-	-	-	-	-	-	-		-	-	-	-	500,000	500,000
Majors Creek Diversion	-	-	-	-	-	-	-		-	-	-	-	300,000	300,000
San Lorenzo River Diversion & Tait Wells	800,000	-	-	-	-	-	800,000		-	-	-	-	-	800,000
Aquifer Storage & Recovery	535,000		1,075,000	325,000	300,000	-	2,235,000		-	-	-	-	-	2,235,000
Recycled Water	480,000						480,000		-	-	-	-	-	480,000
Prior Water Supply Projects (TO CLOSE)	(961,871)						(961,871)		-	-	-	-	-	(961,871)
Water Supply- WSAS Implementation	-	-	-	-	1,200,000	7,200,000	8,400,000		6,000,000	30,000,000	30,000,000	30,000,000		104,400,000
Total	853,129	-	2,575,000	1,825,000	3,000,000	7,200,000	15,453,129		6,000,000	30,000,000	30,000,000	30,000,000	800,000	112,253,129
Water Collection Projects														
Newell Creek Pipeline Rehabilitation	$ -	$ 1,000,000	$ 1,000,000	$ 8,000,000	$ 8,000,000	$ -	18,000,000		$ -	$ -	$ -	$ -	$ -	18,000,000
Newell Creek Dam Inlet/Outlet Pipeline	200,000	2,000,000	2,000,000	14,000,000	12,000,000	12,000,000	42,200,000		-	-	-	-	-	42,200,000
North Coast System Rehabilitation	-	4,150,000	-	-	-	-	4,150,000		-	-	-	-	4,000,000	8,150,000
Beltz Well #4 & #12	-	-	-	-	-	-	-		-	-	-	-	-	-
Total	$ 200,000	$ 7,150,000	$ 3,000,000	$ 22,000,000	$ 20,000,000	$ 12,000,000	$ 64,350,000		$ -	$ -	$ -	$ -	$ 4,000,000	68,350,000
Water Treatment Projects														
Bestz #11	-	70,000	300,000	-	-	-	370,000		-	-	-	-	-	370,000
Water Treatment Plant Tank Assessment	-	600,000	3,000,000	3,000,000	3,000,000	-	9,600,000		-	-	-	-	-	9,600,000
Water Treatment Plant Solids Handling	-	500,000	-	-	-	-	500,000		-	-	-	-	-	500,000
Water Treatment Plant Filter Rehabilitiation & Upgrades	-	-	-	-	-	-	-		-	-	-	-	-	-
Source Water Evaluation	200,000	500,000	500,000	3,000,000	3,000,000	-	7,200,000		-	-	-	-	-	7,200,000
Water Treatment Upgrades	(200,000)	-	-	-	-	-	(200,000)		-	-	-	-	-	(200,000)
Total	-	1,670,000	3,800,000	6,000,000	6,000,000	-	17,470,000		-	-	-	-	-	17,470,000
Water Distribution Projects														
Water Main Replacements - c700002,9833,0017	(200,000)	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	7,300,000		1,500,000	1,500,000	1,500,000	1,500,000	2,500,000	15,800,000
Water Main Replacements - Outside Agency	-	250,000	250,000	250,000	250,000	250,000	1,250,000		250,000	250,000	250,000	250,000	250,000	2,500,000
Water Main Replacements - Customer Initiated	-	50,000	50,000	50,000	50,000	50,000	250,000		50,000	50,000	50,000	50,000	50,000	500,000
Water Main Replacements - c701507	-	325,000	325,000	325,000	325,000	325,000	1,625,000		325,000	325,000	325,000	325,000	325,000	3,250,000
Total	(200,000)	2,125,000	2,125,000	2,125,000	2,125,000	2,125,000	10,425,000		2,125,000	2,125,000	2,125,000	2,125,000	3,125,000	22,050,000
Facilities Projects														
Advance Metering Infrastructure (AMI)	-	-	-	-	-	50,000	50,000		4,000,000	4,000,000	-	-	-	8,050,000
Loch Lomand Recreation Improvements	-	-	-	165,000	1,000,000	-	1,165,000		-	-	-	-	-	1,165,000
Photovoltaic Solar Projects	-	500,000	-	-	-	-	500,000		-	-	-	-	-	500,000
Water Resources Building		1,000,000	-	-	-	-	1,000,000							
Total	-	1,500,000	-	165,000	1,000,000	50,000	2,715,000		4,000,000	4,000,000	-	-	-	9,715,000
Water Storage Projects														
Bay Street Reservoir	(200,000)	-	-	-	-	-	(200,000)		-	-	-	-	-	(200,000)
Recoat University Reservior No. 4	-	75,000	1,300,000	-	-	-	1,375,000		-	-	-	-	-	1,375,000
Recoat University Reservior No. 5	-	1,750,000	-	-	-	-	1,750,000		-	-	-	-	-	1,750,000
Total	(200,000)	1,825,000	1,300,000	-	-	-	2,925,000		-	-	-	-	-	2,925,000
TOTAL CIP	**653,129**	**14,270,000**	**12,800,000**	**32,115,000**	**32,125,000**	**21,375,000**	**113,338,129**		**12,125,000**	**36,125,000**	**32,125,000**	**32,125,000**	**7,925,000**	**232,763,129**
Handy-Whitman Construction annual inflation factor		3%	3%	5%	5%	5%			5%	5%	5%	5%	5%	
Cummulative inflation factor		103%	106%	111%	117%	123%			129%	135%	142%	149%	157%	
TOTAL CIP WTH INFLATION FACTOR	**653,129**	**14,698,100**	**13,579,520**	**35,774,344**	**37,574,757**	**26,251,158**	**127,877,879**		**15,635,558**	**48,913,507**	**45,672,352**	**47,955,970**	**12,421,902**	**298,477,169**

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ATTACHMENT 3

City of Santa Cruz Water Department
DRAFT
Long Range Financial Plan

Prepared by: Rosemary Menard, Water Department Director

February 2016

Long Range Financial Plan

Table of Contents

I. Executive Summary

The draft Long Range Financial Plan (LRFP or Financial Plan) was developed to gauge the financial sustainability of the Water Enterprise while implementing a funding plan for continued operations, maintenance, and capital investments consistent with the Department's current priorities. Priorities include:

- Continued operational efficiency and reliability,
- Maintaining regulatory compliance,
- Continued reinvestment in infrastructure, and
- Advancing the recommendations of the Water Supply Advisory Committee (WSAC).

In the work done to prepare this draft Financial Plan, City staff with the support of consultants, have done the analyses necessary to answer the question, "Can we accomplish all of the operational and capital priorities using a combination of annual rate revenue (pay-as-you-go) and debt financing while maintaining the adequate cash reserves and operating flexibility necessary to ensure the Department's ability to continue to provide reliable and affordable water service to its customers."

The key realities, assumptions, conclusions, and recommendations of this Financial Plan include the following points:

- The unrestricted fund balance of the water operating fund has historically been strong, but has been declining during the past four fiscal years. The customer base is stable, primarily residential and very diverse with the top 10 customers accounting for only 11% of total operating revenues. The service area economy is also stable anchored by the University of California at Santa Cruz. The Utility's debt obligations were recently affirmed at AA- by Standard & Poor's Ratings Services with a Stable Rating Outlook.

- Currently, annual rate increases of 10% have been approved through 2018. Water rate structure redesign and rate-setting work is currently underway and revised rates will be proposed for action by the Water Commission and the City Council during the winter and spring of this year. For planning purposes it has been assumed that any revised rate structure and revised scheduled increases will replace and update existing rates for a new five year period from fiscal year 2016-17 through 2020-21 and that approved changes will take effect July 1, 2016.

- Capital investments of $127.8 million are planned through 2021 including water sources, collection, treatment, distribution, facilities and storage projects funded with a

combination of annual pay-as-you-go funding and long-term debt. The total capital investment for the 10 year planning horizon equals $298.4 million (inflation adjusted 2015 dollars). The three primary cost drivers of the draft LRFP include funding that will address the following priorities;

1. Capital projects to comply with State regulatory requirements;
2. Capital projects to address infrastructure reinvestment and rehabilitation; and
3. Advancement of the Water Supply Advisory Committee recommended Water Supply Augmentation Strategy.

- The LRFP has been developed based on a specific five year forecast within a ten year planning horizon. The purpose of using the 10 year time frame was to assess the Department's ability to, and potential consequences of, using debt to finance a significant portion of its anticipated capital in the coming decade. In particular, the Department wanted to determine if using debt would result in any significant negative impacts to the Department's ability to reliably and affordably provide water service to its customers, while still maintaining the flexibility and financial capacity to respond to emergencies or other financial challenges.

- The draft LRFP identifies the level of debt financing needed to fund the capital plan while maintaining adequate cash balances, and a reasonable amount of annual debt service payments. The capital financing model discussed in this report helps to estimate the amount of annual revenue needed to support the Department's programs and ensure that the anticipated new debt service necessary to finance capital spending can be met through rate revenues.

- The Financial Plan recommends that the Capital Improvement Program (CIP) be funded with a combination of rate revenue and debt financing. Over the next five years, pay-as-you-go rate revenue would cover an average of 25% of capital costs with debt financing covering 75%.

- Using debt financing to fund a major portion of the CIP provides for inter-generational equity and, by spreading these costs over time, helps to moderate and stabilize future adjustments to water rates. During the first five years, the Department anticipates issuing debt totaling $95.5 million while maintaining a minimum debt service coverage ratio of 1.5 (ratio of 1.5 annual revenues to annual debt service costs). The annual average debt service is not expected to exceed 14% of annual rate revenue during the first five years, but would continue to rise to a maximum of about 21% of annual revenues at the end of the 10 year period.

- The draft LRFP plans for and addresses the mechanisms to fund several financial reserves established by the City Council in September 2014. It recommends maintaining the Rate Stabilization Reserve of $2.3 million and fully funding the Water Emergency Reserve Fund at the $3 million level. In addition, a new Water 90-Day Operating Cash Reserve Fund is fully funded and along with balances carried in the primary O&M fund will maintain a total of 180-days operating cash that will help maintain the department's credit rating and support the Department's ability to access capital markets on favorable terms. Additional funds will need to be added to the 90-Day Cash Reserve Fund annually to maintain this fund at the desired funding level over time.

- The Department request for a low interest loan from the California Infrastructure and Economic Development Bank (I-Bank) of $25 million is currently under review by the State and the LRFP assumes $15.5 million of eligible capital project costs will be reimbursed during FY 2016. It is recommended that a portion of these funds be used to fully fund reserves with the remainder supporting ongoing O&M and capital project costs.

- Future water rates will depend on the Department's cost to provide water service, which may vary from those assumed in the LRFP.

This report has been prepared to solicit feedback on specific policy issues including the following three major questions:

- Debt Service Coverage – The draft LRFP maintains a debt service coverage ratio of 1.50 annual revenues to debt service. Is this level of debt service coverage an acceptable coverage level to maintain the existing bond rating and provide access to capital markets on favorable terms?

- Pay-as-you-go capital funding versus debt financed capital – While there is no industry standard or best practice for this metric, is the recommended 25%/75% split between pay-as-you-go and debt financed capital a reasonable and affordable expectation?

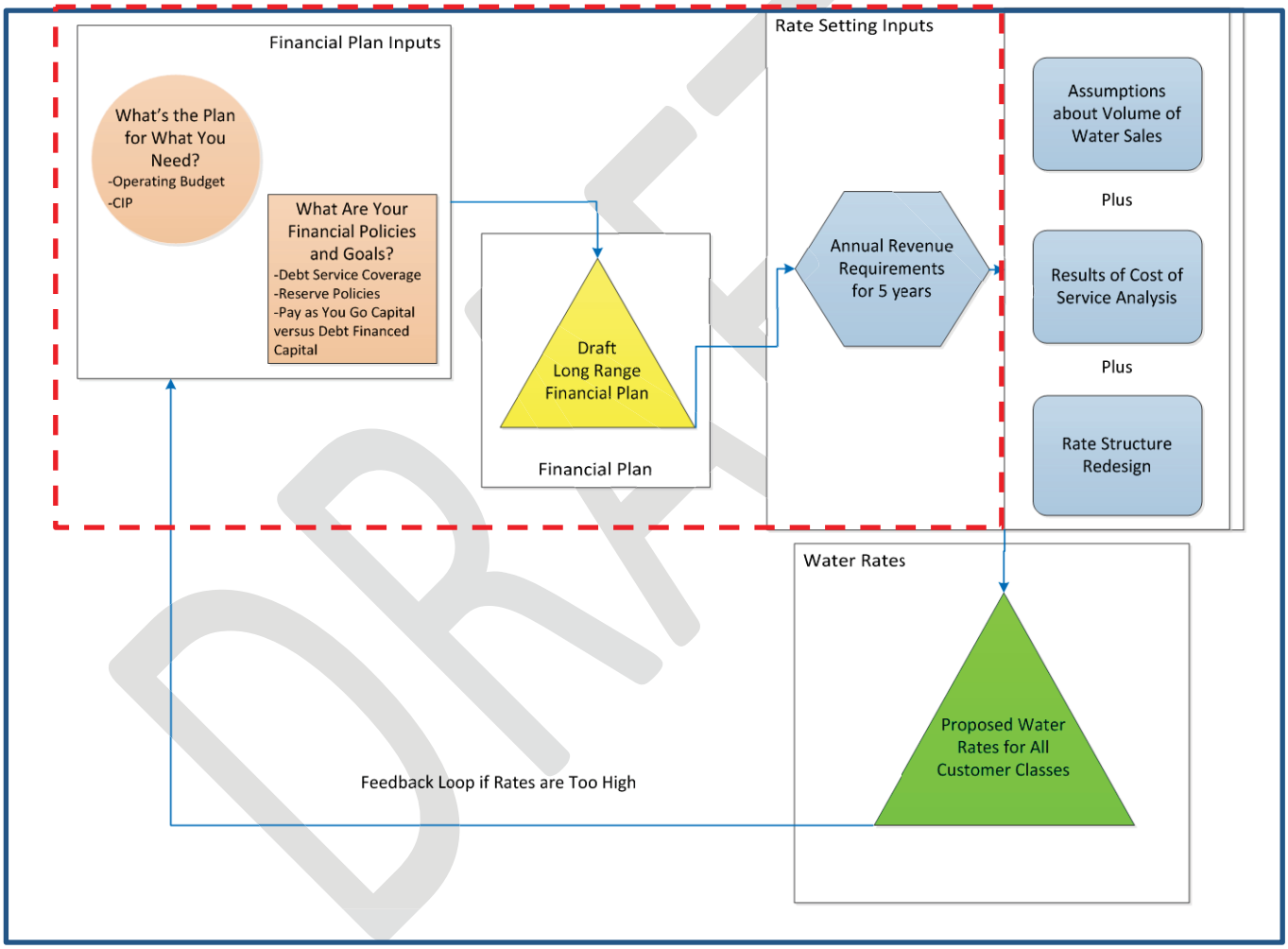
- Reserve Policies – Should the Department fully fund Operating and Emergency Reserves using one-time funds from the I-Bank reimbursement?

II. Introduction

Financial planning and rate making for today's water utility involves a comprehensive multi-stepped process depicted in Figure 1 below. The figure shows the inputs and outputs of the utility financial planning and rate making processes and the feedback loop between proposed rates, the end product of the process, and the organization's budget and Capital Improvement Program (CIP), key inputs to the beginning of the process.

Figure 1

Conceptual Model of Utility Financial Planning and Rate Making



The red dashed line describes the elements covered in detail in this draft of the Financial Plan, ending with the Annual Revenue Requirements, a key input to the rate-making process. The final version will incorporate discussions of the remaining elements as they become available.

On the upper left are inputs to both the financial planning and rate making processes. The Department's operating budget and CIP are developed to include the ongoing work as well as the projects, be they planning or construction projects that the Department needs to get done.

Both the Water Commission and City Council have seen the Department's Operating and Capital budgets over time, as well as the 2015 presentation about the state of the water system and its needs.

Another key input to the financial planning process is financial policies. Financial policies lay out broad and specific financial planning goals that are intended to create parameters within which the Department can operate to achieve its programmatic goals while ensuring the financial sustainability of the Water Enterprise. Financial policies are a major element of the draft of the Long Range Financial Plan, which is a ten year financing strategy with a specific financial plan for the first five years. Some of the financial policies used in developing the draft LRFP will be familiar to members of the Water Commission and City Council as they were discussed during the 2014 rate-making process.

Working together with its consultants, Public Financial Management (PFM) and Raftelis Financial Consultants (Raftelis), a model was created that allowed the Department to set up a series of financial planning and policy parameters that needed to be satisfied, incorporate operating and capital budgets and determine annual revenue requirements which, as shown in Figure 1, are a major input into the rate-making process.

The revenue projections developed for this financial planning process include revenues needed to cover debt service payments loans and bonds used to fund capital investments; assumptions about how much of the capital program will be cash financed versus debt financed; and funds required to meet reserve targets, etc.

Using these revenue projections, along with the Cost of Service Analysis and Rate Structure Redesign work being done by Raftelis, and the assumption about water sales provided by the Water Department, Raftelis staff can develop proposed rates. Adjustments to rates, if needed, require the adjustments to Financial Plan inputs and the steps described here are repeated.

This draft of the LRFP is focused on the describing and discussing the financial planning inputs and the annual revenue requirements input to the rate-making process. Raftelis is working on producing draft proposed rates and their results will be incorporated into an updated version of this plan when they are available.

A. Policy Issues

A series of important policy questions are discussed in this report. Specifically, the Department would like to receive the Water Commission's feedback on the following three major financial planning policy issues:

- Debt Service Coverage – The draft LRFP maintains a debt service coverage ratio of 1.50 annual revenues to debt service. Is this level of debt service coverage an acceptable coverage level to maintain the existing bond rating and provide access to capital markets on favorable terms?
- Pay-as-you-go capital funding versus debt financed capital – While there is no industry standard or best practice for this metric, is the recommended 25%/75% split between pay-as-you-go and debt financed capital a reasonable and affordable expectation?
- Reserve Policies – Should the Department fully fund Operating and Emergency Reserves using one-time funds from the I-Bank reimbursement?

III. Inputs to the Financial Plan

The draft Financial Plan and 10 year Pro Forma shown in Appendix A have been prepared using an Excel based capital planning model developed by Public Financial Management (PFM). Based on a beginning fund balance, operating expenses with projected inflation factors, capital cost projections, funding sources, and debt sizing and timing the model solves for rate revenue necessary to meet the minimum debt service coverage ratio and other financial goals. In this section, goals, policies and key assumptions about Financial Plan inputs will be presented and discussed.

A. Operating and Capital Budgets

Table 1 shows anticipated operating and capital expenses for Fiscal Years 2017 through 2021. Appendix 1 is the complete ten year Pro Forma from which the information in Table 1 was excerpted.

Table 1

Anticipated Expenses FY 2017 – 2021

	FY 17	FY 18	FY 19	FY 20	FY 21
Expenses					
O&M					
Salary & Benefits	13,043,078	14,145,403	15,336,060	16,100,927	16,916,171
Variable Costs	2,919,294	3,196,086	3,783,908	4,142,707	4,540,825
Maintenance	1,793,951	1,847,770	1,903,203	1,960,299	2,019,108
Other Operating Expenses	8,158,777	8,403,541	8,655,647	8,915,316	9,182,776
Total O&M Expenses	25,915,101	27,592,799	29,678,817	31,119,249	32,658,880
Capital Expenditures					
Capital Outlay	14,698,100	13,579,520	35,774,344	37,574,757	26,251,158
Pay-Go Funded	7,278,796	5,917,724	5,035,952	7,120,186	7,015,414
Debt Funded	7,419,304	7,661,796	30,738,392	30,454,571	19,235,744
Debt Service	2,063,807	3,481,440	4,456,740	4,456,592	6,387,896

Operating costs have been developed based on very modest changes to staffing and departmental operations over time. The changes in Operating costs are based on the annual inflation factors shown in Table 2. These inflation factors are based on actual historical experience and long term industry trends.

Table 2

Operating Budget Inflation Factors

Expense Category	Annual Inflation Factor		
	2017	2018	2019-26
Salaries & Wages	3.0%	3.0%	3.0%
Employee Benefits	9.0%	9.0%	9.0%
Operating Supplies & Chemicals	9.2%	5.0%	5.0%
Energy	9.1%	5.0%	5.0%
All Other Categories	3.0%	3.0%	3.0%

As also shown in Table 1 and as has been presented in the Water Department's Capital Improvement Program, during this same five year period, the Departments anticipates spending $127.8 million on capital improvements that will largely be focused on system rehabilitation and replacement projects. Major expenses to implement the Water Supply Augmentation Strategy are anticipated to fall in the second five years of the financial planning horizon, and the details of the Ten Year Capital Improvement Plan can be found in Appendix B.

B. Financial Goals and Policies

Having and meeting financial goals and policies is central to good financial management. The draft LRFP incorporates existing Council approved Financial Goals and Policies and suggests some additional goals and policies that would assist the Department to establish and maintain a strong financial position as it works to maintain high quality service to customers and address its capital investment and reinvestment needs. Specific financial goals include:

- Effectively address the repair and rehabilitation of critical infrastructure and the need to augment supply;
- Achieve an equitable allocation of capital costs/charges between current and future system users;
- Establish and maintain financial reserve levels that provide flexibility to adapt to unforeseen circumstances or challenges;
- Maintain favorable access to capital markets;
- Continue to provide manageable rates in the near and medium term; and
- Minimize rate volatility.

Existing financial policies are mostly focused on the September 2014 establishment of additional requirements for establishing a reserve of 90 days of operating cash and an additional reserve of $3 million for emergencies. The Department has not had a policy for an explicit debt service coverage target apart from that included in the debt it refinanced in 2014, but that is one of the financial policies explored in additional detail in the Financial Plan.

IV. Draft Long Range Financial Plan

Using the PFM model, the Department explored how a range of financial assumptions would affect utility revenue requirements and ultimately water rates. Options were identified and explored in each one of the financial policy and goal areas identified in Section III.B above. In this section, analyses and recommendations related to each of the financial goals are described.

A. Effectively address the repair and rehabilitation of critical infrastructure and the need to augment supply:

The Capital Improvement program presented in Appendix B represents a major initiative by the water utility to address aging infrastructure, regulatory compliance issues, and supply augmentation needs. It is not feasible to undertake this kind of investment and reinvestment plan without increased costs to customers. The Department's job is to implement this initiative in the most cost-effective and timely manner that it reasonably can and to ensure that priority setting is efficient and designed to make the best use of financial and organizational resources.

B. Achieve an equitable allocation of capital costs/charges between current and future system users; Continue to provide manageable rates in the near and medium term; and Minimize rate volatility:

A water utility is typically made up of a number of elements with long service lives, many of which were developed at the same time and provide backbone infrastructure on which the remaining system depends. Replacing or substantially rehabilitating such infrastructure sets up a new life cycle for this critical infrastructure that will serve many future generations of customers as well as those here today. Debt financing of major infrastructure reinvestments is one way to create inter-generational equity between today's users and rate payers and those of tomorrow.

This Financial Plan is built on the assumption that debt financing will be one of the key strategies used to achieve not only inter-generational equity but also keep rates manageable in the near and medium term and minimize the volatility of water rates.

- **Capital Financing Policy**

The draft LRFP includes capital projects totaling $127.8 million in the first five years and $298.4 million over the 10 year planning horizon. The financing of capital projects is estimated to require $68.7 million from rate revenue and $229.7 million in long-term debt; $204 million in tax-exempt financing and $25 million from the I-Bank loan program.[1]

Using the estimated pay-as-you-go and debt financed figures from above will result in roughly a split of 25% pay-go funded and 75% debt financed. Long-term debt will allow the City to allocate certain costs over a 30 year time frame. The issuance of long-term debt helps to smooth future rate increases and ensure that not only current rate payers but also the future rate payers will share the costs of the improvements, which supports achieving

[1] Grants and below market loans will be aggressively pursued by the Department, but for the purposes of this plan, tax exempt municipal revenue bonds are assumed to be the debt mechanism that will be used.

intergenerational equity between current rate-payers and beneficiaries and future rate-payers and beneficiaries of anticipated system investments and reinvestments.

Debt financing will use tax-exempt revenue bond financing and loans from the California Infrastructure and Economic Development Bank (I-Bank) as well as use of Clean Water and Drinking Water State Revolving Loan programs and grants as available.

- **Debt Service Coverage**

During the first five years, the Department anticipates issuing debt totaling $95.5 million while maintaining a minimum debt service coverage ratio of 1.5 (ratio of 1.5 between annual revenues and required annual debt service costs). The annual average debt service is not expected to exceed 14% of annual rate revenue during the first five years, but would continue to rise to a maximum of about 21% of annual revenues at the end of the 10 year period.

- **Debt Financing Assumptions**

In evaluating future financing needs the LRFP makes assumptions on the initial and ongoing costs associated with issuing debt. Below, in Table 3, are the projected terms for debt issuance mechanisms. An application with the California Infrastructure and Economic Development Bank (I-Bank) for the maximum SRF loan authorization of $25 million is currently pending and I-Bank is expected to act on the request in late February. This loan is expected to reimburse eligible past project expenses which currently stand at $15.5 million and is assumed in the LRFP. For planning purposes, additional debt issuance is assumed to be tax-exempt bonds issued in six series. In addition to borrowing, the Department will work to acquire grant funding for capital investments if and as available. Grant funds may most likely be an option to defray some of the costs of the projects included in the Water Supply Augmentation Strategy.

Table 3
Debt Mechanism Estimated Rates & Terms

Debt Mechanism	Assumed Interest Rate	Term (Years)
Tax-Exempt Financing	5.00%	30
California Infrastructure & Economic Development Bank (I-Bank)	3.44%	30
State Revolving Fund Loan (SRF)	1.60%	30

The size and timing of debt issues to finance these capital projects are summarized in Table 4. The draft LRFP envisions three debt issue series from FY 2017 through FY 2021 for a total of $103.6 million. Another three debt issues series are shown from 2023 to 2025 for a total of $115.9 million. The total for all six series is $219.5 million.

Table 4

Size and Timing of Debt Issues Needed to Fund Capital Program

	Series 2017	Series 2020	Series 2021	Total 2017 - 2021	Series 2023	Series 2024	Series 2025	Total 2023 - 2025	Total 2022 - 2025
			Sources				Sources		
Par Amount	$ 45,440,312	$ 30,535,000	$ 27,645,000	*$ 103,620,312*	$ 39,870,000	$ 37,000,000	$ 39,010,000	*$ 115,880,000*	*$ 219,500,312*
			Uses				Uses		
Project Fund Deposit	$ 45,138,043	$ 30,302,023	$ 27,432,219	*$ 102,872,285*	$ 39,567,466	$ 36,718,212	$ 38,711,372	*$ 114,997,050*	*$ 217,869,335*
Costs of Issuance	$ 197,700	$ 152,675	$ 138,225	*$ 488,600*	$ 199,350	$ 185,000	$ 195,050	*$ 579,400*	*$ 1,068,000*
Underwriter Discount	$ 98,850	$ 76,338	$ 69,113	*$ 244,301*	$ 99,675	$ 92,500	$ 97,525	*$ 289,700*	*$ 534,001*
Additional Proceeds	$ 5,719	$ 3,964	$ 5,443	*$ 15,126*	$ 3,509	$ 42,898	$ 6,053	*$ 52,460*	*$ 67,586*
Total Uses	$ 45,440,312	$ 30,535,000	$ 27,645,000	*$ 103,620,312*	$ 39,870,000	$ 37,038,610	$ 39,010,000	*$ 115,918,610*	*$ 219,538,922*

C. Establish and maintain financial reserve levels that provide flexibility to adapt to unforeseen circumstances or challenges;

Reserve policies are particularly important to manage risks to financial condition. In addition, they help an organization establish and maintain a good bond rating thereby reducing the cost of borrowing. Historically, the water utility has maintained a Rate Stabilization Reserve Fund (713). Recently in 2014, City Council approved two additional reserve funds; a 90-Day Operating Cash Reserve Fund (716) and an Emergency Reserve Fund (717). Apart from the Rate Stabilization Fund, the remaining reserves have not been fully funded as the utility's financial condition did not enable it to address this important goal. Table 5 provides information on the status at 6-30-2015 and goals of each of the Department's reserve funds.

Table 5

Fund Balance Reserve Goals

Fund		Fund Balance 6-30-2015	Funding Goal
711	Water Operations & Maintenance	4,321,718	90 Days Operating Cash $6.4M
713	Water Rate Stabilization Reserve	2,447,938	2,300,000
716	Water 90-Day Operating Cash Reserve	-	90 Days Operating Cash $6.4M
717	Water Emergency Reserve	600,000	3,000,000

Establishing the 90-Day Operating Cash Reserve Fund was an important step, however for bond rating purposes a 180-day reserve is preferable. To that end, the financial plan envisions also keeping a 90-day reserve in the operating fund (711) in addition to the 90-Day Operating Cash Reserve Fund (716). Increasing these reserves above 180-days operating cash will be a goal if and when funding becomes available. Providing a reserve equal to 180-days of operating

expenses (between balances in Fund 711 and 716) is considered to be the minimum reserve to maintain a strong bond rating and access to capital markets.

The Rate Stabilization Reserve Fund has been maintained at the historic $2.3 million level and seeks to provide a cushion to cover one-time situations where expenses exceed rate revenue. At 6-30-2015, this fund had increased to $2.4 million including interest income.

Initial funding of $600,000 for the Emergency Reserve Fund was made possible by using one-time excessive use penalty revenue. The goal for the Emergency Reserve Fund is to maintain a $3 million funding level that would provide funds in the event of an extreme event or natural disaster.

- **Approach to Fully Funding Reserves**

In April of 2014, the Water Department recommended and the City Council approved a reimbursement resolution that would allow the Department to finance capital improvement work already in construction. The purpose of this request was to replenish some of the Department's funds that had been depleted by cash financing large capital projects, such as the replacement of the Bay Street Reservoir.

From the pending Infrastructure Bank (I-Bank) for a loan of $25 million, the Department expects to receive reimbursement of $15.5 million in past capital expenditures from the Department's fund balance. As a strategy for funding its reserves, the Department is recommending using part of these reimbursement funds to fully fund the 90-Day Operating Cash Reserve Fund (716) at a level of $6.4 million. It is also recommended to fully fund the Emergency Reserve Fund at $3 million using $2 million from the loan reimbursement and excess use penalty revenue of $600,000 from 2014 and an estimated $400,000 in 2015. Table 6 shows the funding progress and anticipated changes to reserve fund balances. The reserve funding status is summarized in Table 7 and shows all reserve goals are assumed to be met during FY 2016, based on promptly receiving expected reimbursements from the I-Bank loan. If reimbursement is delayed past June 30, 2016, reserves will be funded in FY 2017.

Table 6

Planned Changes to Reserve Fund Balances

Fund		Fund Balance 6-30-15	Estimated FY 2016 Surplus/(Deficit)	Estimated Excessive Use Penalty Revenue	Distribution of I-Bank Loan Reimbursement Revenue	Total	Fund Balance Used to Fund LRFP
	Unrestricted Reserves						
711	Water Operations & Maintenance	4,321,718	(644,928)	-	7,162,168	10,838,958	10,838,958
	Restricted Reserves						-
713	Water Rate Stabilization Reserve	2,447,938	-	-	-	2,447,938	-
716	Water 90-Day Operating Cash Reserve	-	-	-	6,400,000	6,400,000	-
717	Water Emergency Reserve	600,000	-	400,000	2,000,000	3,000,000	-
	Total	7,369,656	(644,928)	400,000	15,562,168	22,686,896	10,838,958

Table 7

Reserve Funding Status

Fund		Expected Funding Status by 6-30-2016	Funding Goal	Funding Goal Met	Funding Goal Not Met
711	Water Operations & Maintenance	90 Days Operating Cash $6.4M	90 Days Operating Cash $6.4M	✓	
713	Water Rate Stabilization Reserve	2,447,938	2,300,000	✓	
716	Water 90-Day Operating Cash Reserve	90 Days Operating Cash $6.4M	90 Days Operating Cash $6.4M	✓	
717	Water Emergency Reserve	3,000,000	3,000,000	✓	

D. Maintain favorable access to capital markets;

As indicated in response to item IV.B above, establishing a minimum debt service coverage ratio of 1.5 and funding and maintaining a minimum of 180 days of operating cash as a reserve are prudent financial management steps that are viewed favorably by credit rating agencies and capital funding markets. The debt service coverage ratio (DSCR) is a measure of the ability to generate annual revenues to cover annual debt payments and is typically a required bond covenant and reported to bond holders in the annual continuing disclosure report. The DSCR is calculated by dividing the net operating income by the total debt service. In other words, the annual net operating income should be at least 1.5 times the annual debt service payment.

The Water Enterprise has its own credit rating and was rated in the spring of 2014 and downgraded due to its depleted financial condition and the difficult forecast for water supply conditions. In its review of the enterprise in the spring of 2015, Standard and Poor's adjusted the Department's outlook from negative to stable but did not restore it to its former AA rating due again to its many financial and water supply challenges.

V. Annual Revenue Requirements for FY 2017 – FY 2021

As shown in Figure 1, a significant output of financial planning is the revenue requirements that are an input to the rate making process. Based on the recommendations and assumptions described in Section IV, the Department was able to calculate revenue requirements. The top row of figures in Table 8 summarizes the revenue requirements, operating and capital costs and debt service coverage in the first five years of the financial plan.

Table 8

Revenue Requirements, Operating & Capital Costs & Debt Service Coverage

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	TOTAL 2017-2021	CIP Funding Percentage
Revenue Requirements	29,925,313	36,675,057	39,589,690	43,051,202	46,441,826	195,683,088	
Expenses							
Operation & Maintenance (O&M)							
Salary & Benefits	13,043,078	14,145,403	15,336,060	16,100,927	16,916,171	75,541,639	
Variable Costs	2,919,294	3,196,086	3,783,908	4,142,707	4,540,825	18,582,820	
Maintenance	1,793,951	1,847,770	1,903,203	1,960,299	2,019,108	9,524,329	
Other Operating Expenses	8,158,777	8,403,541	8,655,647	8,915,316	9,182,776	43,316,057	
Total O&M Expenses	25,915,101	27,592,799	29,678,817	31,119,249	32,658,880	146,964,845	
Net Operating Revenues	4,893,669	9,812,842	10,007,051	11,931,953	13,782,946	50,428,462	
Capital Project Costs & Funding							
Capital Improvement Program Costs	14,698,100	13,579,520	35,774,344	37,574,757	26,251,158	127,877,879	
Pay-Go Funded	7,278,796	5,917,724	5,035,952	7,120,186	7,015,414	32,368,072	25%
Debt Funded	7,419,304	7,661,796	30,738,392	30,454,571	19,235,744	95,509,807	75%
Debt Service	2,063,807	3,481,440	4,456,740	4,456,592	6,387,896	20,846,475	
Debt Service as a % of Rate Revenue	6.9%	9.5%	11.3%	10.4%	13.8%	10.7%	
Net Income (Loss)	(4,448,934)	413,678	514,359	355,175	379,636	(2,786,085)	
Cash Balances							
Beginning Unrestricted Cash Balance	10,838,959	6,390,025	6,803,703	7,318,062	7,673,237	39,023,986	
Net Change to Cash Balances	(4,448,934)	413,678	514,359	355,175	379,636	(2,786,085)	
Ending Cash Balance	6,390,025	6,803,703	7,318,062	7,673,237	8,052,873	36,237,901	
Debt Coverage & Targets							
Debt Service Coverage (DSC) W/Out Reserves	2.37	2.82	2.25	2.68	2.16		
Debt Service Coverage (DSC) Target	1.50	1.50	1.50	1.50	1.50		

Revenue requirements have been set at a level needed to ensure that a both a minimum 1.50 debt service coverage ratio and a minimum of 180 days of operating cash are maintained.

With the information generated by the Cost of Service Analysis, the outcome of the Rate Structure Redesign, and the Department's estimation of the amount of water sales in each

customer class, Raftelis is working on the proposed revised rates that will address the City's priority pricing objectives as identified by the Council and the Water Commission during the winter of 2015:

- Revenue sufficiency
- Promotes efficiency
- Perceived to be fair by the public
- Affordable for essential uses
- Revenue stability
- Understandable by customers
- Promotes conservation
- Rate stability

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WATER COMMISSION
INFORMATION REPORT

DATE: 1/22/2016

AGENDA OF:	February 1, 2016
TO:	Water Commission
FROM:	Rosemary Menard, Water Director
SUBJECT:	Cost of Service Rate Analysis and Rate Structure Design

RECOMMENDATION: Agree upon recommendations to the City Council on the Cost of Service Analysis and the design of rate structures for the various customer classes.

BACKGROUND: At its January 4, 2016 meeting, the Water Commission received a comprehensive presentation from Sanjay Gaur of Raftelis Financial Consultants providing details of the Cost of Service Analysis, including an analysis of the cost of service for inside City customers as compared to outside City customers, and options for the design of water utility rate structures. In this agenda item, the Commission will be asked to develop and agree upon recommendations to the City Council on these three topics.

In developing its recommendations to the City Council, the Water Commission may want to consider whether or how well the work products, analyses, presentations and staff and consultant conclusions, suggestions, and recommendations meet the following policy objectives:

- Methodologies used in the analyses are transparency and legally defensible;
- Results are equitable and likely to be perceived to be fair by customers; and
- Results effectively encourage water conservation and efficient use.

DISCUSSION: The Cost of Service Analysis, including the inside/outside cost analysis, and the analysis and discussion of various rate structure options was designed to create a foundation upon which to build the Water Department's financial plan and strategy as well as its specific proposal for rate increases. As foundational elements, it is important that these analyses receive formal review and action by the Santa Cruz City Council because they play a key role in shaping the products that follow.

Recognizing that Water Commissioners cannot be experts in some of the analytical details of these kinds of work products, staff considered how best to support the recommendation development process for Water Commission consideration. Staff recommends using relevant objectives of the Pricing Objective exercise resulting from City Council and Water Commission

input last winter as a framework for considering and developing recommendations to the Council on the Cost of Service Analysis, the cost analysis of inside versus outside customers, and the designs of revised rate structures for various classes of customers.

Table 1 below shows the results of the March 2015 Pricing Objective exercise (see also page 23 of the PowerPoint presentation from the January 4th meeting).

Table 1
Results of City Council and Water Commission Pricing Objective Exercise
Most Important / Critical = 1; Very Important = 2; Important = 3; Least Important = 4

Importance Rankings	Pricing Objectives	Average
Most Important	Revenue Sufficiency	1.1
Very Important	Promotes Efficiency	1.6
	Revenue Stability	1.7
	Perceived to be Fair to the Public	1.8
	Affordability for Essential Use	1.8
	Customer Understanding	1.9
	Promotes Conservation	2.0
	Rate Stability	2.0
Important	Tool for Drought Management Action Plan	2.3
	Equitable in Allocating CIP Cost	2.4
	Potential Funding Mechanism for Alt. Water Supply & Conservation Programs	2.4
	Scientific Method	2.4
	Align Supply & Demand	2.6
	Mitigate Customer Impact	2.7
Least Important	Economic Development	2.9
	Easy to Administer	2.9
	Rewards Past Conservation Effort	3.1
	Easy to Implement	3.1
	Based on Individual Needs	3.2

Not all of the priority pricing objectives in the table above are relevant to the work products that the Water Commission has seen to date. For example, based on the work presented to date it cannot be determined yet whether the proposed cost allocation or rate structures will be likely to

result in revenue sufficiency, although achieving revenue sufficiency is certainly one of the design criteria for all the financial planning work currently underway. The revenue sufficiency objective will be relevant to specific rate proposals and information that will be presented to the Water Commission at the March meeting.

However, it is feasible to make judgements about whether the work products reviewed to date achieve the following three important policy objectives:

- Methodologies used in the analyses are transparency and legally defensible;
- Results are equitable and likely to be perceived to be fair by customers; and
- Results effectively encourage water conservation and efficient use.

Staff recommends that the Water Commission discuss the analyses and work products presented to date and, along with any other recommendations it would care to forward to the City Council, give the Council its recommendations on whether or how well the Cost of Service Analysis, the cost analysis of inside versus outside customers, and the designs of revised rate structures for various classes of customers achieve these policy objectives.

RECOMMENDED MOTION: Move to recommend to the City Council that the Cost of Service Analysis, the cost analysis of inside versus outside customers, and the designs of revised rate structures for various classes of customers effectively achieve the following policy objectives:

- Methodologies used in the analyses are transparency and legally defensible;
- Results are equitable and likely to be perceived to be fair by customers; and
- Results effectively encourage water conservation and efficient use;

And that these products should be used as the foundation upon which to build customer water rates for both inside City and outside City customers.