Water Commission Agenda
Regular Meeting
7:00 p.m. – Monday April 7, 2014
Council Chambers
809 Center Street, Santa Cruz

Agenda

Call to Order

Roll Call

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.

Approval of Minutes ☆ (Pages 5-10)

Recommendation: Motion to approve the March 3, 2014 Water Commission Minutes.

Consent Agenda (Pages 11-30)

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.

1. Draft Capital Improvement Program Budget ☆ (accept info) (Pages 11-26)
2. Communications Update☆ (accept info) (Pages 27-28)
3. City Council Items Affecting Water ☆ (accept info) (Pages 29)

Items Removed from the Consent Agenda

General Business (Pages 31-66)

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. Draft Final Water Supply Outlook ☆ (Pages 31-44)

   Recommendation: That the Water Commission recommend that City Council uphold its February 25, 2014 decision to declare a Stage 3 Water Shortage Emergency based on the attached draft projection of water supply availability for 2014, with the caveat that if at any time during the dry season reservoir storage deviates significantly from the current projection of 1.3 billion gallons at the end of October 2014 due to changes in either the availability of supply or level of demand then it should reconsider elevating the water supply emergency to Stage 4..

2. Long-Term Conservation Master Plan Workshop II ☆ (Pages 45-60)

   Recommendation: That the Water Commission: 1) receive an update on the Water Conservation Master Plan, 2) provide input on additional information needed to help select a preferred water conservation program at a future meeting, and 3) provide input on the process for completing the plan.

3. WSAC Update ☆ (Pages 61-64)

   Recommendation: Receive Oral Report.

4. Agenda Strategy ☆ (Pages 65-66)

   Recommendation: That the Water Commission receive and take action to adopt or modify a strategy for items to be included on the Water Commission agenda over the next several months.

Subcommittee/Advisory Body Oral Reports No items.

Information Item (Page 67-76) No action shall be taken on this item

1. Budget for Implementation of Stage 3Water Rationing ☆ (Pages 67-72)

2. Reimbursement for Capital Expenditures Prior to Debt Issuance ☆ (Pages 73-78)

Documents for Future Meetings No action shall be taken on this item.

The following document is being included in this agenda packet in order to provide ample review time. It will be an item of business and will include a staff report at a future meeting.

Items Initiated by Members for Future Agendas

Adjournment The next meeting of the Water Commission is scheduled for May 5, 2014 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.

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Water Commission
DRAFT
7:00 p.m. – Monday, March 3, 2014
Council Chambers
809 Center Street, Santa Cruz

Water Department

Minutes of a Water Commission Meeting

Call to Order – Chair Baskin called the meeting to order at 7:04 p.m. in the City Council Chambers.

Roll Call

Present: D. Baskin, G. Mead, A. Schiffrin, D. Schwarm, D. Stearns, W. Wadlow, and L. Wilshusen.
Absent: None.
Staff: R. Menard, Water Director; T. Goddard, Water Conservation Manager; H. Luckenbach; Deputy Water Director/Engineering Manager; N. Dennis Principal Management Analyst; G. Rudometkin, Administrative Assistant III.
Others: Approximately 17 members of the public.

Presentation – There were no presentations.

Statements of Disqualification – There were no statements of disqualification.

Oral Communications – Oral communications were made by Dan Spoutsel, S. McGilvray, and R. McKillan, Oral and written communications were made by G. Pepping.

Announcements – There were no announcements.

Approval of Minutes
Commissioners A. Schiffrin and D. Baskin made corrections to the minutes.

Commissioner D. Stearns moved approval of February 3, 2013 Water Commission minutes. Commissioner L. Wilshusen seconded.
VOICE VOTE:MOTION CARRIED
AYES: D. Baskin, G. Mead, A. Schiffrin, D. Schwarm, D. Stearns, W. Wadlow, and L. Wilshusen.
NOES: None.
ABSTAINED: None.

Consent Agenda

1. City Council Items Affecting Water
2. Communications Plan Update
3. WSAC Update
4. Correspondence from N. Sundermeyer date 2/11/2014
5. Correspondence from S. Holt date 2/25/2014

Commissioner G. Mead pulled Item 2 - Communications Plan Update and Item 5 – Correspondence from S. Holt dated 2/25/2014. Commissioner A. Schiffrin pulled Item 3 – WSAC Update and Commissioner D. Stearns pulled Item 4 - Correspondence from N. Sundermeyer dated 2/11/2014.

Commissioner A. Schiffrin moved approval of the item. Commissioner L. Wilshusen seconded.
VOICE VOTE: MOTION CARRIED
AYES: D. Baskin, G. Mead, A. Schiffrin, D. Schwarm, D. Stearns, W. Wadlow, and L. Wilshusen.
NOES: None.
ABSTAINED: None.

Items Removed from the Consent Agenda

Item 2 - Communications Plan Update

Commissioners G. Mead, D. Baskin, and D. Stearns made recommendations to reach out to additional media outlets.

Commissioner A. Schiffrin moved approval of the item. Commissioner L. Wilshusen seconded.
VOICE VOTE: MOTION CARRIED
AYES: D. Baskin, G. Mead, A. Schiffrin, D. Schwarm, D. Stearns, W. Wadlow, and L. Wilshusen.
NOES: None.
ABSTAINED: None.

Item 3 – WSAC Update

Water Director R. Menard responded to Commission questions.

Commissioner A. Schiffrin moved approval of the item. Commissioner G. Mead seconded.
VOICE VOTE: MOTION CARRIED
AYES: D. Baskin, G. Mead, A. Schiffrin, D. Schwarm, D. Stearns, W. Wadlow, and L. Wilshusen.

NOES: None.

ABSTAINED: None.

Item 4 - Correspondence from N. Sundermeyer date 2/11/2014

Water Director R. Menard responded to Commission questions.

Commissioner A. Schiffrin moved approval of the item. Commissioner W. Wadlow seconded.
VOICE VOTE: MOTION CARRIED
AYES: D. Baskin, G. Mead, A. Schiffrin, D. Schwarm, D. Stearns, W. Wadlow, and L. Wilshusen.
NOES: None.

ABSTAINED: None.

Item 5 - Correspondence from S. Holt date 2/25/2014

Commissioner L. Wilshusen moved approval of the item. Commissioner A. Schiffrin seconded.
VOICE VOTE: MOTION CARRIED
AYES: D. Baskin, G. Mead, A. Schiffrin, D. Schwarm, D. Stearns, W. Wadlow, and L. Wilshusen.
NOES: None.

ABSTAINED: None.

General Business

1. Long Term Conservation Master Plan Workshop I – Development of Program Goals and Decision Criteria

Water Director R. Menard gave a brief overview. T. Goddard introduced the presentation given by Bill and Lisa Maddaus, of Maddaus Water Management, Inc.

Summary of Commission Comments/Questions:

- Question asked if there was a recommended program from the four options described at the February 3rd meeting.
- Question asked whether or not the information presented was based on past information and city experience.
- Inquiry was made if this program factors in the Water Department ramp up time to execute various projects.
- Definition of GPCD (gallons per person per day) requested.
- Question asked concerning the concept of demand hardening.

- Question asked concerning if there are different measures that are reserved for drought than what is in a typical long term conservation plan.
- Question asked concerning the most aggressive conservation program and what the City's overall demand would be in 20-30 years with it implemented.
- Question asked that during a drought our annual water supply may be 2.5 billion gallons as opposed to a non-drought period of 3.5 billion gallons, with a conservation program in place what would the per capita demand have to be to accrue enough savings so that a supplemental supply during a drought was not needed.
- Question asked regarding the model being based on annual factors however, would it be possible to engineer the model to address seasonal impacts. For example, could we appropriately value incentives that could impact demand during the higher peak summer months when there is a larger impact on the reservoir.

Public Questions/Comments:

Oral communications made by R. Longinotti, R. Pommerantz, and A. Savage.

Summary of Commissions Brainstorming Session Question/Comments:

- Appeal was made to maximize the following: cost effectiveness of new conservation measures, water pricing strategies, use of peer pressure and consumer choice strategies, partnerships with large water users, other water agencies, local government, educational institutions, use of contemporary public information messaging, adoption of new and proven technologies, use of renewable energy resources, and minimize water loss at all levels and by all user groups.
- Comment was made that messaging consumer use through gallons per person, per day is more easily accessible to people.
- Comment was made to offer people a concept of the amount of water wasted during common practices.
- Comment was made that the maximum practical level of water conservation should be the foundation of a diversified portfolio of water supplies and water efficiency measures.
- Comment was made that conservation efforts should be implementable, which speaks to the practicalities, affordable in terms of cost effective in comparison to other measures and from a community perspective as well, and should be fair and sustainable over time.
- Comment was made that conservation efforts should be customer friendly in terms of understandable and implementable from the individual customer's perspective.
- Comment was made discussing a triple-bottom line model that encompasses a benefit cost analysis against true alternative costs, environmental stewardship as in what we are doing with the water we are not taking and using effectively, and quality of life; how our community benefits from making those changes on how we consume water.

- Comment was made that in terms of conservation and demand projections water rates are the most effective way to achieve behavioral change.
- Comment was made that it would be interesting and informative to see what suite of long term conservation measures would be needed to eliminate the need for an additional water source, including supplying enough water to meet demand during drought conditions.
- Comment was made that a conservation plan that would eliminate the need for an additional water source, including during a drought should be explored.
- Requested the true cost of desalinated water or provide a range of options of how to evaluate so that cost comparisons can be made.

Public Questions/Comments:

Oral communications made by R. Longinotti.

2. Report on Water Transfer/Water Exchange Project by John Ricker, County of Santa Cruz Water Resources Division Director

Deputy Director/Engineering Manager H. Luckenbach introduced the presentation given by J. Ricker.

Summary of Commission Comments/Questions:

- Question was asked if there are water rights issues if Soquel were to send water back to the City of Santa Cruz.
- Comment was made that with the existing intertie to Soquel the City of Santa Cruz could transfer up to 122 million gallons a year to Soquel and what if an agreement was to say that when the City of Santa Cruz needed the water Soquel needed to transfer 60 million gallons back, making Soquel a net gainer in any event.
- Comment was made that the Water Transfer/Water Exchange Project will be helpful to Scotts Valley and Soquel but it is not a solution to Santa Cruz's water issue.
- Question was asked if grants or other funding sources for this project are currently being pursued.
- Question was asked if the City of Santa Cruz, in the Live Oak district where the ground water wells are and the Purisima formation are located currently mix surface water and treated ground water within the same piping structure.
- Comment was made that if in fact the Scotts Valley recycled water pipe runs right by Pasatiempo and wouldn't it be relatively easy to tap into that pipeline.
- Question was asked if the Water Transfer/Water Exchange Project is an indicator if we should be abandoning our pursuit of a desalination plant.
- Comment made that the idea that this program is an exchange more realistically applies to Scotts Valley. The idea that this is an exchange to benefit Santa Cruz City Water District does seem unlikely.
- Question asked pertaining to how much water could be sent back to Santa Cruz from Scotts Valley not annually in terms of a daily rate.

Public Questions/Comments:

Oral communications made by R. Longinotti.

Subcommittee/Advisory Body Oral Reports No items.

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

1. Monthly Status of Water Supply

Information Item (Pages 114-135) No action shall be taken on this item.

Media Articles

1. News Article – Santa Cruz Sentinel 2/4/2014 ☆ (Pages 45-47)
2. News Article – Santa Cruz Sentinel 2/10/2014 ☆ (Pages 48-50)
3. News Article – Good Times 2/12/2014 ☆ (Pages 51-53)
4. News Article – Santa Cruz Sentinel 2/20/2014 ☆ (Pages 54-55)
5. News Article – Santa Cruz Sentinel 2/22/2014 ☆ (Page 56)
6. News Article – Santa Cruz Sentinel 2/23/2014 ☆ (Pages 57-58)

Documents for Future Meetings No action shall be taken on this item.

1. None

Items Initiated by Members for Future Agendas

Adjournment Meeting adjourned at 11:02pm. The next meeting of the Water Commission is scheduled for April, 7 2014 at 7:00 p.m. in Council Chambers.

Respectfully submitted,

Gloria Rudometkin

Digitally signed by Gloria Rudometkin
DN: cn=Gloria Rudometkin, o=City of Santa Cruz, ou=Water, email=grudometkin@cityofsantacruz.com, c=US
Date: 2014.02.10 09:12:05 -08'00'

Staff

W A T E R D E P A R T M E N T
M E M O R A N D U M

DATE: April 7, 2014

TO: Water Commission

FROM: Lydia Rossiter, Management Analyst

SUBJECT: Capital Improvement Program for FY 2015-2017 Draft Budget

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RECOMMENDATION: Review and recommend that City Council approve the Fiscal Year 2015-2017 Capital Improvement Program budget.

Background: At its January 6, 2014 meeting, the Water Commission heard presentations by the Engineering section staff on the Water Department's current major projects.

Attachment A presents the proposed Capital Improvement Program (CIP) for Fiscal Years 2015-2017 for the Water Commission's review and recommendation for approval to Council. According to the budgetary guidelines, only the first year (FY 2015) request will be appropriated, the latter two years are provided to give a more holistic view of the recurring and multi-year projects. As in prior years, this document covers only capital projects as defined by the generally accepted accounting standards. Maintenance projects are categorized as operating expenditures and included in the FY 2015 operating budget.

Attachment B provides financial detail in a graphic format for the CIP for the current fiscal year (amended budget) as well as the next three fiscal years to better illustrate the flow of projects from year to year.

Discussion: The total FY 2014 amended CIP budget is $19.2 million. An estimated $11.9 million will be spent by the end of FY 2014, with an additional $4.7 million committed in purchase orders and $2.7 million in available project balance to be carried forward. The majority of this fund balance is in the Water Supply Project, budgeted last year for the completion of the Environmental Impact Report and all of its related components as appropriate.

New appropriations requested for FY 2015 are $10.3 million. Major projects in FY 2015 include the following three; together, these three projects account for $8.6 million of the $9.7 million FY 2015 appropriation.

- Water Treatment Plant Filter Rehabilitation and Upgrades in the amount of $3.5 million. Construction of this project will be completed in phases to accommodate the City's continued use and operation of the existing facility. The initial construction phase, and

physical construction on the first two set of filters, is expected to start in October 2014 with the final phase of the project tentatively scheduled to be completed by October 2015.

- Bay Street Reservoir Replacement (Phases 3 and 4) in the amount of $4.1 million. These two phases of the project include completion of the second 6-million gallon water storage tank and additional site improvements. These phases are anticipated to be completed in spring 2015.
- Main Replacement project in the amount of $1 million. The annual main replacement project is expected to start in spring 2015. The precise location of this project has not been determined from the overall main replacement program.

Capital expenditure needs in FY 2016 are projected to be $20.9 million and $7.4 million in FY 2017 with projects shown on the attachments.

When combined with proposed operating budget, projected capital expenditures will require that the Department explore some combination of issuing debt and raising water rates in FY 2015. The Director will discuss this further in her oral report.

Attachment A – FY 2014-2017 Draft CIP
Attachment B – FY 2014-2017 CIP Forecast

Water Department

Capital Improvement Projects

Bay Street Reservoir

Water

Water & Water System Development Enterprise Fund

New Capital Projects

Felton Diversion Replacement and Pump Station Rehabilitation

Project Description:

Evaluation of pumps and construction of new intake or new dam.

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c701602								**Account # 711-70-91-7153-57302**
Project Cost Estimate:	-	-	-	-	-	300,000	-	300,000
Net Project Cost Estimates:	-	-	-	-	-	300,000	-	300,000

Gravity Trunk Main Valve Replacement

Project Description:

Replace failed isolation valves on and surrounding the 36 inch trunk transmission main leaving the Graham Hill Water Treatment Plant and make improvements needed to inspect the condition of the pipeline.

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c701504								**Account # 711-70-91-7151-57302**
Project Cost Estimate:	-	-	-	-	150,000	-	-	150,000
Net Project Cost Estimates:	-	-	-	-	150,000	-	-	150,000

Newell Creek Supply Main Rehabilitation

Project Description:

Conduct a condition assessment followed by full or partial replacement of the pipeline between the base of Loch Lomond Reservoir and the Graham Hill Water Treatment Plant.

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c701701								**Account # 711-70-91-7153-57302**
Project Cost Estimate:	-	-	-	-	-	-	700,000	700,000
Net Project Cost Estimates:	-	-	-	-	-	-	700,000	700,000

Water

Water & Water System Development Enterprise Fund

New Capital Projects

Recoat University Reservoir No. 4

Project Description:

Perform engineering analysis and condition assessment of the aging University 4 tank. Establish scope of work for recoating/rehabilitation project. Acquire construction easements from UCSC and perform environmental analysis to install temporary tank for use during construction. Create plans and specifications for recoating/rehabilitation project.

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c701505								**Account # 711-70-91-7153-57302**
Project Cost Estimate:	-	-	-	-	95,000	100,000	75,000	270,000
Net Project Cost Estimates:	-	-	-	-	95,000	100,000	75,000	270,000

Recoat University Reservoir No. 5

Project Description:

Perform engineering analysis and condition assessment of the aging University 5 tank. Establish scope of work for recoating/rehabilitation project. Create plans and specifications for recoating/rehabilitation project. Install temporary tank and variable speed pumps for use during construction. Construct recoating/rehabilitation project.

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c701506								**Account # 711-70-91-7153-57302**
Project Cost Estimate:	-	-	-	-	110,000	75,000	1,750,000	1,935,000
Net Project Cost Estimates:	-	-	-	-	110,000	75,000	1,750,000	1,935,000

Water Main Replacements - Distribution

Project Description:

Distribution
Description: Recurring program of deteriorated mains, as identified and prioritized by the Water Department's Distribution Division, which performs the work. Projects are typically based on leak history.

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c701507								**Account # 711-70-97-7151-57302**
Project Cost Estimate:	-	-	-	-	300,000	325,000	325,000	950,000
Net Project Cost Estimates:	-	-	-	-	300,000	325,000	325,000	950,000

Water

Water & Water System Development Enterprise Fund

New Capital Projects

Water Resources Building

Project Description:

The Watershed Resources division is currently housed in temporary trailers. This project will design and construction a new facility.

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c701702								**Account # 711-70-91-7153-57302**
Project Cost Estimate:	-	-	-	-	-	-	1,000,000	1,000,000
Net Project Cost Estimates:	-	-	-	-	-	-	1,000,000	1,000,000

WTP Filter Water Tank

Project Description:

As part of an overall plan to ensure compliance with changing water quality regulations, improvements are needed at the Graham Hill Water Treatment Plant. This project will make piping and tank modifications.

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c701501								**Account # 711-70-91-7152-57302**
Project Cost Estimate:	-	-	-	-	200,000	2,000,000	-	2,200,000
Net Project Cost Estimates:	-	-	-	-	200,000	2,000,000	-	2,200,000

WTP Flocculator/Sedimentation Improvements

Project Description:

As part of an overall plan to ensure compliance with changing water quality regulations, improvements are needed at the Graham Hill Water Treatment Plant. This project will replace aging paddle wheel flocculators and improve sedimentation processes.

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c701502								**Account # 711-70-91-7152-57302**
Project Cost Estimate:	-	-	-	-	-	6,000,000	-	6,000,000
Net Project Cost Estimates:	-	-	-	-	-	6,000,000	-	6,000,000

Water

Water & Water System Development Enterprise Fund

New Capital Projects

WTP UV System - Pasatiempo

Project Description:

As part of an overall plan to ensure compliance with changing water quality regulations, improvements are needed at the Graham Hill Water Treatment Plant. This project will upgrade the Pasatiempo Pump system with ultra violet disinfection.

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c701503								**Account # 711-70-91-7152-57302**
Project Cost Estimate:	-	-	-	-	40,000	400,000	-	440,000
Net Project Cost Estimates:	-	-	-	-	40,000	400,000	-	440,000

New Capital Projects for Water & Water System Development Enterprise Fund Totals

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimated	FY 2016 Estimate	FY 2017 Estimated	Total 2015 - 2017
Total Project Cost Estimate:	-	-	-	-	895,000	9,200,000	3,850,000	13,945,000
Total Project Funding Estimate:	-	-	-	-	-	-	-	-
Total Net Project Cost Estimate:	-	-	-	-	895,000	9,200,000	3,850,000	13,945,000

Water

Water & Water System Development Enterprise Fund

Existing Capital Projects

Bay Street Reservoir Reconstruction

Project Description:

The Bay Street Reservoir has reached the end of its useful life and will be replaced with two 6 MG tanks. Construction of Tank 1 was completed in FY 2014. Demolition of the temporary tanks and Tank 2 construction commenced in FY 2014. A portion of the project is funded by System Development Charges (20% SDC-Fund 715).

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c700313								**Account # 711-70-91-7153-57302**
Project Cost Estimate:	11,697,295	6,103,381	2,453,871	6,103,381	3,280,000	-	-	3,280,000
Net Project Cost Estimates:	11,697,295	6,103,381	2,453,871	6,103,381	3,280,000	-	-	3,280,000
Project # c700027								**Account # 715-70-91-7153-57302**
Project Cost Estimate:	3,038,888	1,434,608	603,967	1,434,608	820,000	-	-	820,000
Net Project Cost Estimates:	3,038,888	1,434,608	603,967	1,434,608	820,000	-	-	820,000

Beltz Well #4 Replacement with #12

Project Description:

Replace Beltz Well #4 with a new inland well to redistribute pumping away from the coast. Land was acquired in 2012, drilling of the well took place in FY 2013, engineering and construction of the wellhead in FY 2014. Installation of the treatment system began in FY 2014 and will be complete in early FY 2015.

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c701003								**Account # 711-70-91-7153-57302**
Project Cost Estimate:	1,674,270	3,138,691	418,346	3,138,691	-	-	-	-
Net Project Cost Estimates:	1,674,270	3,138,691	418,346	3,138,691	-	-	-	-

Loch Lomond Facilities Improvements

Project Description:

Conduct facilities assessment and improvement program at Loch Lomond. Use study was completed in FY 2013. Further analysis is scheduled for FY 2015, followed by a master pklan and construction.

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c701301								**Account # 711-70-91-7153-57302**
Project Cost Estimate:	-	85,000	79,951	85,000	100,000	-	-	100,000
Net Project Cost Estimates:	-	85,000	79,951	85,000	100,000	-	-	100,000

Water

Water & Water System Development Enterprise Fund

Existing Capital Projects

North Coast System Rehabilitation

Project Description:

Springs and streams along the coast north of the City limits supply approximately 25% of the City's raw water. Some of the facilities related to these water supplies were constructed as early as 1889 and are in need of rehabilitation. The program consists of multiple projects over the next 15 to 20 years. Engineering, environmental review, and permitting for the coast segment (Phase 3) began in FY 2013 and continues through FY 2015. Construction scheduled to begin in FY 2016.

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c709835								**Account # 711-70-91-7153-57302**
Project Cost Estimate:	4,599,335	804,164	293,163	804,164	645,000	8,235,000	1,000,000	9,880,000
Net Project Cost Estimates:	4,599,335	804,164	293,163	804,164	645,000	8,235,000	1,000,000	9,880,000

San Lorenzo Tait Intake Modification-Tait Wells

Project Description:

Construct intake modifications and new wells at the San Lorenzo intake site. Rehabilitate dam and investigate sanding problem/infiltration gallery at San Lorenzo River Intake at Crossing Street.

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c709872								**Account # 711-70-91-7153-57302**
Project Cost Estimate:	-	-	-	-	-	300,000	-	300,000
Net Project Cost Estimates:	-	-	-	-	-	300,000	-	300,000

Water Main Replacements -City Engineering

Project Description:

Recurring program of deteriorated or undersized mains, as identified and prioritized by the Water Department's Engineering Division. Priorities are based on the need to maintain water system reliability, deliver adequate fire flows, improve circulation and water quality, and reduce maintenance costs.

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c700002								**Account # 711-70-91-7151-57302**
Project Cost Estimate:	1,569,000	1,330,299	831,519	1,330,299	500,000	1,000,000	1,000,000	2,500,000
Net Project Cost Estimates:	1,569,000	1,330,299	831,519	1,330,299	500,000	1,000,000	1,000,000	2,500,000

Water

Water & Water System Development Enterprise Fund

Existing Capital Projects

Water Main Replacements -Customer Initiated

Project Description:

Recurring program similar to the City-Initiated Main Replacement Project; however, these projects are initiated on an as-needed basis to accommodate customer-requested service connections to undersized or inadequate mains. Funds, to the extent of the appropriation, are disbursed to customers on a first-come, first-served basis. This project is funded by System Development Charges (100% SDC – Fund 715).

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c700004								**Account # 715-70-91-7151-57302**
Project Cost Estimate:	301,259	50,000	-	50,000	50,000	50,000	50,000	150,000
Net Project Cost Estimates:	301,259	50,000	-	50,000	50,000	50,000	50,000	150,000

Water Main Replacements -Outside Agency

Project Description:

Water main, service line, valve, or water meter relocation necessitated by County or other Agency road improvement and/or storm drain improvement projects. Available project balance will be used for any projects in FY 2015

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c700003								**Account # 711-70-91-7151-57302**
Project Cost Estimate:	745,912	385,881	41,745	385,881	-	200,000	200,000	400,000
Net Project Cost Estimates:	745,912	385,881	41,745	385,881	-	200,000	200,000	400,000

Water

Water & Water System Development Enterprise Fund

Existing Capital Projects

Water Supply Project

Project Description:

CEQA process continued in FY 2014. A portion of the project is funded by System Developmnet Charges (30% SDC-Fund 715). Remaining project balance will be transferred as needed to the Water Supply Reliability project (c701402, c701403)

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c700305								**Account # 711-70-91-7153-57302**
Project Cost Estimate:	9,669,518	1,479,165	780,861	1,479,165	-	-	-	-
Project Funding Estimates:								
Other agency contributions	4,626,349	1,169,821	229,832	739,583	-	-	-	-
Net Project Cost Estimates:	5,043,169	309,344	551,029	739,582	-	-	-	-
Project # c700016								**Account # 715-70-91-7153-57302**
Project Cost Estimate:	3,472,512	1,080,574	292,219	1,080,574	-	-	-	-
Project Funding Estimates:								
Other agency contributions	1,982,720	650,912	98,499	540,287	-	-	-	-
Net Project Cost Estimates:	1,489,792	429,662	193,720	540,287	-	-	-	-

Water Supply Reliability

Project Description:

Support the Water Supply Advisory Committee to explore the City of Santa Cruz's water situation and potential supply options. Will include exploration of elements that impact supply such as the Habitat Conservation Plan process, elements affecting demand such as the conservation master plan, and potential water supply alternatives such as water exchange and beneficial uses of recycled water, and funding of Water Supply Advisory Committee facilitation. Potential for funding contributions from other agencies for exploration of regional solutions and/or grant funding. Remaining project balance from the Water Supply Project (c700305, c700016) will be transferred as needed to these projects.

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c701402								**Account # 711-70-91-7153-57302**
Project Cost Estimate:	-	490,000	-	490,000	-	-	-	-
Net Project Cost Estimates:	-	490,000	-	490,000	-	-	-	-
Project # c701403								**Account # 715-70-91-7153-57302**
Project Cost Estimate:	-	210,000	-	210,000	-	-	-	-
Net Project Cost Estimates:	-	210,000	-	210,000	-	-	-	-

Water

Water & Water System Development Enterprise Fund

Existing Capital Projects

Water Transmission System Improvements

Project Description:

Recurring program to replace sections of the transmission grid to extend its useful life and improve performance. Portion of the project funded by System Development Charges (20% SDC – Fund 715).

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c709833								**Account # 711-70-91-7151-57302**
Project Cost Estimate:	1,771,927	400,000	-	400,000	400,000	800,000	800,000	2,000,000
Net Project Cost Estimates:	1,771,927	400,000	-	400,000	400,000	800,000	800,000	2,000,000
Project # c700017								**Account # 715-70-91-7151-57302**
Project Cost Estimate:	393,531	100,000	-	100,000	100,000	200,000	200,000	500,000
Net Project Cost Estimates:	393,531	100,000	-	100,000	100,000	200,000	200,000	500,000

Water Treatment Upgrades

Project Description:

Upgrades to the Graham Hill Water Treatment Plant are necessary to enhance water quality, meet new and planned regulatory requirements, and increase overall system reliability. Evaluation of water tanks completed in FY 2014.

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c700025								**Account # 711-70-91-7152-57302**
Project Cost Estimate:	313,986	124,881	-	124,881	-	-	-	-
Net Project Cost Estimates:	313,986	124,881	-	124,881	-	-	-	-

WTP Basin Cover Building

Project Description:

As part of an overall plan to ensure compliance with changing water quality regulations, improvements are needed at the Graham Hill Water Treatment Plant. This project will provide covering of the sedimentation basins to reduce debris and sunlight.

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c701601								**Account # 711-70-91-7152-57302**
Project Cost Estimate:	-	-	-	-	-	-	300,000	300,000
Net Project Cost Estimates:	-	-	-	-	-	-	300,000	300,000

Water

Water & Water System Development Enterprise Fund

Existing Capital Projects

WTP Filter Rehabilitation and Upgrades

Project Description:

As part of an overall plan to ensure compliance with changing water quality regulations, improvements are needed at the Graham Hill Water Treatment Plant. This project will rehabilitate and improve the filters.

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c701303								**Account # 711-70-91-7152-57302**
Project Cost Estimate:	167,809	1,647,191	542,567	1,647,191	3,538,000	-	-	3,538,000
Net Project Cost Estimates:	167,809	1,647,191	542,567	1,647,191	3,538,000	-	-	3,538,000

WTP Hypochlorite Generation

Project Description:

As part of an overall plan to ensure compliance with changing water quality regulations, improvements are needed at the Graham Hill Water Treatment Plant. This project will replace the existing chlorine gas system with a new hypochlorite generation system.

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Project # c701401								**Account # 711-70-91-7152-57302**
Project Cost Estimate:	-	75,000	-	75,000	-	900,000	-	900,000
Net Project Cost Estimates:	-	75,000	-	75,000	-	900,000	-	900,000

Existing Capital Projects for Water & Water System Development Enterprise Fund Totals

		Fiscal Year 2014						
	Prior Year Totals	Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimated	FY 2016 Estimate	FY 2017 Estimated	Total 2015 - 2017
Total Project Cost Estimate:	39,532,833	18,938,835	6,338,209	18,938,835	9,433,000	11,685,000	3,550,000	24,668,000
Total Project Funding Estimate:	6,609,069	1,820,733	328,331	1,279,870	-	-	-	-
Total Net Project Cost Estimate:	32,923,764	17,118,102	6,009,878	17,658,965	9,433,000	11,685,000	3,550,000	24,668,000

Water

Water Totals for Water & Water System Development Enterprise Fund

	Prior Year Totals	Fiscal Year 2014 Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Total Project Cost Estimate:	39,532,833	18,938,835	6,338,209	18,938,835	10,328,000	20,885,000	7,400,000	38,613,000
Total Project Funding Estimate:	6,609,069	1,820,733	328,331	1,279,870	-	-	-	-
Total Net Project Cost Estimate:	32,923,764	17,118,102	6,009,878	17,658,965	10,328,000	20,885,000	7,400,000	38,613,000

Water Totals

	Prior Year Totals	Fiscal Year 2014 Budget	YTD Actuals + Encumb	Estimated	FY 2015 Estimate	FY 2016 Estimate	FY 2017 Estimate	Total 2015 - 2017
Total Project Cost Estimate:	39,532,833	18,938,835	6,338,209	18,938,835	10,328,000	20,885,000	7,400,000	38,613,000
Total Project Funding Estimate:	6,609,069	1,820,733	328,331	1,279,870	-	-	-	-
Total Net Project Cost Estimate:	32,923,764	17,118,102	6,009,878	17,658,965	10,328,000	20,885,000	7,400,000	38,613,000

ATTACHMENT B: 2014-2017 CIP FORECAST

	2013-14 Amended Budget	2014-15 Requested	2015-16 Proposed	2016-17 Proposed
NORTH COAST/RIVER SOURCES				
North Coast System Rehabilitation c709835	Engineering/Environmental $804,164	 $645,000	Construction $8,235,000	Eng/Env $1,000,000
Felton Diversion Replacement and Pump Station Rehabiliation c7016xx			Evaluation $300,000	
Modify Tait Street Diversion - Tait Wells c709872			Evaluation $300,000	
NEWELL CREEK DAM/PIPELINE				
Newell Creek Supply Main Rehabilitation c70xxxx				Pre Eng/Env $700,000
BELTZ GROUNDWATER				
Beltz Well #4 Replacement with #12 c701003	Construction $3,138,691			
GRAHAM HILL WTP				
Filter Rehabilitation and Upgrades c701303	Construction $1,647,191	 $3,538,000		
Water Tanks c700025/c7015xx	Evaluation $124,881	Eng $200,000	Construction $2,000,000	
Hypochlorite Generation c701401	Engineering $75,000		Construction $900,000	
Flocculator/Sedimentation Improvements c7016xx			Construction $6,000,000	
Basin Cover c7017xx				Construction $300,000
Ultraviolet System c7015xx		Eng $40,000	Construction $400,000	
DISTRIBUTION SYSTEM				
Bay Street Reservoir Replacement c700313, c700027				
Phase 2 (Tank 1)	Construction $2,520,216			
Phase 3 (Tank 2)	Design-Build $5,017,774	 $3,250,000		
Phase 4 (Site improvements)		Construction $850,000		
Gravity Trunk Main Valve Replacement c7015xx		Construction $150,000		
Recoat University Reservoir No. 4 c7015xx		Inspection $95,000	Environmental $100,000	Engineering $75,000
Recoat University Reservoir No. 5 c7015xx		Inspection $110,000	Engineering $75,000	Construction $1,750,000
Main Replacements-City Engineering c700002	$1,330,299	$500,000	$1,000,000	$1,000,000
Main Replacements-Distribution c7015xx		$300,000	$325,000	$325,000
Main Replacements-Other Agency Driven c700003	$385,881	$0	$200,000	$200,000
Main Replacements-Customer Initiated c700004	$50,000	$50,000	$50,000	$50,000
Transmission System Improvements c709833, c700017	$500,000	$500,000	$1,000,000	$1,000,000
OTHER				
Loch Lomond Facilities Upgrades c701301	Evaluation $85,000	Master Plan/Construction $100,000		Construct *tbd*
Water Resources Building c7015xx				Construction $1,000,000
NEW WATER SUPPLY				
Water Supply Project c700305, c700016	Engineering and Environmental $2,559,739			

Water Supply Reliability c701402, c701403		Evaluation $700,000			
TOTAL CIP	**$18,938,836**	**$10,328,000**	**$20,885,000**	**$7,400,000**	

WATER DEPARTMENT
MEMORANDUM

DATE: March 31, 2014

TO: Water Commission

FROM: Eileen Cross, Community Relations Specialist

SUBJECT: Communications Progress Report

RECOMMENDATION: Review progress on communications plan for drought and rationing.

BACKGROUND: At the March 3 commission meeting a report was made on the overall strategy for communicating with the public about drought and rationing. This report details the progress that has been made to date.

Earned Media

The Water Department's upcoming rationing program and successful conservation programs have been featured both in national and local media.

National/statewide media:

- Al Jazeera News
- Bloomberg News
- Contra Costa Times
- Sacramento Bee
- San Jose Mercury News
- Water Education Foundation

Local media:

- Good Times Weekly
- Santa Cruz Sentinel
- Clear Channel Radio, interview with Eileen Cross
- KPIG Hog Call
- KSCO radio, interview with Rosemary Chalmers and Rosemary Menard
- KUSP radio, interview with JD Hillard and Rosemary Menard
- KZSC radio, interview/call-in with John Sandich and Clara Cartwright

Paid Media

- Ads in the Sentinel, Santa Cruz Weekly, Parks and Rec Guide
- Daily ads on KUSP

Social Media

- Biweekly updated "Drought 2014" webpage
- 3-4x weekly Facebook posting
- City blog contributions

Mailers

- Bill inserts in March to all account holders
- Postcards to all service area residents
- Personalized letters to all multi-res account holders

Outreach

In March, Water Conservation hired temporary employees to ramp up for a full schedule of outreach in April:

- **Tuesdays** Bookmobile locations; Riverside Apartments
- **Wednesdays** 2nd Harvest Foodbank locations; downtown farmers market
- **Thursdays** Staff of Life
- **Saturdays** flea market; westside farmers market
- **Sundays** Live Oak farmers market
- **April 4** Open house for property managers
- **April 15** Santa Cruz Neighbors general meeting
- **April 16** Rationing 101 at Louden Nelson
- **April 21** Rationing 101 at the Live Oak Grange

WATER COMMISSION
REPORT

DATE: March 31, 2014

TO: Water Commission

FROM: Water Director

SUBJECT: City Council Items Affecting Water

City Council Meeting of February 25, 2014:

Declaration of Water Shortage Emergency (WT)

Motion to accept a resolution declaring a water shortage emergency within the city of Santa Cruz water service area.

City Council Meeting of March 11, 2014:

Bay Street Reservoir Replacement Project – Phase 2 Construction – Notice of Completion (WT)

Motion to accept the work of Gateway Pacific Contractors Inc., (Sacramento, CA) as complete per the plans and specifications and authorizing the filing of a Notice of Completion for the Bay Street Reservoir Replacement Project – Phase 2.

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WATER DEPARTMENT
MEMORANDUM

DATE: April 1, 2014

TO: Water Commission

FROM: Toby Goddard, Administrative Services Manager

SUBJECT: Water Supply Outlook for 2014

RECOMMENDATION: That the Water Commission recommend that City Council uphold its February 25, 2014 decision declaring a Water Shortage Emergency and directing the Water Department to implement Stage 3 actions based on the attached draft projection of water supply availability for 2014, with the caveat that if at any time during the dry season reservoir storage deviates significantly from the current projection of 1.3 billion gallons at the end of October 2014 due to changes in either the availability of supply or level of demand then it should reconsider escalating the water supply emergency to Stage 4.

This report is the latest in a series of monthly statements summarizing current water conditions and evaluating the City's water supply outlook for 2014. It covers the water year beginning October 1, 2013 up to the beginning of April 2014.

Rainfall

Rainfall for the season as of April 1 measures 12.10 inches, or 43 percent of normal, in the City of Santa Cruz. In the Newell Creek watershed, total rainfall to date measures 16.88 inches, or 38 percent of normal. Monthly rainfall totals for the Santa Cruz area are presented in Figure 1.[1] Monthly rainfall totals for February and March were close to normal. Even still, the 2014 water year will likely go down as one of the driest in the City's history, along with 1924 (10.85"), 1976 (13.88") and 1977 (15.93").

[1] From a water supply perspective, rainfall that occurs in the watershed is more important than rain that is reported in the City limits. The Santa Cruz location, however, is used to best illustrate rainfall patterns because it is an official National Weather Service observation station with a long period of record.

While the bulk of the wet weather season has now passed, the weather forecast calls for more showers throughout the central coast region over the next few days. These late season storms are certainly welcome, but any precipitation from now on likely will be too little and too late to have much impact on this year's severe drought.

Runoff

Monthly stream flow levels in the San Lorenzo River, the City's primary source of water supply, have tracked far below normal all winter long (Figure 2). On average, mean monthly flow in the San Lorenzo River peaks during the month of February at just under 400 cubic feet per second (cfs). This February, even though rainfall was above average for the month, conditions in the watershed were so dry that the storm systems generated very little runoff. Mean monthly flow was 51 cfs in February (13 percent of average) and 50 cfs in March (17 percent of average).

Reservoir Storage

Reservoir storage in Loch Lomond Reservoir currently stands at 1.93 billion gallons, or nearly 68 percent of capacity, which translates to 76 percent of average at the end of March. The lake level remains more than 17 feet below the spillway elevation.

Water Year Classification

Cumulative runoff from the San Lorenzo River for the year to date measures 9,409 acre feet, or 13 percent of average through the month of March (Figure 3). Accordingly, Water Year 2014 remains classified as "Critically Dry". Cumulative runoff now slightly exceeds the amount recorded at this time of year during 1977, but remains well below the 29,000 acre-foot threshold of total annual runoff required for the water year classification to be upgraded to "Dry".

Drought Intensity

As of March 25, 2014, all of Santa Cruz County remains designated as being in a condition of "Exceptional Drought", according to the US Drought Monitor (Figure 4).

Projection of Water Supply Availability for 2014

With 2014 shaping up to be the third in a series of consecutive dry years, and the driest year experienced in possibly a generation, there is a lot of uncertainty involved in trying to forecast the City's water supply availability for the season ahead. Water Department staff has developed and explored a number of different scenarios in order to determine a recommended end of season

storage goal for Loch Lomond Reservoir and to establish the appropriate demand reduction goal for 2014. There is not a lot of guidance either from historical stream flow records or production volumes to draw on. Moreover, this forecast relies on a draft flow proposal that the City is making to the fishery agencies that is yet to be approved. Accordingly, it should not be characterized as a "final" forecast by any means, rather a draft that represent the best collective judgment of staff at this point in time.

Table 1 presents monthly production estimates for each source of supply, along with estimates for monthly water demand, and determines how much water would be needed from Loch Lomond Reservoir each month from April through October. The assumptions used for each line item are summarized in the footnotes beneath Table 1. The key factors considered by staff are highlighted below, by source of supply.

North Coast Streams

Gross production (i.e., the amount of water entering the system intakes at the source) from the north coast streams was conservatively estimated using actual production values obtained during the 1977 drought from Liddell Spring and Majors Creek, less 20 percent. No production is assumed from Laguna Creek, which is consistent with how the Department operated last year under a temporary arrangement with state and federal fishery agencies.

Net production represents the amount of water reaching the Coast pump station and available for treatment. For the season, the coast system is estimated to produce only 166 million gallons, which is 15 percent or about 30 million gallons less than the amount actually produced last year. The main uncertainty is how well Liddell Spring will perform after three dry years, which is the reason why the supply was estimated so conservatively. It can usually be counted on to contribute 1.0 mgd or 30 million gallons per month on a sustained basis during normal years.

San Lorenzo River

The San Lorenzo River is the City's single largest water supply. Until recently, it was running so low and the weather was so dry that there was no reliable guidance for how the river might perform this year. Therefore, different scenarios were developed based on some percentage of flows recorded in 1977, which was the worst case on record.

The method to forecast water production from the San Lorenzo River starts with making a projection of mean monthly flow rate in cubic feet per second for the river at the USGS gauge in Felton using the table in Appendix C of the City's Water Shortage Contingency Plan. Next a factor is added to account for any tributary inflow below the gauge in Felton. The sum of these

flows is labeled “Flow at Tait St Diversion”. Subtracted from that figure is the proposed instream flow release that would be dedicated for fishery uses in the lower San Lorenzo River and is otherwise unavailable for diversion. Next, a safety factor is added representing an allowance for plant operators who are trying to balance the goals of optimizing water production at the Tait St. diversion with the need to stay above the fish flow target so that they don’t inadvertently violate the instream flow release requirement.

This remaining amount of flow is considered available for water production. The value is then converted from a flow rate expressed in cubic feet per second to a volume and expressed in million gallons per month.

All of these analytical inputs in Table 1 described above are estimates and subject to error.

Recent rains have bolstered seasonal totals and given some optimism that even though seasonal rainfall totals are lower this year compared to 1977, staff is forecasting that the river can be expected to run at levels equal to 100 percent of what occurred in 1977. Staff conferred with the state hydrologist at the California Department of Water Resources, who indicated that conditions statewide are shaping up to be the fourth or fifth driest year, but not the worst ever, and suggested comparing the flows in the San Lorenzo River measured at the end of 2013 with same flows at the end of 1976 as a way to read how the river will perform this year. As staff had used flows from 80 to 90 percent of 1977 flows in developing initial scenarios, this change makes a big difference in the monthly production from the river, and ultimately in the end of season reservoir storage.

A small amount of water production, about 8 million gallons per month is also provided by one the Tait Street Wells. The other Tait Well is considered to be in poor condition and too unreliable to count on for any supply this year. Engineering staff is examining options for rehabilitating this well, but it is unrealistic to expect a new well to be in service this year.

Live Oak Wells

Water production from the Live Oak Wells is the easiest of all sources to project based on a constant operating rate of 0.8 million gallons per day and a goal to extract 210 million gallons per year limit in critically dry years. The big unknown, however, is whether or not the surrounding water level along the coast can be maintained at least 2 feet above mean sea level all season long. Staff will be monitoring groundwater levels closely this year. It may be possible to bring the new Beltz 12 well, now under construction, online later this summer so that groundwater production could be shifted further inland away from the coast.

Water Demand

The 2014 water supply forecast includes two lines items for water demand. The first line is based on an average of 2012 and 2013 actual demand. These years were comparable in annual volume but differed slightly in the seasonality due to differences in weather patterns. Both years were shaped in part by the Stage 1 Water Shortage Alert and accompanying water restrictions in effect at the time, reducing demand by about 5 percent.

The second, lower line labeled "Curtailed System Demand" represents the estimated monthly demand associated with water rationing under a Stage 3 Water Shortage Emergency. It is based on the 2012/13 average, minus 20 percent, beginning in May. Staff consciously used the mid-point of the 15 to 25 percent range in Stage 3 rather than the upper end for forecasting purposes, for two reasons. First, there is no way to know precisely how customers will respond to water rationing and to say exactly how much demand will be reduced in advance. Overall demand for water has dropped in recent years, and demand hardening could make the customer's ability to respond to water rationing this year more difficult to achieve. Second, it is assumed that 2012/13 level of demand on which the lower line is based already includes the up to 5 percent reduction due to restrictions that were in place at the time.

Loch Lomond Reservoir

The final part of the water supply forecast involves comparing water supply from the City's flowing and groundwater sources against the curtailed demand to understand how much lake water will be needed each month to meet estimated system demand, and to project how the reservoir will respond over the coming dry season. This includes factoring in both evaporation from the reservoir surface and outflows for downstream flow requirements, the latter of which has been reduced to reflect the approval earlier this year by the State Water Resources Control Board of the City's temporary urgency petition.

The results are illustrated in Figure 5. The reservoir begins in April at 68 percent of capacity. This projection assumes there will be no further inflow into Loch Lomond, so any additional rain and runoff after April 1 that helps improve the starting position for storage will similarly help bolster storage at year's end. With water rationing in place, the reservoir is projected to decline to 47 percent of capacity at the end of October, leaving a little more than 1.3 billion gallons of water in storage. Figure 5 includes a line to show how the reservoir would be drawn down without water rationing in place this year, for illustration purposes. That would put the reservoir at 33 percent of capacity at the end of the season, leaving only 933 million gallons in storage.

The appropriate amount of carryover storage to target for 2014 is something that was carefully considered by staff. The City's operations model uses 1.0 billion gallons as a planning guide in a worst case drought to balance the use of the reservoir in the current year with the goal of leaving some amount of storage in place in case of a subsequent dry year. However, with so much uncertainly, staff felt that it was better to set target a higher end of season storage goal of no less than 1.2 billion gallons (42 percent of capacity). This would provide 200 million gallons more to serve as a cushion in case some or all of the forecasting parameters miss their mark.

Accordingly, staff recommends that the decision made earlier this year by City Council declaring a Water Shortage Emergency and directing the Water Department to implement Stage 3 actions be upheld, with the caveat that if during the dry season the trend for reservoir storage goes off track negatively due to changes in either the availability of supply or level of demand then City Council should reconsider escalating the water supply emergency to Stage 4. The same would be said if requirements for instream flow differ markedly from the City proposed flow set for 2014.

Table 2 presents monthly production and reservoir level targets for the 2014 season based on this projection. These figures will be posted on the City's drought webpage:

www.cityofsantacruz.com/drought

They will be updated and made available for the community to track as the season progresses.

Attachments:
Figure 1. Monthly Rainfall, City of Santa Cruz
Figure 2. Mean Monthly Flow, San Lorenzo River at Big Trees
Figure 3. Cumulative Runoff and Water Year Classification
Figure 4, U.S. Drought Monitor, California
Figure 5. 2014 Reservoir Drawdown
Table 1. 2014 Water Supply Forecast
Table 2. 2014 Water Production Targets

Fig 1. Monthly Rainfall, City of Santa Cruz, 4/01/14 (inches)

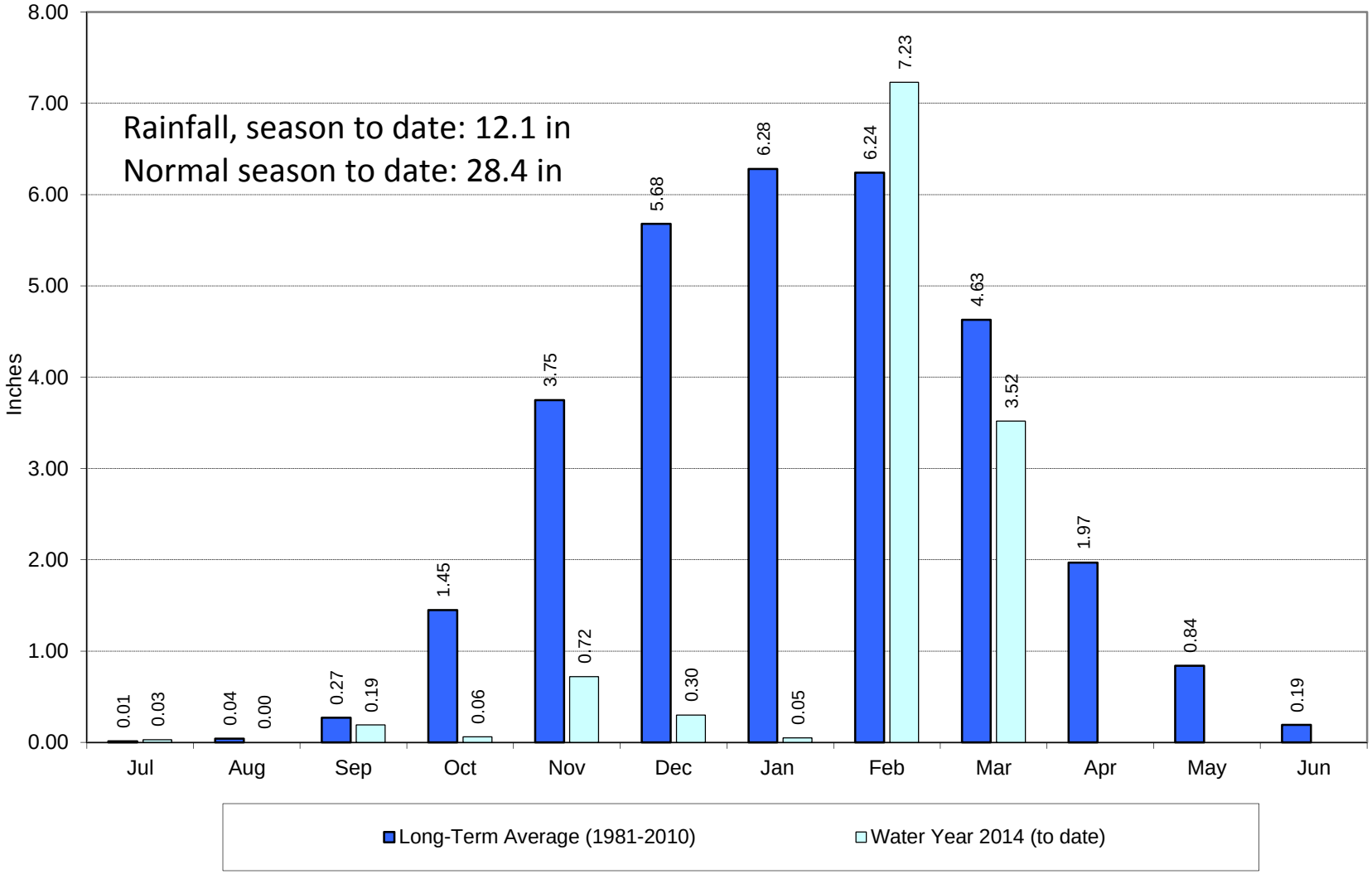


Figure 2. Mean Monthly Streamflow, San Lorenzo River at Big Trees, (cubic feet per second)

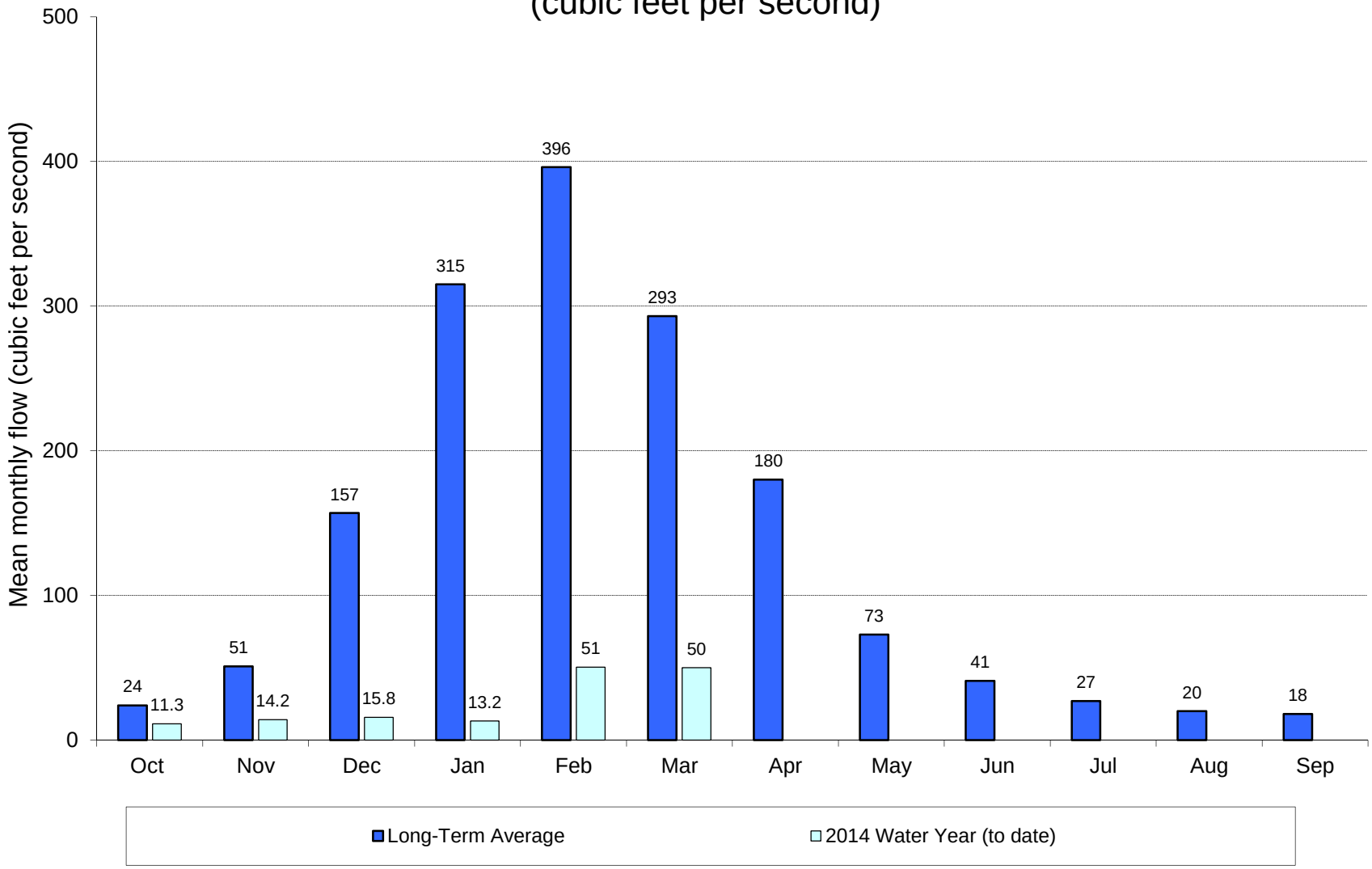
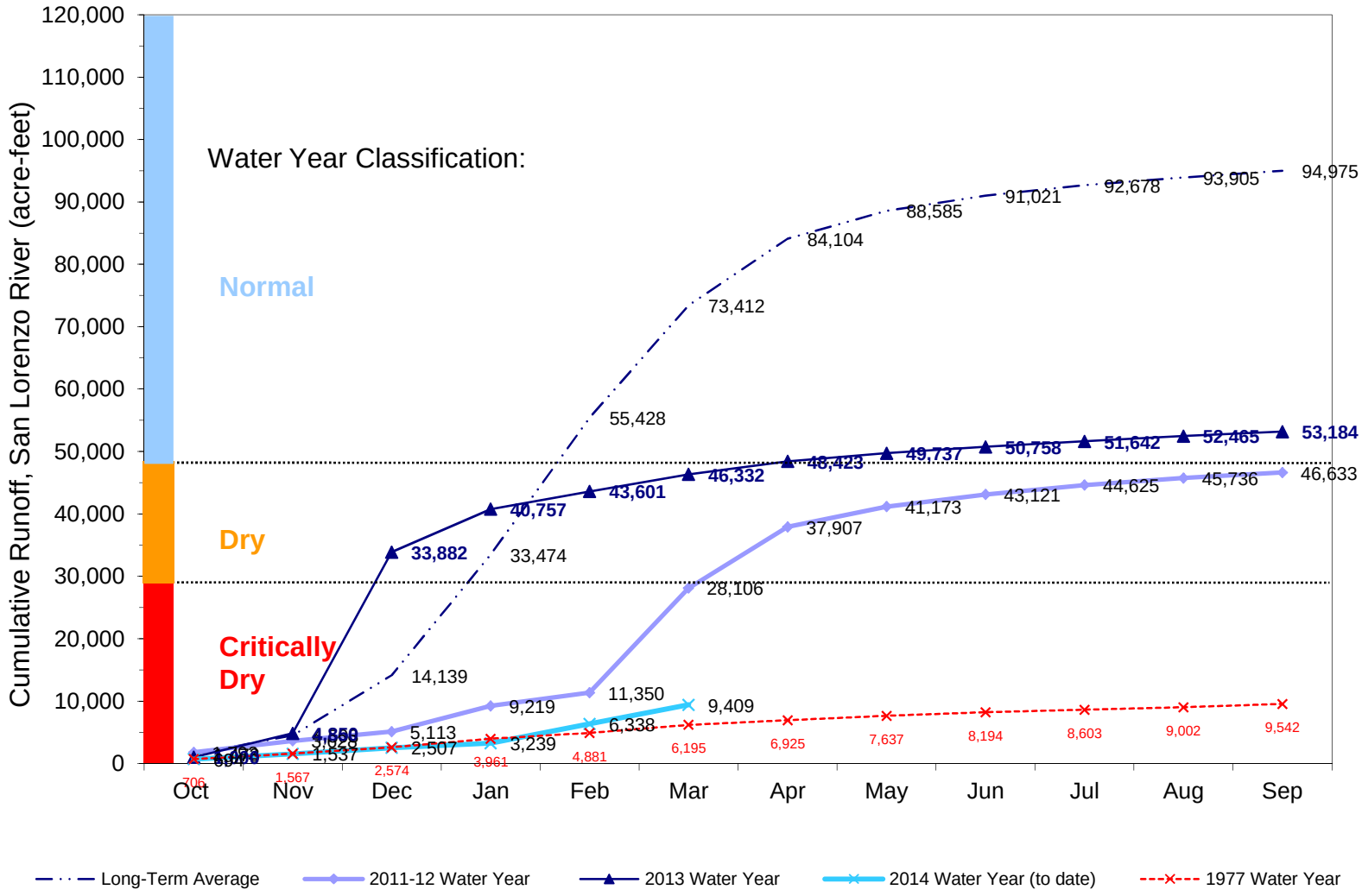
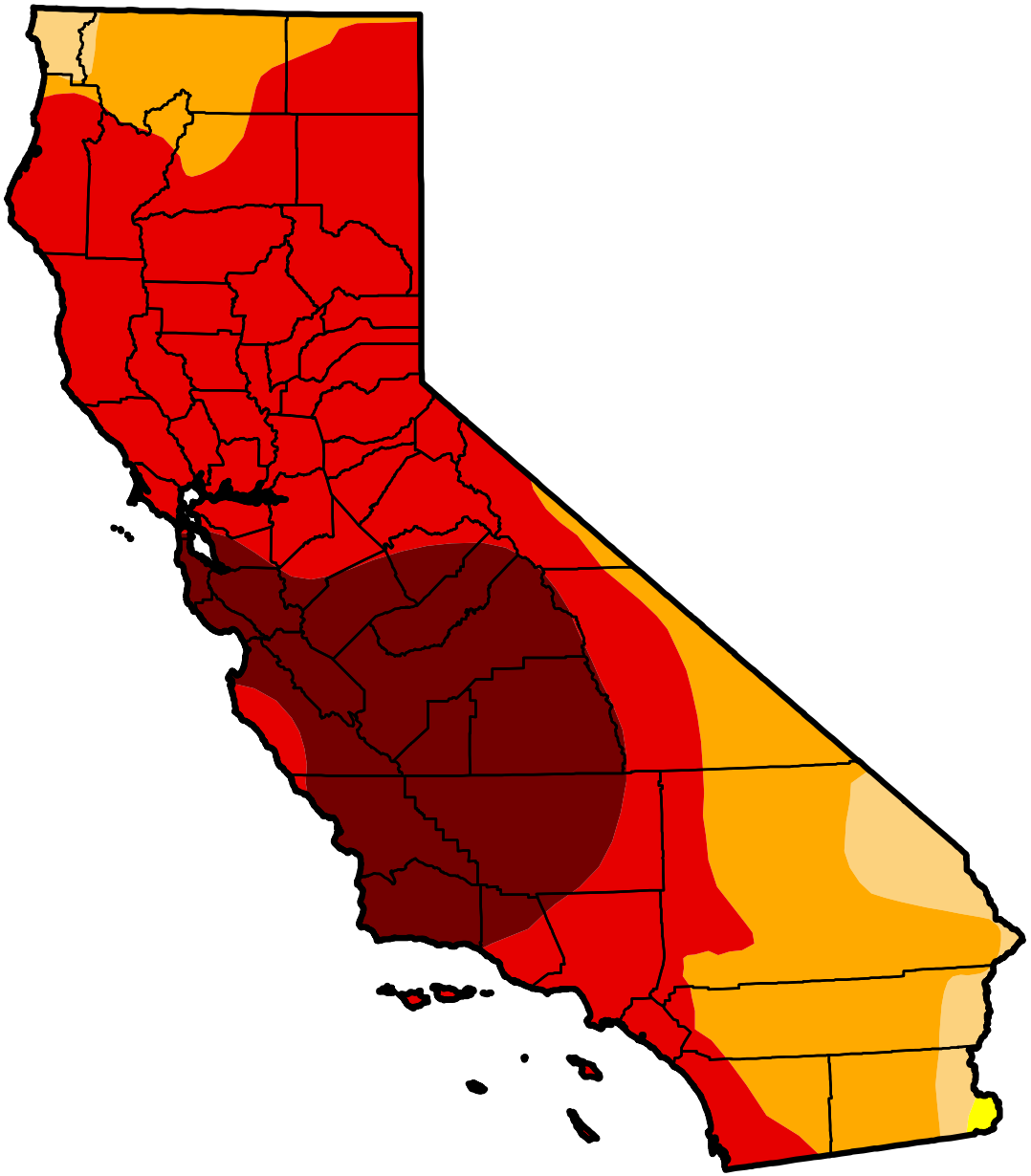


Figure 3. Cumulative Runoff and Water Year Classification, 4/01/14 (acre-feet)



U.S. Drought Monitor

California



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March 25, 2014

(Released Thursday, Mar. 27, 2014)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	99.80	95.21	71.78	23.42
Last Week *3/18/2014*	0.01	99.99	99.80	93.08	71.78	22.37
3 Months Ago *12/24/2013*	2.61	97.39	94.25	84.88	27.59	0.00
Start of Calendar Year *12/31/2013*	2.61	97.39	94.25	87.53	27.59	0.00
Start of Water Year *10/1/2013*	2.63	97.37	95.95	84.12	11.36	0.00
One Year Ago *3/26/2013*	0.00	100.00	48.38	24.22	0.00	0.00

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:
David Simeral
Western Regional Climate Center

http://droughtmonitor.unl.edu/

Figure 5. 2014 Reservoir Drawdown

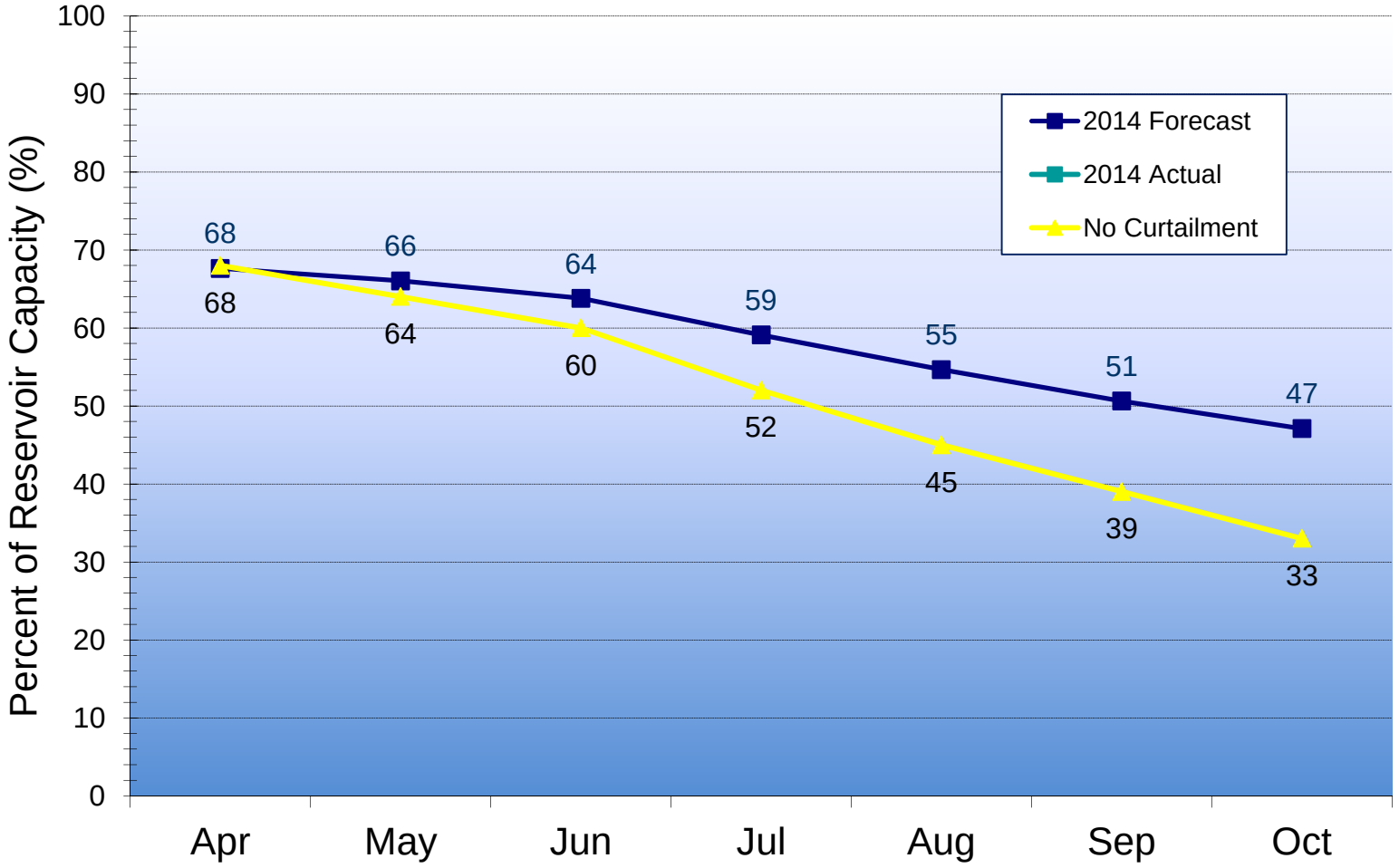

Table 1. 2014 Water Supply Forecast-Scenario 5

SCWD Production Forecast (million gallons)	April			May			June			July			Aug			Sep			Oct			Total		
	Projected	Actual	Variance	Projected	Actual	Variance	Projected	Actual	Variance	Projected	Actual	Variance	Projected	Actual	Variance	Projected	Actual	Variance	Projected	Actual	Variance	Projected	Actual	Variance
North Coast (gross production)	34	--	--	33	--	--	30	--	--	28	--	--	27	--	--	27	--	--	28	--	--	208	--	--
North Coast (net production)	28			26			24			22			22			22			22			166		
San Lorenzo River	223			168			159			104			104			87			90			936		
Live Oak Wells	12			25			25			25			25			25			25			162		
Tait Wells	8			8			8			8			8			8			8			56		
Total Production without Lake	270			228			216			160			159			142			146			1,320		
Projected System Demand	266			317			326			342			333			303			294			2,181		
Curtailed System Demand	266			254			261			274			266			242			235			1,798		
Lake Production Needed to Meet Demand	**0**			**26**			**44**			**114**			**107**			**100**			**90**			482		
Evaporation (feet)	0.2			0.3			0.3			0.4			0.4			0.3			0.2			2		
Evaporation (mil gal)	9			14			14			14			13			9			5			78		
Fish Release (mil gal)	5			5			5			5			5			5			5			35		
Beginning Lake Volume	**1,928**			**1,914**			**1,869**			**1,805**			**1,672**			**1,547**			**1,433**					
End of Month Lake Volume	**1,914**			**1,869**			**1,805**			**1,672**			**1,547**			**1,433**			**1,333**					
End of Month Lake Elevation (ft above msl)	**559.5**			**558.4**			**557.0**			**553.7**			**550.3**			**547.2**			**544.3**					
Monthly change in elevation	-0.2			-1.1			-1.4			-3.3			-3.4			-3.1			-2.9					
Cumulative change in elevation	-0.2			-1.3			-2.7			-6.0			-9.4			-12.5			-15.4					
Percent of capacity (%)	67.6			66.0			63.8			59.1			54.7			50.6			47.1					

North Coast Gross: Liddell and, Majors production equal to that of 1977, Zero production assumed from Laguna Creek.

North Coast Net: Losses and raw water sales to agriculture assumed to be 20% of gross.

Level of Curtailment Imposed (May thru October) 20%

San Lorenzo River forecast flow (see below) based on 1977 100% exceedance (most closely resembles current flow level)

Flows in San Lorenzo River are 100% of 1977 Flows

Flows in Coast Sources are 80% of 1977 Flows

Releases at Tait: Per 3/6/14 email from C.Berry

Live Oak Wells: 210 MG/pumping season (April to Nov)

Projected unconstrained system demand based on average of 2012 and 2013 demands when 5% curtailment was already in place

Assumptions for Loch Lomond Reservoir include: starting elev at 559.5 (67.8%), no additional pumping from Felton Diversion, & no significant natural inflow after March.

Projected San Lorenzo River Flow 2014 (cfs)	15	12	9	7	7	6	6
Additional Inflow below Felton	2.0	1.3	0.3	0.0	0.0	0.0	0.0
Flow at Tait St Diversion (cfs)	17.0	12.9	9.7	6.7	6.7	6.0	6.0
Release past Tait (cfs)	5.0	4.0	1.0	1.0	1.0	1.0	1.0
Release Buffer (cfs)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Available Flow (cfs)	11.5	8.4	8.2	5.2	5.2	4.5	4.5
Production (mg)	223	168	159	104	104	87	90
Bypass Release as % Total Flow @ Tait	29.4%	31.0%	10.3%	14.9%	14.9%	16.7%	16.7%
Actual San Lorenzo River Flow (cfs)							

Table 2. 2014 Water Production Targets

Metric:	May	Jun	Jul	Aug	Sept	Oct
Monthly Water Production (mg):						
Target	254	261	274	266	242	235
Actual						
Average Daily Water Production (mgd):						
Target	8.2	8.7	8.8	8.6	8.1	7.6
Actual						
Reservoir Level (ft above msl):						
Target	558.4	557.0	553.7	550.3	547.2	544.3
Actual						
Reservoir Storage (%)						
Target	66.0	63.8	59.1	54.7	50.6	47.1
Actual						

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WATER DEPARTMENT
MEMORANDUM

DATE: April 2, 2014

TO: Water Commission

FROM: Susie O'Hara, Assistant Engineer II

SUBJECT: Water Conservation Master Plan: Shared Vision Meeting #2

RECOMMENDATION: That the Water Commission consider, deliberate on, and modify, as needed: 1) Water Conservation Master Plan goal/objective language, 2) staff/consultant recommended long-term water conservation program.

BACKGROUND: Work on the Water Conservation Master Plan (WCMP) kicked off in March of 2013. Now that the identification and technical evaluation of potential conservation measures have been completed, the Water Commission is ready to enter into the deliberative phase of the master planning process. The deliberative phase will culminate in a shared vision by the Water Commission on the preferred long-term conservation strategy for City Council consideration and adoption.

With regard to the Water Commission charge and participation, the WCMP process comprises four distinct phases: analysis of system-wide demand projections/establishing demand planning baseline; evaluation of system-wide conservation potential; identification and study of potential conservation measures; and deliberation and adoption of preferred long-term conservation program. As the Commission begins the deliberative phase, it is important to circle back and consider the work completed to date.

The identification and evaluation of potential conservation measures was an intensive process spanning several meetings from April 2013 to February 2014. Meetings included:

- Identification and review of over 90 potential conservation measures (options) (April 2013),
- Selection of over 30 measures for further technical analysis using evaluation critieria (May 2013),
- Review of the modeling process as well as preliminary conservation savings resulting from plumbing code changes (October 2013); and,
- Review of four program scenarios, each representing a different suite of measures (February 2014).

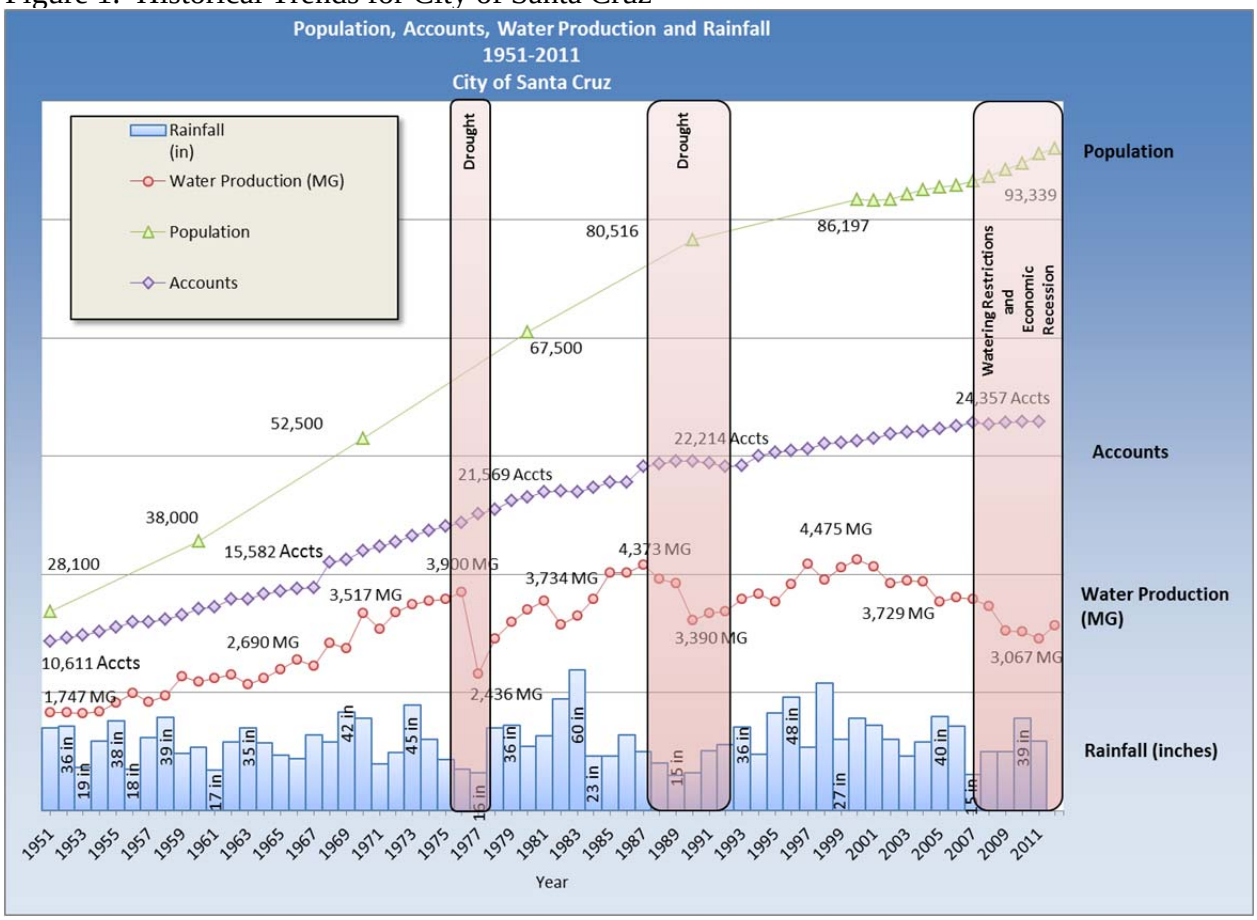
At the March 2014 meeting, the Water Commission heard a presentation on a “Shared Vision Planning Process” for facilitating the Water Commission's decision on selecting the preferred suite of conservation measures that will define the Water Conservation Master Plan. The Commission was asked to provide input on the goals/objectives and decision criteria for program selection.

Analysis of System-wide Demand Projections

The WCMP projects system-wide demand consistent with the City of Santa Cruz 2010 Urban Water Management Plan (UWMP). The 2010 UWMP assumed a 2010 baseline of 2007-08 levels (3,500 million gallons per year in 2010 with 500 million gallons of growth over a 25 year period) given economic recovery and normalized/non-drought rainfall patterns.

Since 2010, however, the City has not seen a full demand recovery (2013 system-wide demand, for instance, was 3,300 million gallons) and demands will likely be very depressed during and after 2014 rationing. Nonetheless, system-wide demand has recovered to pre-drought levels after each of the three droughts of record since 1951, as noted in Figure 1. Given this history of consistent recovery, it is prudent to assume that future demands will follow suit once rainfall patterns/drought conditions and the economy normalize.

Figure 1. Historical Trends for City of Santa Cruz



Evaluation of System-wide Conservation Potential

The City conducted the Residential and Commercial Baseline Water Use Survey (Baseline Survey) in 2013 to quantify the effectiveness of the City's current water conservation programs by inventorying water-using fixtures and landscapes. This information was critical to the development of the WCMP since it established the future conservation potential of fixture replacement and landscape-efficiency measures. A summary of the Baseline Survey results is in Table 1, which demonstrates the types of fixtures with less than 100% saturation in the City's service area. With this saturation data in hand, the next WCMP can focus on new programs and technologies that target the greatest remaining water conservation potential.

Table 1. Saturation Levels of High Efficiency Fixtures in 2012

Proportion of Fixtures that are Water-Efficient				
	Toilets	Clothes Washers	Faucets	Showerheads
Single Family Homes	90%	63%	83%	92%
Multi-Family Homes	89%	58% (in the home) 46% (in laundry rooms)	87%	95%
Businesses	96%	52%	4% - 88% depending upon type	95%

Source: Residential and Commercial Water Use Baseline Survey, City of Santa Cruz, May 2013

Identification and Study of Alternative Water Conservation Measures

The process to identify and thoroughly evaluate potential conservation measures was iterative. First, an exhaustive list of potential measures was generated based on input from City staff, consultants, Water Commissioners and the public. This task included a review of the current water conservation measures and the identification of new measures that may be appropriate for the City's service area. Next, this initial list of over 90 potential measures was screened to set aside measures that may not be appropriate for various reasons. The following criteria were used to narrow the list of potential measures:

- Water Saving Potential – emphasize measures that reduce average daily water use within the Santa Cruz community.
- Sustainable Water Savings – emphasize measures that are reliable over the long run.
- Quantifiable Water Savings – emphasize measures where water savings can be accurately predicted.
- Widespread Community and Social Acceptance – emphasize measures with high participation rates, low out-of-pocket expenses, and that are equitable across customer type and social demographics.

- Feasibility of Implementation/Secondary Impacts – emphasize measures that can achieve objectives.
- Ancillary Benefits – emphasize measures that achieve additional goals such as reducing energy/GHGs, reducing peak-season use, providing valuable customer service, and other non-quantifiable benefits (behavioral change, public awareness, etc.).

The outcome of the screening process yielded a list of 39 potential measures to be thoroughly vetted with the Demand Side Management Least Cost Planning Decision Support System (DSS) model for water savings potential and cost-effectiveness. Staff and consultants assembled four potential programs for Water Department consideration (Tables 2 & 3). The alternative programs are not intended to be rigid programs but rather demonstrate the range in savings that could be generated if selected measures were run together. All four programs were assembled to go beyond the passive savings expected through plumbing code.

Table 2: Basis for Assembling Conservation Programs

Program	Description
A	This program represents the group of measures that the City is currently operating.
B	This program consists of the measures that are the most cost effective, as well as some that are included for their customer-service value. This program represents the most cost effective suite of measures from the utility and community perspective.
C	This program is a combination of measures currently being operated, cost-effective measures, and selected measures for added synergy and savings. While Program C is less cost effective that Program B, it includes additional measures that focus on higher efficiency and rebate opportunities, the water/energy nexus for new developments, and enhanced outdoor programs. Program C does not reach a breakeven benefit/cost ratio, but does represent a suite of measures feasible to fund, implement and operate by the Water Department.
D	This is the entire list of measures analyzed, not including the less intensive versions of the measures designated A/B.

It is important to note that the cost-effectiveness evaluation is based on an avoided cost of $2500 of operating cost per million gallons for an alternative supply project. This placeholder figure was discussed by the Commission and members of the public at the March 3, 2014 meeting.

The Water Department recognizes that this figure ultimately may not accurately reflect the avoided cost of a future selected supplemental water supply project, but considers that the avoided cost is unlikely to be lower than $2500 of operating costs per million gallons.

Selecting a suite of additional long term conservation programs to proceed with based on the current avoided cost placeholder does not limit our ability to revisit the analysis once a supplemental supply project is selected and its avoided cost is calculated.

Table 3. Summary of Conservation Program Measures

Conservation Programs and Measures Santa Cruz, California							
Measure Name	**Program A**	**Program B**	**Program C**	**Program D**	**Water Savings MGY 2030**	**Benefit/Cost Ratio**	**Cost of Water Saved $/MG**
NRW Measure Model		X	X	X	38	0.73	$2,344
Install AMI		X	X	X	6	0.33	$4,967
Water Budget Based Billing		X	X	X	7	9.52	$178
Public Information Program including Various Outreach & Education Approaches	X	X	X	X	7	0.29	$6,679
Customer Billing Report & Service				X	5	0.42	$4,445
Real Customer Water Loss Reduction - Leak Repair and Plumbing Emergency Assistance		X	X	X	30	1.29	$1,313
Single Family Water Surveys	X	X	X	X	3	0.14	$12,615
Pressure Reduction				X	4	0.20	$8,039
High Efficiency Faucet Aerator / Showerhead Giveaway	X	X	X	X	25	9.55	$182
Residential High Efficiency Toilets (HET) Rebates	X	X			9	0.86	$2,079
Residential Ultra High Efficiency Toilets (UHET) Rebates			X	X	22	0.38	$4,294
Install High Efficiency Toilets, Showerheads, and Faucet Aerators in Residential Buildings					30	0.63	$2,570
Residential Washer Rebate A	X	X			31	1.74	$993
Residential Washer Rebate B			X	X	48	0.82	$2,097
Require High Efficiency Clothes Washers in New Development		X	X	X	16	2.03	$812
Provide a Rebate for Hot Water on Demand Pump Systems				X	2	0.07	$24,031
Require Hot Water on Demand / Structured Plumbing in New Developments			X	X	7	0.66	$2,407
Toilet Retrofit At Time of Sale	X	X	X	X	9	1.64	$1,076
High Efficiency Washer Rebate			X	X	3	0.54	$3,128
Customized Top Users Incentive Program	X	X	X	X	20	5.35	$306
Promote Restaurant Spray Nozzles		X	X	X	11	7.13	$245
CII Surveys and Top Water Users Program (Top customers from each customer category)	X	X	X	X	21	0.69	$2,394
High Efficiency Urinal Program	X		X	X	2	0.28	$5,968
Install sensor-activated faucets				X	21	0.31	$5,203
School Building Retrofit		X	X	X	5	2.73	$581
City Code Requirement for new Landscapes	X	X	X	X	8	4.24	$382
Res SF Landscape Conversion or Turf Removal A	X		X		1	0.09	$17,920
Res SF Landscape Conversion or Turf Removal B				X	2	0.05	$35,839
Res MF CII Landscape Conversion or Turf Removal A	X		X		0.5	0.07	$24,534
Res MF CII Landscape Conversion or Turf Removal B				X	1	0.03	$49,069
Expand Outdoor Water Survey & Water Budgets			X	X	2	0.15	$11,157
Financial Incentives for Irrigation and Landscape Upgrades				X	3	0.09	$17,578
Weather Based Irrigation Controller Rebates				X	5	0.20	$7,568
Rotating Sprinkler Nozzle Rebates			X	X	3	0.50	$3,051
Residential Gray Water Retrofit				X	0.4	0.19	$8,206
Shade Tree Program				X	5	0.29	$5,619
Promote Rain Sensors				X	1	0.33	$4,752
Provide Rain Barrel Incentive	X	X	X	X	5	0.58	$2,857
Provide Rain Catchment System Incentive				X	0.006	0.04	$42,988

DISCUSSION: With three of the four phases of the process complete, the Water Commission will now consider and deliberate on two issues. Staff is recommending, for purpose of discussion, tentative WCMP goals and objectives and Program C as the preferred alternative. Staff's recommendations are based on best practices and Commission feedback, and are intended to facilitate deliberations by providing a foundational structure from which the Commission can build. A preview of the deliberative process and staff recommendations for the WCMP goals/objectives and preferred program are outlined below.

Deliberative Process

Staff will facilitate deliberations on the goal/objective language and preferred program of measures. The deliberative process will be moldable to the needs of the public and Commission, but adhere to the following key steps as much as possible.

1. Staff will provide a draft of both the goal/objective language and preferred program for Water Commission consideration (enclosed).
2. At the Commission meeting, staff will make a brief presentation to provide context for recommendations.
3. Commission may then ask clarifying questions.
4. Commission may then ask for public comment on staff's recommendations.
5. Staff will facilitate deliberations on goal language and draft recommendations.
    a. The Commission will move through the goal/objective language and make suggested edits, if necessary. Once edits have been completed, the Commission may move acceptance of the goal language.
    b. The Commission will be asked for tentative agreement on Program C. With tentative agreement, the Commission can then add, subtract, or modify measures from/to Program C as desired to reach consensus on preferred program.
6. Each deliberative meeting will produce new draft recommendations. Subsequent deliberative meetings follow the same procedure until the draft goal/objective language and preferred program are adopted in their entirety.

Staff recommends that the Commission members prepare for the first round of deliberations by preparing suggested edits to goal/objective language and Program C (i.e., inclusion of additional measures, modification of measures, rejection of measures, etc.). Such preparation will hasten the deliberative process greatly.

Water Conservation Master Plan Goal/Objective

A preferred long-term conservation program cannot be identified in the absence of consensus or shared vision on the goals and objectives of the plan. The first step, therefore, should be to adopt goal language. Staff recommends the following language, which is based on comments from the Water Commission meeting on March 3, 2013 and is similar to goals stated in the City of Sacramento's 2013 Water Conservation Plan:

The City of Santa Cruz's stated objective is to develop a Water Conservation Master Plan to maximize water efficiency in the most equitable and cost-effective manner to the extent practical for implementation by City staff. Key components of the WCMP include:

- *Capitalize on opportunities to meet the future water needs of the City of Santa Cruz through cost-effective and sustainable water conservation and water use efficiency;*
- *Maintain the water savings already achieved and committed to in the future by the City of Santa Cruz; identify the best path to achieve those savings and to monitor commitments to the California Urban Water Conservation Council (CUWCC) Memorandum of Understanding Regarding Urban Water Conservation (MOU);*
- *Maintain long-term plan for complying with SB X_{7-7} and meeting the gallons per capita per day (GPCD) target by 2020;*

- *Demonstrate environmental stewardship and foster wise, innovative, responsible and efficient practices;*
- *Commit to and implement a water conservation program that further helps support the health of rivers, streams and groundwater integral to the region's quality of life and economy.*

Preferred Program of Measures

Staff recommends Program C to be implemented to meet these objectives. The plan is intended to be flexible and evolve with changing technologies, new or altered standards and codes, and participation rates. Program C consists of both passive (plumbing codes with no cost to the City) and active elements. Plumbing code measures account for 45% of the future conservation potential achieved through Program C. Recommended active measures fall within one of four categories: general measures, residential measures (indoor), commercial measures (indoor) and irrigation measures (outdoor). The following table summarizes the active elements of the recommended plan:

Table 4. Summary of Active Elements for Recommended Program C

General Measures	**Residential Measures (Indoor)**	**Commercial Measures (Indoor)**	**Irrigation Measures (Outdoor)**
Water Loss Control Program	Real Customer Water Loss Reduction – Leak Repair and Plumbing Emergency Assistance	CII MF High-Efficiency Washer Rebate	City Code Requirement for New Landscaping
Install AMI	Single Family Water Surveys	Promote Restaurant Spray Nozzles	Residential Single Family Landscape Conversion or Turf Removal (Current)
Water Budget Based Billing	High Efficiency Faucet Aerator/Showerhead Giveaway	High Efficiency Urinal Program	Residential Multifamily and CII Landscape Conversion or Turf Removal (Current)
Public Information Program Including Various Outreach & Education Approaches	Residential Ultra High Efficiency Toilet (UHET) Rebates	School Building Retrofit	Expand Outdoor Water Survey and Water Budgets
	Residential Washer Rebate (Intensive)	Customized Top Users Incentive Program	Rotating Sprinkler Nozzle Rebates
	Require High Efficiency Clothes Washers in New Development	CII and MF Surveys and Top Water Users Program (top customers from each customer category)	Residential Gray Water Retrofit (from Program D)
	Require Hot Water on Demand/Structured Plumbing in New Developments		Provide Rain Barrel Incentive
	Toilet Retrofit at Time of Sale		

The basis for staff's recommendation is derived from industry best practices and input and direction gathered during Water Commission meetings and the technical evaluation. Program C includes goals previously stated by the Water Commission during past meetings, with selection criteria including:

- **Water Savings –** based on the cost comparison to savings (Figure 4), the proposed program is estimated to save 532 MG (45% achieved through passive plumbing code) for net present value of $13 million. The results from the Baseline Survey and the DSS Model indicate that Program C optimizes conservation to the maximum extent practical.
- **Cost Effectiveness** – proposed program has a benefit/cost ratio of 0.79 (Table 6 below). The measures in Program C were combined to maximize conservation potential and achieve a breakeven point (a 1.0 benefit/cost ratio). Certain less cost-effective measures were included in the portfolio to maximize customer service and participation goals.
- **Implementation** – Program C maximizes conservation potential with 24 measures. Adding the additional measures for program D only achieves an estimated quantifiable savings of 39.8 MG per year (Table 6 below). Additional staffing and funding resources would be required to implement Program D.
- **Proven Technology** – the City's investment of ratepayer dollars is based on funding incentives for emerging proven technologies (e.g., rebates for weather-based smart irrigation controllers) and envisions an expanded education program to capture the additional goal of assisting customers to be as innovative and efficient as possible. This includes incentives for some less cost-effective measures to aid with increasing participation levels (such as rain barrels and graywater retrofits).
- **Minimization of Water Losses** – the City already has a low level of water loss and Program C includes more resources to further reduce minimize losses.
- **Affordability -** with a projected investment of $13 million between 2010 (base year of the DSS Model) and 2035, the program may be funded through future ratepayer revenue and new development fees. It is important to balance funding options from both sources to increase affordability and ensure that economic downturns, like the recent recession, do not undermine program funding and staffing resources.
- **Sustainability –** the proposed program pays specific attention to water-energy incentives to assist with meeting the City's greenhouse gas reduction and other broader sustainability goals (e.g., rebates for hot water on demand systems and clothes washers).
- **Customer Service –** both the education and incentive measures selected will support the City's objective of enabling customers to be more efficient. Focusing on residential and commercial water surveys, for example, although not cost effective, will help to maximize service to customers and customer implementation of appropriate incentives.
- **Environmental Stewardship –** the City has an ongoing need to support ecosystem water quality and quantity goals in North Coast streams, the San Lorenzo River and the Loch Lomond reservoir. Most of the new measures focus on outdoor water efficiency, which will help lower summer peak demand and aid in maintaining seasonal flows for fish reproduction.

Table 5. Incremental Program Savings and Costs

Marginal Cost Between Programs			
Conservation Program	Incremental Cost 30-year Present Value (PV) ($1000)	Incremental Savings, MGY	PV/MGY, $
Plumbing Code	$0	Baseline	$0
Program A	$5,768	138.87	$41,533
Program B	$2,578	105.90	$24,343
Program C	$5,080	45.76	$111,008
Program D	$8,022	39.80	$201,551

Table 6. Results of the Economic Analysis of Program Scenarios

Economic Analysis of Alternative Programs Santa Cruz, California									
Conservation Program	Water Utility Benefit-Cost Ratio	Community Benefit-Cost Ratio	2030 Water Savings (MGD)	2030 Water Savings (MGY)	2030 Indoor Water Savings (MGD)	2030 Outdoor Water Savings (MGD)	Total Water Savings as a Percentage of Total Production in 2030	Present Value of Water Utility Costs	Annual Average Water Utility Cost in First Five Years (2013 - 2017)
Without the Plumbing Code	NA	NA	0	0	0	0	0.00%	NA	NA
With the Plumbing Code	NA	NA	0.66	242	0.66	0	5.93%	NA	NA
Plumbing Code plus Program A	0.93	0.91	1.04	381	0.97	0.07	9.55%	$5,767,811	$0
Plumbing Code plus Program B	1.11	1.02	1.33	487	1.23	0.10	12.32%	$8,345,811	$483,236
Plumbing Code plus Program C	0.79	0.52	1.46	532	1.34	0.12	13.51%	$13,425,391	$681,458
Plumbing Code plus Program D	0.55	0.45	1.57	572	1.42	0.15	14.55%	$21,447,710	$805,531

Program C maximizes potential savings through 2035 by implementing a diverse and flexible portfolio of measures. It captures those measures that are practical for the City to pursue based on the highest cost effectiveness and water savings potential. The City's proposed Program C focuses on a blend of interdependent strategies, including education, incentives, and new mandates. Together these measures capitalize on the remaining conservation potential identified in the Baseline Survey for existing customers and demand high efficiency in new developments.

The following charts and spreadsheets are intended to be utilized during Water Commission deliberations on Program C.

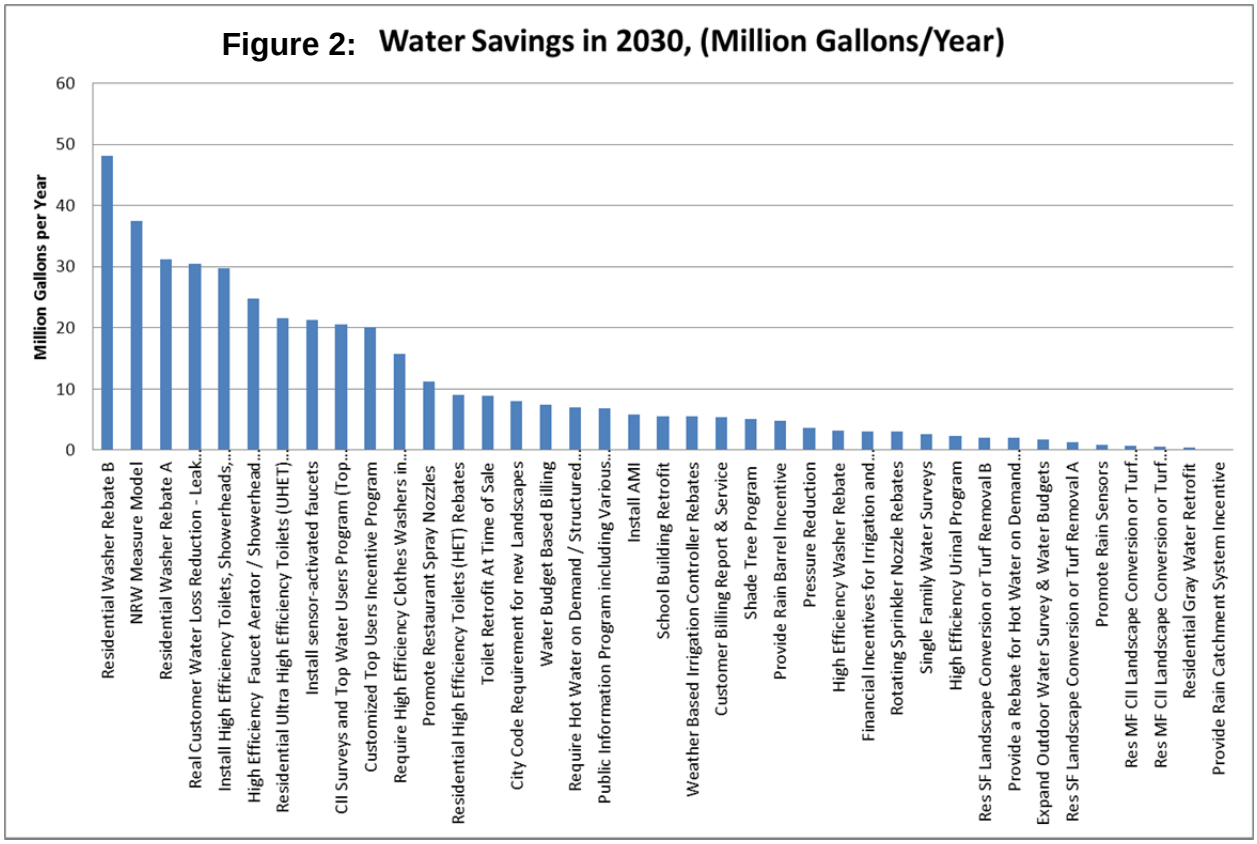


Figure 2: Water Savings in 2030, (Million Gallons/Year)
Million Gallons per Year
60
50
40
30
20
10
0
Residential Washer Rebate B
NRW Measure Model
Residential Washer Rebate A
Real Customer Water Loss Reduction - Leak...
Install High Efficiency Toilets, Showerheads,...
High Efficiency Faucet Aerator / Showerhead...
Residential Ultra High Efficiency Toilets (UHET)...
Install sensor-activated faucets
CII Surveys and Top Water Users Program (Top...
Customized Top Users Incentive Program
Require High Efficiency Clothes Washers in...
Promote Restaurant Spray Nozzles
Residential High Efficiency Toilets (HET) Rebates
Toilet Retrofit At Time of Sale
City Code Requirement for new Landscapes
Water Budget Based Billing
Require Hot Water on Demand / Structured...
Public Information Program including Various...
Install AMI
School Building Retrofit
Weather Based Irrigation Controller Rebates
Customer Billing Report & Service
Shade Tree Program
Provide Rain Barrel Incentive
Pressure Reduction
High Efficiency Washer Rebate
Financial Incentives for Irrigation and...
Rotating Sprinkler Nozzle Rebates
Single Family Water Surveys
High Efficiency Urinal Program
Res SF Landscape Conversion or Turf Removal B
Provide a Rebate for Hot Water on Demand...
Expand Outdoor Water Survey & Water Budgets
Res SF Landscape Conversion or Turf Removal A
Promote Rain Sensors
Res MF CII Landscape Conversion or Turf...
Res MF CII Landscape Conversion or Turf...
Residential Gray Water Retrofit
Provide Rain Catchment System Incentive

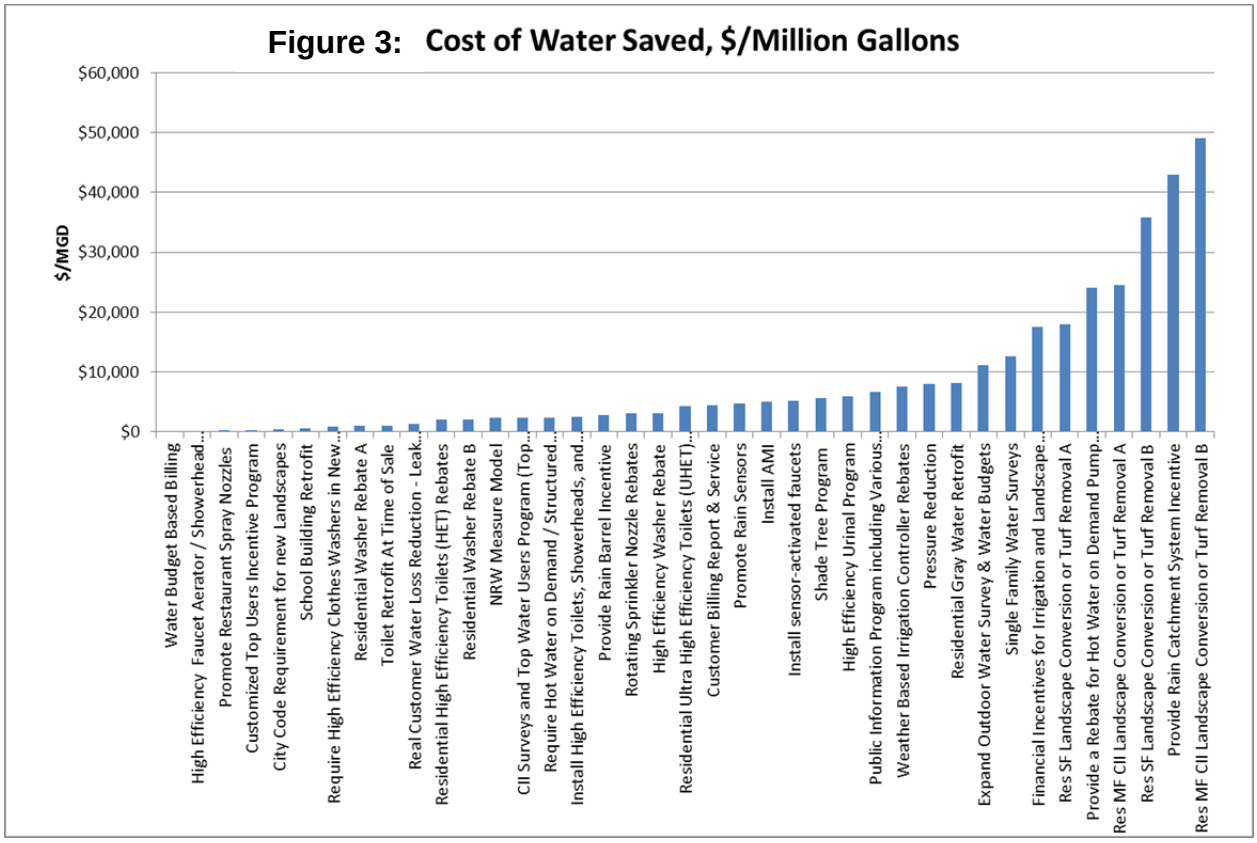


Figure 3: Cost of Water Saved, $/Million Gallons
$/MGD
$60,000
$50,000
$40,000
$30,000
$20,000
$10,000
$0
Water Budget Based Billing
High Efficiency Faucet Aerator / Showerhead...
Promote Restaurant Spray Nozzles
Customized Top Users Incentive Program
City Code Requirement for new Landscapes
School Building Retrofit
Require High Efficiency Clothes Washers in New...
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Toilet Retrofit At Time of Sale
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CII Surveys and Top Water Users Program (Top...
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Rotating Sprinkler Nozzle Rebates
High Efficiency Washer Rebate
Residential Ultra High Efficiency Toilets (UHET)...
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Single Family Water Surveys
Financial Incentives for Irrigation and Landscape...
Res SF Landscape Conversion or Turf Removal A
Provide a Rebate for Hot Water on Demand Pump...
Res MF CII Landscape Conversion or Turf Removal A
Res SF Landscape Conversion or Turf Removal B
Provide Rain Catchment System Incentive
Res MF CII Landscape Conversion or Turf Removal B

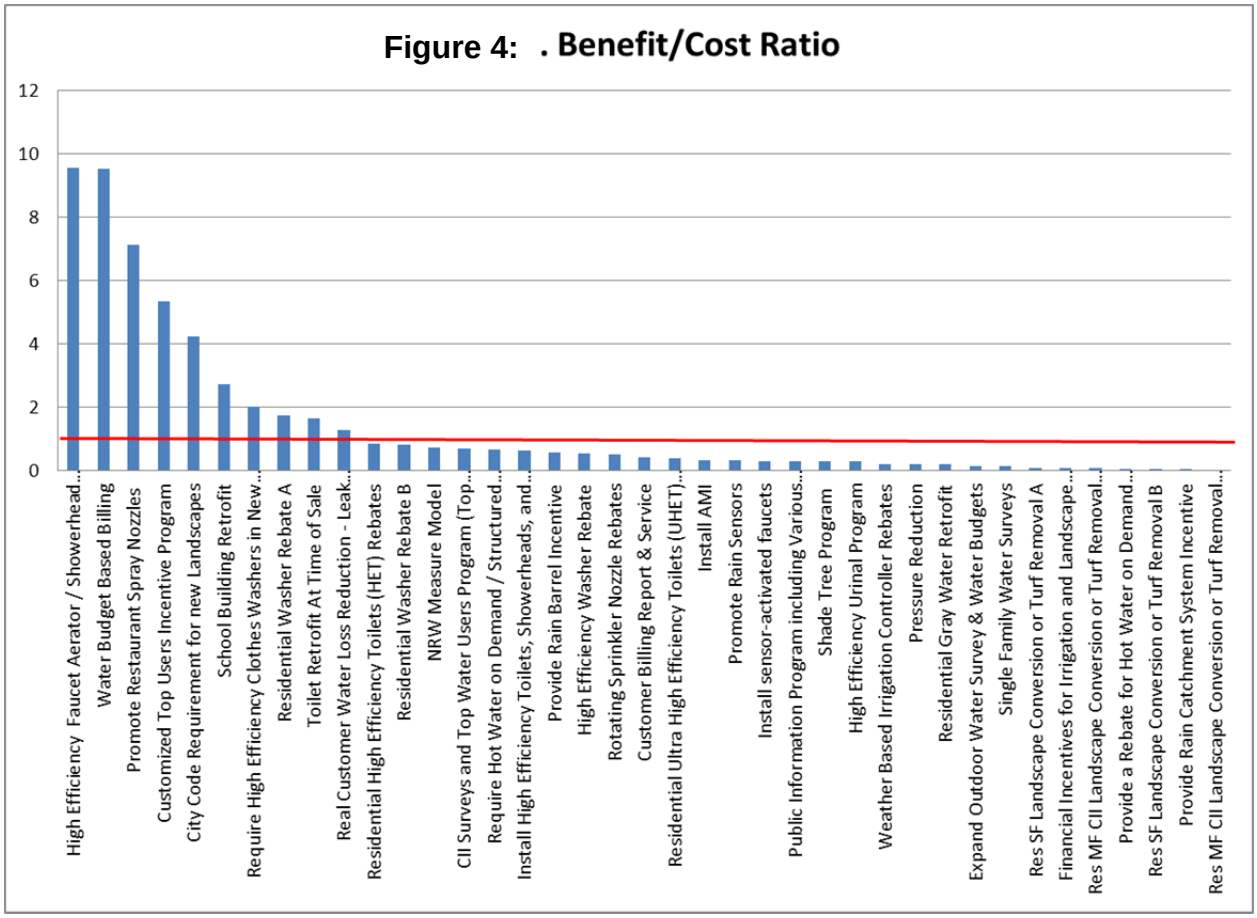


Table 7. Summary of Program Comparisons

Santa Cruz, California		
Conservation Program	**Present Value of Costs ($1,000)**	**2030 Water Saved (MGY)**
Plumbing Code	$0	242
Program A	$5,768	381
Program B	$8,346	487
Program C	$13,425	532
Program D	$21,448	572

Figure 5. Program Costs Compared to Savings

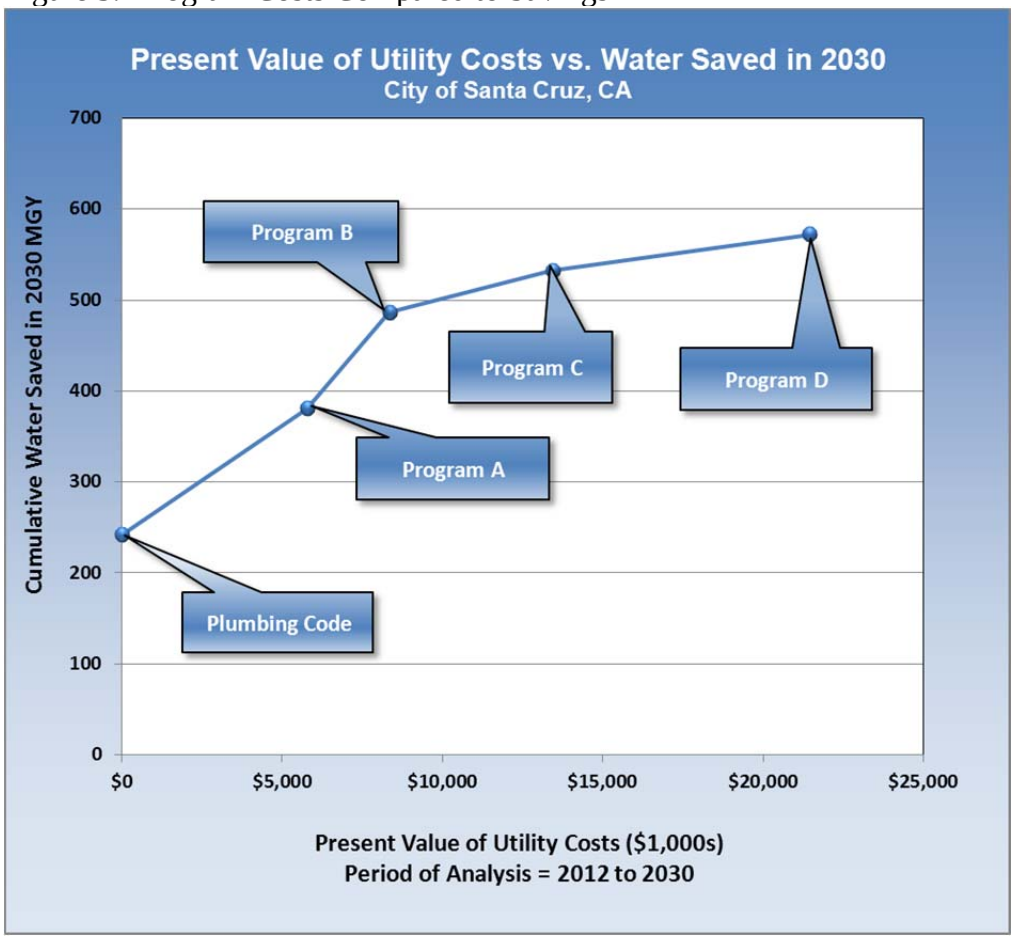


Table 8. Future Water Demand Projections

Water Demands with Conservation Savings Projections (MGY) Planned Population Growth Santa Cruz, California						
Water Demands (MGY)	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Water Demand without the Plumbing Code	3,517	3,690	3,861	3,969	4,075	4,076
Water Demand with the Plumbing Code	3,517	3,648	3,766	3,801	3,834	3,792
Water Demand with Plumbing Code and Program A	3,517	3,602	3,656	3,658	3,695	3,665
Water Demand with Plumbing Code and Program B	3,517	3,576	3,580	3,558	3,589	3,559
Water Demand with Plumbing Code and Program C	3,517	3,581	3,560	3,519	3,543	3,514
Water Demand with Plumbing Code and Program D	3,517	3,581	3,546	3,491	3,503	3,475
Population	91,291	94,694	98,097	100,441	102,784	102,784

Figure 6. Future Total Water Demand Projections (MGY)

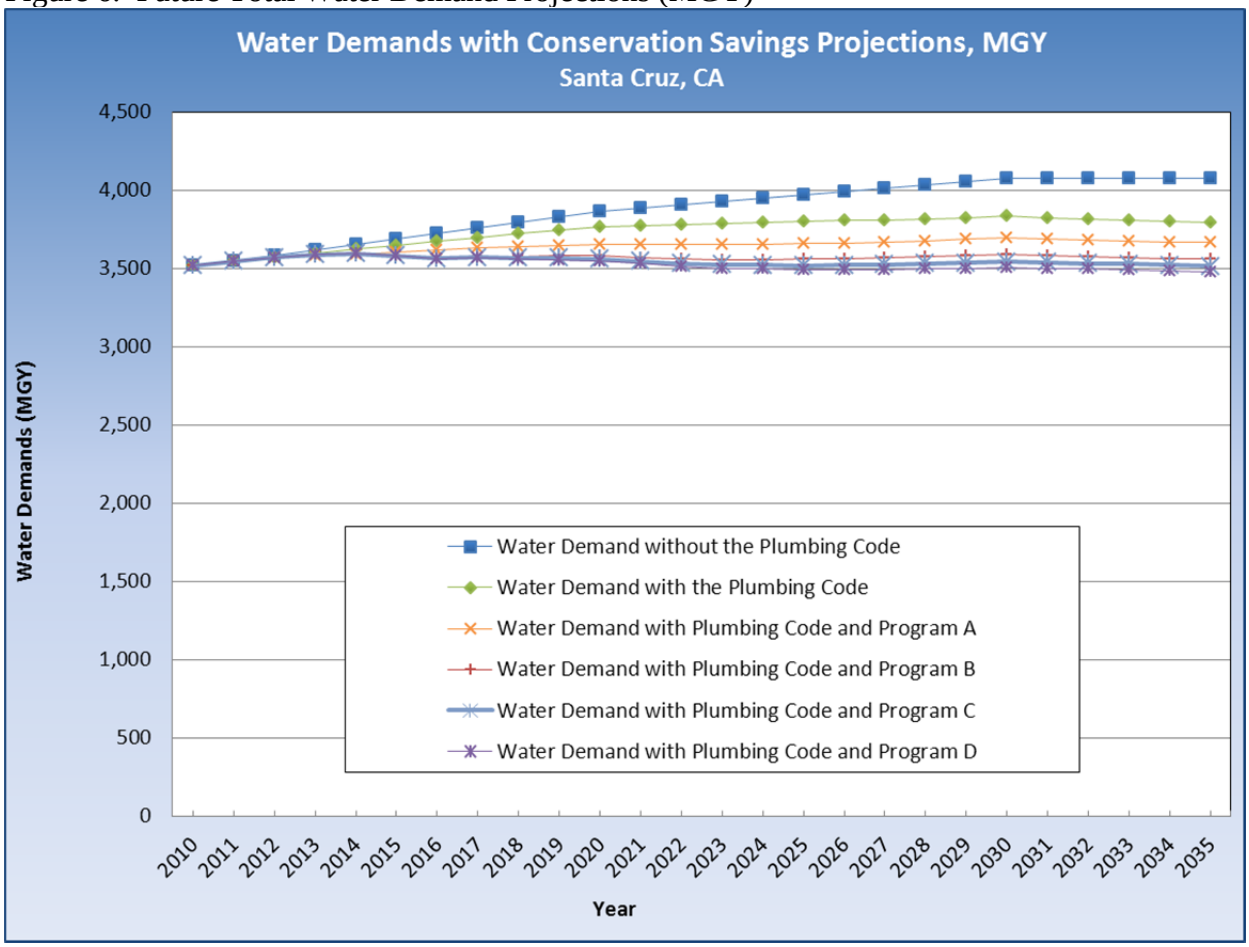
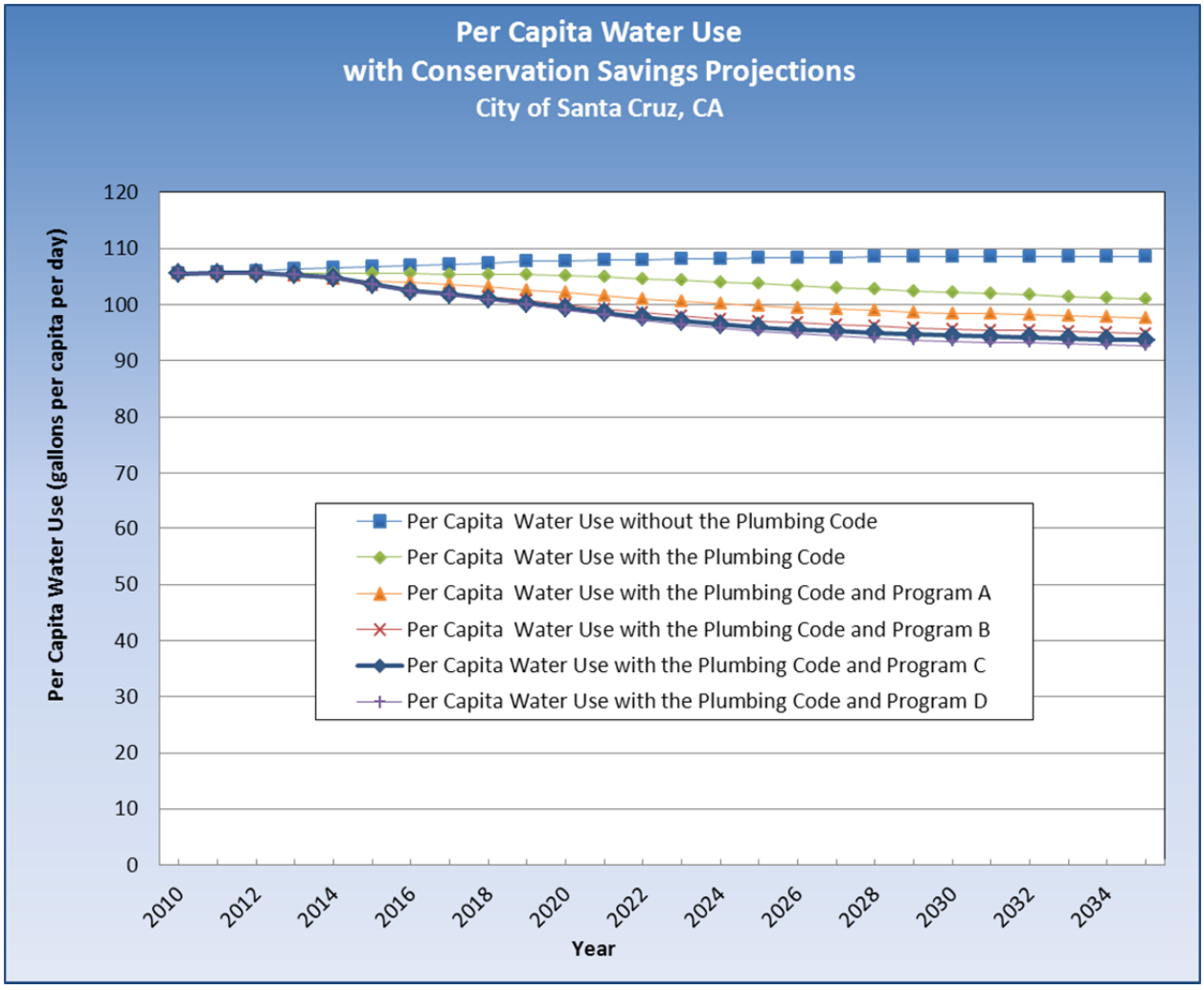


Table 9. Future Water Demand Projections

Per Capita Water Use with Conservation Savings Projections Santa Cruz, California						
Per Capita Water Use (gcd)	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Per Capita Water Use without the Plumbing Code	106	107	108	108	109	109
Per Capita Water Use with the Plumbing Code	106	106	105	104	102	101
Per Capita Water Use with the Plumbing Code and Program A	106	104	102	100	98	98
Per Capita Water Use with the Plumbing Code and Program B	106	103	100	97	96	95
Per Capita Water Use with the Plumbing Code and Program C	106	104	99	96	94	94
Per Capita Water Use with the Plumbing Code and Program D	106	104	99	95	93	93

Figure 7. Future Per Capita Water Demand Projections



Attachment: Conservation Programs and Measures, Santa Cruz, CA

Conservation Programs and Measures
Santa Cruz, California

Model No.	Measure Name	Program A	Program B	Program C	Program D	Water Savings MGY 2030	Benefit/ Cost Ratio	Cost of Water Saved $/MG	Why Selected for Program C?	Measure Description
1	Water Loss Control Program		X	**X**	X	38	0.73	$2,344	**Foundational BMP for California Urban Water Conservation Council (CUWCC). Assume expanded beyond the current efforts.**	City of Santa Cruz's water losses are relatively low. This measure would seek to maintain low non-revenue water rates through controlling both apparent and real water losses. This would be annual tracked through the AWWA Water Balance Water System Audit.
2	Install AMI		X	**X**	X	6	0.33	$4,967	**Expensive however useful for managing customer education on their individual demands and feedback on leaks to customer notifications.**	Install or retrofit system with AMI meters and associated network capable of providing continuous consumption data to Utility offices. Improved identification of system and customer leaks is major conservation benefit. Some of costs of these systems are offset by operational efficiencies and reduced staffing, as regular meter reading and those for opening and closing accounts are accomplished without need for physical or drive-by meter reading. Also enables enhanced billing options and ability to monitor unauthorized usage (such as use/tampering with closed accounts or irrigation if time of day or days per week are regulated). Customer service is improved as staff can quickly access continuous usage records to address customer inquiries. Optional features include online customer access to their usage, which has been shown to improve accountability and reduce water use. Assume seven year change-out would be a reasonable objective based on City's past experience with AMR installation program.
3	Water Budget Based Billing		X	**X**	X	7	9.52	$178	**Work with the WaterFluence budgeted accounts leverage the incentive to come at or under budget.**	Develop individualized monthly water budgets for all or a selected category of customers. Water budgets are linked to a rate schedule where rates per unit of water increase when a customer goes above their budget, or decreases if they are below their budget. Budgets typically are based on such factors as the size of the irrigated area and often vary seasonally to reflect weather during the billing period. These rates have been shown to be effective in reducing landscape irrigation demand (AWWARF Reports). This measure would require rate study and capable billing software.
4	Public Information Program including Various Outreach & Education Approaches	X	X	**X**	X	7	0.29	$6,679	**Foundational BMP for CUWCC. Assume expanded beyond the current efforts and staffing support.**	Comprehensive education and public awareness campaign that would evolve over the years and seek to drive participation in other conservation programs.This measure includes support for the Landscape Water Budget & Water Use Reports and additional overall customer service and administrative support not specific to any particular conservation measure across the Water Department.
5	Customer Billing Report & Service				X	5	0.42	$4,445	**Assume adding in smart software with custom billing report for customers education. Relatively expensive for billing reports for water savings estimated (less than 5% homeowner use).**	Detailed Water Billing Reports for Customers with neighborhood use comparisons and suggestions on customer specific conservation actions. Use or pattern after WaterSmart software's program.
6	Real Customer Water Loss Reduction - Leak Repair and Plumbing Emergency Assistance		X	**X**	X	30	1.29	$1,313	**Coordinated with Water Survey program to lower use.**	Customer leaks can go uncorrected at properties where owners are least able to pay costs of repair. These programs may require that customer leaks be repaired, but either subsidize part of the repair and/or pay the cost with revolving funds that are paid back with water bills over time. May also include an option to replace inefficient plumbing fixtures at low-income residences.
7	Single Family Water Surveys	X	X	**X**	X	3	0.14	$12,615	**Small benefit compared to other programs, however customer service benefit to have City staff provide on site recommendations.**	Indoor water surveys for existing single family residential customers. Target those with high water use and provide a customized report to owner. May include give-away of efficient shower heads, aerators, toilet devices. Would include a basic outdoor survey (look leaks, irrigation problems & schedule, plant information, etc.).
8	Pressure Reduction				X	4	0.20	$8,039	**High cost, low savings. Assume customers would pay for their own.**	Provide incentive to install pressure regulating valve on existing properties with pressure exceeding 80 psi.
9	High Efficiency Faucet Aerator / Showerhead Giveaway	X	X	**X**	X	25	9.55	$182	**Cost effective and high water savings (due to outcome from Baseline Survey).**	Utility would buy showerheads and faucet aerators in bulk and give them away at Utility office and/or community events.
10	Residential High Efficiency Toilets (HET) Rebates	X	X			9	0.86	$2,079	**Not included as switch to more efficient technology.**	Provide a rebate or voucher for the installation of a high efficiency toilet (HET). (Toilets flushing less than 1.28 gpf or less and include dual flush technology. Rebate amounts would reflect the incremental purchase cost and have been at least $150 for HET.
11	Residential Ultra High Efficiency Toilets (UHET) Rebates			**X**	X	22	0.38	$4,294	**Modify existing program for higher efficiency toilets.**	Provide a rebate or voucher for the installation of an ultra high efficiency toilet (UHET). (Toilets flushing less than 1.0 gpf or less and include dual flush technology. Rebate amounts would reflect the incremental purchase cost and have been at least $150 for UHET.
12	Install High Efficiency Toilets, Showerheads, and Faucet Aerators in Residential Buildings					30	0.63	$2,570	**Expensive and too high fixture saturation based on other selected conservation measures.**	Utility would subsidize installation cost of a new UHET purchased by the utility. Licensed plumbers, pre-qualified by the Utility would solicit customers directly. Customers would get a new UHET installed at a discounted price. Example: the Niagara City Smart Program
13	Residential Washer Rebate (Current)	X	X			31	1.74	$993	**Assume switch to higher rebate in next measure (with higher estimated participation).**	Provide a rebate for efficient washing machines to single family homes and in-unit condo/apartment complexes that do NOT have common laundry rooms. It is assumed that the rebates would remain consistent with relevant state and federal regulations (Department of Energy, Energy Star) and only offer the best available technology. This program would be similar the City's current program. Current rebate $100.
14	Residential Washer Rebate (Intensive)			**X**	X	48	0.82	$2,097	**Assume continue City existing program with a higher rebate.**	Provide a rebate for efficient washing machines to single family homes and in-unit condo/apartment complexes that do NOT have common laundry rooms. It is assumed that the rebates would remain consistent with relevant state and federal regulations (Department of Energy, Energy Star) and only offer the best available technology. This program would be similar the City's current program. Rebate would be modified to increase incentive for the most efficient washers.
15	Require High Efficiency Clothes Washers in New Development		X	**X**	X	16	2.03	$812	**Cost effective for relatively high water savings.**	Require developers to install an efficient clothes washer (meeting certain water efficiency standards, such as gallons/load), Building Department would be requested to ensure that an efficient washer was installed before new home or building occupancy. Verify that the Utility can enforce conditions of water service that may include efficiency standards for washing machines. Pattern after the North Marin Water District Program.
16	Provide a Rebate for Hot Water on Demand Pump Systems				X	2	0.07	$24,031	**Low savings, high cost measure excluded.**	Provide a rebate to equip homes with efficient hot water on demand systems. These systems use a pump placed under the sink to recycle water sitting in the hot water pipes to reduce hot water waiting times by having a an on-demand pump on a recirculation line. Can be installed on kitchen sink or master bath, wherever hot water waiting times are more than 1/2 minute. Requires an electrical outlet under the sink, which is not common on older home bathrooms but is on kitchen sinks.
17	Require Hot Water on Demand / Structured Plumbing in New Developments			**X**	X	7	0.66	$2,407	**More cost effective than other measures for estimated water savings.**	Work with developers and permitted remodels (of certain size or type) to equip new homes or buildings with efficient hot water on demand systems such as structured plumbing systems. These systems use a pump placed under the sink to recycle water sitting in the hot water pipes to the water heater or to move the water heater into the center of the house and/or reduce hot water waiting times by having a an on-demand pump on a recirculation line.
18	Toilet Retrofit At Time of Sale	X	X	**X**	X	9	1.64	$1,076	**Continue with City's program.**	Work with the real estate industry to require a certificate of compliance be submitted to the Utility that verifies that a plumber has inspected the property and efficient fixtures were either already there or were installed at time of sale.
19	CII MF High Efficiency Washer Rebate			**X**	X	3	0.54	$3,128	**More cost effective than other measures for estimated water savings.**	Provide a $400 rebate for the installation of a high efficiency commercial washer (HEW) in CII and MF Common Area Laundry. Rebate amounts would reflect the incremental purchase cost. Program will be shorter lived as it is intended to be a market transformation measure and eventually would be stopped as efficient units reach saturation. Currently, eligible for City's program, this is planned as an expanded measure.
20	Customized Top Users Incentive Program	X	X	**X**	X	20	5.35	$306	**Expand on City's survey program and target largest users with custom case-by-case incentives.**	After the free water use survey has been completed at site, the Utility will analyze the recommendations on the findings report that is provided and determine if site qualifies for a financial incentive. Financial incentives will be provided after analyzing the cost benefit ratio of each proposed project. Incentives are tailored to each individual site as each site has varying water savings potentials. Incentives will be granted at the sole discretion of the Utility while funding lasts.
21	Promote Restaurant Spray Nozzles		X	**X**	X	11	7.13	$245	**Follow-up incentive funding linked to the City's CII survey program.**	Provide free 1.3 gpm (or lower) spray nozzles and possibly free installation for the rinse and clean operation in restaurants and other commercial kitchens. Thousands have been replaced in California going door to door, very cost-effective because saves hot water.
22	CII & MF Surveys and Top Water Users Program (Top customers from each customer category)	X	X	**X**	X	21	0.69	$2,394	**Compliments Measure 20 above focused on canvassing sectors linked to "menu" of incentives.**	Top water customers from each category would be offered a professional water survey that would evaluate ways for the business to save water and money. The surveys would be for large accounts (such as, accounts that use more than 5,000 gallons of water per day) such as hotels, restaurants, stores and schools. Emphasis will be on supporting the top 25 users for each customer category.
23	High Efficiency Urinal Program	X		**X**	X	2	0.28	$5,968	**Follow-up incentive funding linked to the City's survey program.**	Provide a rebate or voucher for the installation of a high efficiency urinals. WaterSense standard is 0.5 gpf or less, though models flushing as low as 0.125 gpf (1 pint) are available and function well, so could be specified. Rebate amounts would reflect the incremental purchase cost and have been about $300.
24	Install sensor-activated faucets				X	21	0.31	$5,203	**Not cost effective given sensors are expensive, recommend aerator retrofit option to get down to 0.5 gpm.**	Consider direct install program, rebates or grants for installation of high efficiency (0.5 gpm) sensor faucet fixtures in all or selected high-use commercial or institutional buildings.
25	School Building Retrofit		X	**X**	X	5	2.73	$581	**Follow-up incentive funding linked to the City's survey program.**	School retrofit program wherein school receives a grant to replace fixtures and upgrade irrigation systems. Expand current City Program, pattern after EBMUD and MWD programs. Promote to schools for cash flow upfront. Review Generation Water program.
26	City Code Requirement for new Landscapes	X	X	**X**	X	8	4.24	$382	**Continue with City's program.**	Include less irrigation demand for new accounts due to more efficient landscape designs due to City Code (implementation of Statewide Model Landscape Ordinance)
27	Residential Single Family Landscape Conversion or Turf Removal (Current)	X		**X**		1	0.09	$17,920	**Continue with City's program.**	Provide a per square foot incentive for to remove turf and replace with low water use plants or permeable hardscape. Pattern after the City's current program. Rebate is currently $0.50 per square foot removed, and capped at an upper limit of $500 for single family residence.
28	Residential Single Family Landscape Conversion or Turf Removal (Intensive)				X	2	0.05	$35,839	**Assume too costly for low water savings.**	Provide a per square foot incentive for to remove turf and replace with low water use plants or permeable hardscape. Pattern after the City's current program. Rebate would be $1.00 per square foot removed, and capped at an upper limit of $1,000 for single family residence.
29	Residential Multifamily & CII Landscape Conversion or Turf Removal (Current)	X		**X**		0	0.07	$24,534	**Continue with City's program.**	Provide a per square foot incentive for to remove turf and replace with low water use plants or hardscape. Pattern after the City's current program. Rebate is currently $0.50 per square foot removed, and capped at an upper limit of $2,500 for multi-family or commercial residence.
30	Residential Multifamily & CII Landscape Conversion or Turf Removal (Intensive)				X	1	0.03	$49,069	**Assume too costly for low water savings.**	Provide a per square foot incentive for to remove turf and replace with low water use plants or hardscape. Pattern after the City's current program. Rebate is currently $1.00 per square foot removed, and capped at an upper limit of $5,000 for multi-family or commercial residence.
31	Expand Outdoor Water Survey & Water Budgets			**X**	X	2	0.15	$11,157	**Expand on and add in more budget to Measure 4 above.**	Outdoor water audits offered for existing large landscape customers. Normally those with high water use are targeted and provided a customized report on how to save water. All large multi-family residential, CII, and public irrigators of large landscapes would be eligible for free landscape water audits upon request. Tied to the Water Budget Program.
32	Financial Incentives for Irrigation and Landscape Upgrades				X	3	0.09	$17,578	**Low water savings, high cost. Assume promote through strong education outreach program.**	For SF, MF, CII, and IRR customers with landscape, provide a Smart Landscape Rebate Program with rebates for substantive landscape retrofits or installation of water efficient upgrades; Rebates contribute towards the purchase and installation of water wise plants, compost, mulch and selected types of irrigation equipment upgrades. Cost shared rebate for residential accounts and for commercial customers.
33	Weather Based Irrigation Controller Rebates				X	5	0.20	$7,568	**Low water savings, high cost. Assume promote through strong education outreach program.**	Provide a per station rebate (typically $25 per station) with a cost-share for the purchase of a weather based irrigation controller. These controllers have on-site weather sensors or rely on a signal from a central weather station that modifies irrigation times at least weekly. Requires local irrigation contractors who are competent with these products, so may require sponsoring a training program in association with this measure.
34	Rotating Sprinkler Nozzle Rebates			**X**	X	3	0.50	$3,051	**Assume cost effective for the water savings.**	Provide rebates to replace standard spray sprinkler nozzles with rotating nozzles that have lower application rates. Nozzles cost about $6 each.
35	Residential Gray Water Retrofit				X	0.4	0.19	$8,206	**Low water savings, high cost. Assume promote through strong education outreach program.**	Provide a workshop to support a Gray water Challenge similar to 2013 event that was modeled after Sonoma County program. Offer rebate to assist covering certain percentage of the cost to single family homeowners per year to install gray water systems. Package from local hardware stores had the primary components would be supported by City rebate.
36	Shade Tree Program				X	5	0.29	$5,619	**Low water savings, high cost. Assume promote through strong education outreach program.**	Provide incentives and information to promote shade tree planting as a water conservation measure. Potential for Water-Energy Partnership.
37	Promote Rain Sensors				X	1	0.33	$4,752	**Low water savings, high cost. Assume promote through strong education outreach program.**	Promote installation of rain sensor shut-off devices when installing new irrigation systems if a weather based controller is not being installed.
38	Provide Rain Barrel Incentive	X	X	**X**	X	5	0.58	$2,857	**Continue with City's program.**	Provide incentive for installation of rain barrels. This could involve rebates or bulk purchase and giveaways of barrels plus workshops on proper installation and use of captured rain water for landscape irrigation. Pattern after Honolulu Board of Water Supply program.
39	Provide Rain Catchment System Incentive				X	0	0.04	$42,988	**Low water savings, high cost. Assume promote through strong education outreach program.**	Provide incentive for installation of large rainwater catchment systems up to 2,500 gallons. This could involve rebates, grants and other cost share methods. Might require simultaneous installation of water efficient landscaping to assure that amount of water collected is capable of lasting into the peak irrigation season.

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WATER DEPARTMENT MEMORANDUM

DATE: March 31, 2014

TO: Water Commission

FROM: David Baskin & David Stearns

SUBJECT: WSAC Update

RECOMMENDATION: Receive oral report. Consulting Resources for WSAC Letter attached for your information.

CITY OF SANTA CRUZ

WATER DEPARTMENT
212 Locust Street, Santa Cruz, CA 95060 ♦ Ph: 831-420-5200

March 19, 2014

Dear Water Supply Advisory Committee Members

I am writing to you to provide an update on a key support issue related to the Water Supply Advisory Committee (WSAC). City staff has been working very hard to ensure that the time commitment you are all making to work on this important issue produces the best result that it can. One of the keys to achieving this outcome is providing the WSAC with appropriate technical support.

The City is recommending that a diverse team of consultants lead by Stratus Consulting from Boulder, Colorado serve as the WSAC's technical team. What this would mean is that technical and analytical work that the Committee agrees that it wants or needs to have done would be assigned to the Stratus team. Stratus would then be responsible for developing the requested information, products and analysis and delivering the results to the WSAC.

This recommendation is based on several key factors. First, the City has a specific and rigorous procurement process for hiring technical experts. The process goals are fairness, equal opportunity, compliance with state and municipal law requirements, consistent application of contracting tools, and ensuring that the individual or team selected can provide the necessary services at a competitive cost. Second, to achieve these objectives, the selection and contracting process unavoidably takes considerable takes time. Given the WSAC's timeline, we need to activate a technical team now in order to have it up and running in time to provide the analysis and answers you need.

The Stratus team is specifically being recommended because at about this time last year, the City issued a Request for Qualifications (RFQ) for a consultant to conduct an evaluation of the economic impacts of water shortages as compared to other water supply options (e.g., a regional desalination facility). Using the evaluation criteria included in the request for qualifications, a team led by Stratus Consulting was selected for the work.

Stratus Consulting (www.stratusconsulting.com) is an environmental and natural resources consulting group located in Boulder, Colorado. The Stratus team is interdisciplinary and includes the following participants:

- Robert Raucher, Founding Partner and Principal at Stratus;
- James Henderson, Managing Economist at Stratus;
- Janet Clements, Senior Economist at Stratus;
- Karen Raucher, Senior Associate at Stratus;
- Gary Fiske, President of Gary Fiske and Associates (www.confluence-water.com/home); and

- David Mitchell, Founder and Principal at M.Cubed (www.mcubed-econ.com/), a consulting firm specializing in economic analysis.

Stratus has not worked for the City before, although one member of the Stratus team, Gary Fiske, has worked for the City in the past.

Due to the City's commitment in August 2013 to undertake additional work on water conservation and seek additional public input on water supply alternatives, a contract for the work contemplated when the RFQ was issued was not finalized and the work never commenced. In the past few months, City staff came back to this study and began internal discussions about a potential scope for the work to reflect the broadening of the City's approach to a water supply solution and a need for a general economic impact study of water shortages. At this point, and in order to ensure that the Stratus team included the necessary expertise for the broader scope, City staff asked that an engineer familiar with regional issues and the City's system be added to the Stratus team. Todd Reynolds, Senior Engineer at Kennedy Jenks Consulting (www.kenedyjenks.com), was selected to join the Stratus team. Mr. Reynolds and his firm, Kennedy Jenks, have worked with the City in the past.

In early March, Stratus submitted a draft scope of work based on direction provided by City staff about the revised project. When staff received their draft scope, it became clear that there was a significant overlap between the their proposed work and the work the WSAC would be doing, especially related to the early phases of the Committee's work around the defining and agreeing on the "problem statement" that any additional water supply project or conservation programs would address.

Given the amount of time it takes to get a consultant on board and the pending commencement of the Committee's work when you'll soon need a technical team ready to go, the City will be tasking Stratus with the work of getting up to speed on system background and the issues that will be the focus of the problem definition phase of the work. This effort will greatly enhance the consulting team's ability to work effectively with the committee when the time comes.

In addition to the Stratus team, the WSAC will be supported by additional subject matter experts including the following:

- Water Conservation: Bill Maddaus and Lisa Maddaus of Maddaus Water Management (www.maddauswatermanagement.com/);
- Fisheries: Jeff Hagar, of Hagar Environmental Science; and
- Hydrology: Shawn Chartrand of Balance Hydrologicss, Inc. (http://www.balancehydro.com/).

If additional subject matter experts are needed, both Stratus and Kennedy Jenks have additional skill sets available that could be drawn on to address issues or questions that arise.

I expect that many members of the WSAC are already compiling mental lists of the issues that you will want the technical support team to take on. One important task for the Committee will be to prioritize those issues within realistic time and financial constraints. Your facilitators, Nicholas Dewar and Carie

Fox, anticipate that you will begin this prioritization in your first meetings. Please bring your "mental lists" with you to your Committee's meetings, where you can collaboratively develop the priorities for the consultants to follow.

On a personal note, I wanted to say that although I was not part of the selection process for the Stratus team, I am really pleased that Stratus was selected. I have known Bob Raucher and his firm for many years. I had several opportunities to work with him on a variety of projects in the mid and late 1990s while I was involved with the American Water Works Association Research Foundation (now the Water Research Foundation) and the American Water Works Association Water Utility Council. Both Bob and his firm have a strong and positive reputation in the water supply community and they are known for their quality work. I think the Stratus team and the other subject matter experts identified in this letter are a great match for task before the WSAC and will provide the Committee with the support you will need in the work ahead.

Sincerely,

Rosemary Menard
Water Director

WATER DEPARTMENT MEMORANDUM

DATE: February 26, 2014

TO: Water Commission

FROM: Water Director

SUBJECT: Agenda Strategy

RECOMMENDATION: That the Water Commission receive and take action to adopt or modify a strategy for items to be included on the Water Commission agenda over the next several months.

A proposed strategy for items to be included on future Water Commission agendas will be presented and discussed. The proposed strategy is designed to focus each meeting on one or two significant issues and to engage the Water Commission members in developing recommendations based on these discussions. This proposed strategy will necessarily mean that some items that the Water Commission has spent time on in the past will receive less attention this year.

WATER COMMISSION REPORT

DATE: March 3, 2014

TO: Water Commission

FROM: Water Director

SUBJECT: Water Commission Meeting Schedule and Upcoming Agenda Items (Subject to Change)

April 7, 2014

- Water Supply Outlook for 2014 Demand Season and Recommended Plan to Respond
- Long Term Conservation Master Plan Workshop II – Application of Decision Criteria to Conservation Program Options
- Draft Capital Improvement Program Budget
- WSAC Update
- Economic Analysis of No Project – Scope of Work

May 5, 2014

- Long Term Conservation Master Plan Workshop II – Recommended Plan
- Work Session on Fish Flows
- Operating Budget Overview
- WSAC Update
- Update on Recycled Water Transfer with Scotts Valley District and Pasatiempo Golf Course – Status Update

June 2, 2014

- To be determined

Unscheduled Items

- Water Rate Study

WATER DEPARTMENT
MEMORANDUM

DATE: April 7, 2014

TO: Water Commission

FROM: Nicole B Dennis
Principal Management Analyst

SUBJECT: Budget for Implementation of Stage 3Water Rationing

RECOMMENDATION: Receive information.

Attached are a staff report and resolution scheduled for the April 8, 2014 City Council meeting. The Director will discuss the contents in her oral report.

CITY COUNCIL
AGENDA REPORT

DATE: March 27, 2014

AGENDA OF:

DEPARTMENT: Water

SUBJECT: Budget for Implementation of Stage 3Water Rationing. (WT)

RECOMMENDATION: Resolution amending the Water Department's FY 2014 Budget to authorize expenditures in the net amount of $419,656 to address the financial impact of implementing Stage 3 water rationing.

BACKGROUND:

On February 25, 2014 City Council adopted a resolution declaring a water shortage emergency and calling for at least a 25% reduction in normal water usage beginning May 1, 2014. The Water Department has been working diligently since then to identify and develop the various resources and systems needed to implement Stage 3 rationing effectively over the next seven months through October 2014.

The City has not had to implement such drastic water restrictions since 1990, but we are fortunate to have as a guide for this work the Water Shortage Contingency Plan approved by Council in 2009 which incorporates the lessons learned from those earlier restrictions.

DISCUSSION:

We currently project needing additional resources in each of following sections of the Water Department to implement Stage 3 rationing. Note that all additional employees will be hired for no more than six month and costs include office or field equipment needed to support their work.

Custumer Service:
This section of the Water Department handles water account management and billing and will be the front line of communication with account holders about reduced water budgets and adjusted allocations. Anticipated resources needed are:

- informational mailings to account holders regarding water rationing,
- four (4) additional office employees to respond to increased customer communications and requests for adjusted allocations, and

- two (2) additional field employees to respond, in the community, to customer requests about their service account and meter operations, and to help customer identify possible leaks.

Conservation:
The Conservation section will be the center of outreach into the community about rationing and ways to conserve to meet reduced water budgets. Anticipated resources needed are:

- two (2) additional outreach employees to develop outreach materials, make presentations, staff information booths and events, and conduct customer water audits,
- two (2) field employees to respond to water waste complaints, patrol to enforce water conservation ordinances, educate customers on drought restrictions, and issue violations when customers do not respond to education,
- printed education and demonstration materials, and
- conservation devices for free distribution.

Administration:
Anticipated resources needed in Water Administration are:

- one (1) additional coordinator position is needed to assist in the development and subsequent management of the violation appeals process modeled after the processed used for parking citation appeals,
- one (1) administrative employees to provide support to the violation appeals process as well as increased public communications efforts, and
- critical public communications efforts including print and broadcast advertising.

Production:
As a result of reduced water flows, we expect to be treating water with higher turbidity. This has a significant impact on our water treatment system, requiring equipment changes, increased chemicals, and additional maintenance to ensure effective operations, including:

- relocating and adding aerators and other treatment equipment,
- increased costs for chemicals, electricity, and wastewater services, and
- one (1) additional plant mechanic to address increased maintenance needs caused by drought water conditions.

Distribution/Meter Shop:
We anticipate more calls to locate check and repairs water meters as customer focus more on their water usage.

- two (2) additional meter technicians to conduct increased water meter reads, repairs and resolve meter problems in a more timely manner,
- accelerating the purchase of two trucks ($48,000), originally scheduled to be purchased in FY 2015, to take advantage of competitive pricing and provide staff with trucks needed for drought-related meter work.

The estimated total cost of these additional resources is $1,033,011; with $699,656 of that total needed in the Water Department's FY 2014 budget and $333,355 in FY 2015. We must caution that the factors on which these estimates are based are not fixed, but will be affected by changing

drought conditions, human responses to necessary change, and other varying factors, that may make it necessary to return to Council with further adjustments.

The Department will cover a portion of the current FY 14 year costs by re-programing $280,000 in existing budget allocations for net cost of $419,656 in the current year. Drought planning has dominated much of the work in the Department during the last several months and work originally planned to be completed in FY 2014 was postponed allowing these budgeted amounts to be re-directed for drought related expenses. But additional allocation is still needed.

We also anticipate some revenue loss over the coming months as customers successfully conserve more water, and expect to use some of the current $2.4 million balance in the Water Rate Stabilization Fund to cover those lost revenues. We will return to Council at a later date to report on the specifics of that needed transfer.

Lastly, the Water Department would like to acknowledge the efforts of our other city department partners: Information Technology, Human Resources, Finance, and Public Works. Understanding the importance and timing of our efforts to implement a 25% reduction in water use, staff in these departments have shuffled their own priorities; worked long hours alongside Water Department staff; and have made a May 1st implementation date possible.

FISCAL IMPACT:

The cost of implementing Stage 3 water rationing over the next seven months through October 2014 is currently projected to at $1,033,011; with $699,656 of that total needed in the Water Department's FY 2014 budget and $344,581 in FY 2015. In FY 2014, the $651,656 will be offset by reallocating existing resources for a net cost in FY 2014 of $419,656.

Council approval is requested of a budget adjustment that transfers $280,000 within the existing FY 2014 Water Department budget, and allocates an additional $419,656 for Stage 3 water rationing. Additional allocations for next fiscal year will be incorporated into the FY 2015 Recommended Budget.

Prepared by:	Submitted by:	Approved by:
Nicole B. Dennis	Rosemary Menard	Martín Bernal
Pr. Management Analyst	Water Director	City Manager

Attachments:
Budget Adjustment

Water Department
Drought Response CY 2014

Fund	Dept.	Division	New Drought Activity	Object	Description	Section Name	Total Expense	FY 2014 Budget Adjustment	FY 2015 Recommended Budget
711	70	90	7199	51122	Temporary	Administration	$ 69,720	34,860	34,860
711	70	90	7199	52199	Prof. & Tech Services	Administration	$ 42,500	42,500	-
711	70	90	7199	52261	Eqpmt, Bldg, Land Rentals	Administration	$ 1,260	1,260	-
711	70	90	7199	52960	Advertising	Administration	$ 22,850	8,000	14,850
711	70	90	7199	54203	Computer - non capital	Administration	$ 6,200	6,200	-
711	70	90	7199	54205	Telecommunications Equip	Administration	$ 400	400	-
711	70	90	7199	54990	Misc. supplies and services	Administration	$ 1,000	1,000	-
711	70	90	7199	57401	Office furniture equipment	Administration	$ 6,000	6,000	-
							$ 149,930	100,220	49,710
711	70	92	7199	51122	Temporary	Customer Svc	$ 115,750	57,875	57,875
711	70	92	7199	52199	Prof. & Tech Services	Customer Svc	$ 6,500	5,000	1,500
711	70	92	7199	52227	Fuel Charges	Customer Svc	$ 4,800	2,000	2,800
711	70	92	7199	52261	Eqpmt, Bldg, Land Rentals	Customer Svc	$ 2,500	1,000	1,500
711	70	92	7199	52972	Printing Outside	Customer Svc	$ 9,011	6,011	3,000
711	70	92	7199	53101	Postage	Customer Svc	$ 3,500	3,000	500
711	70	92	7199	53118	Uniforms	Customer Svc	$ 280	280	-
711	70	92	7199	54203	Computer - non capital	Customer Svc	$ 6,000	6,000	-
711	70	92	7199	54205	Telecommunications Equip	Customer Svc	$ 800	800	-
711	70	92	7199	57401	Office furniture equipment	Customer Svc	$ 12,000	12,000	-
							$ 161,141	93,966	67,175
711	70	93	7199	51122	Temporary	Conservation	$ 88,000	38,000	50,000
711	70	93	7199	52199	Prof. & Tech Services	Conservation	$ 50,000	50,000	
711	70	93	7199	52227	Fuel Charges	Conservation	$ 4,800	2,000	2,800
711	70	93	7199	52261	Eqpmt, Bldg, Land Rentals	Conservation	$ 1,000	1,000	-
711	70	93	7199	52972	Printing Outside	Conservation	$ 10,000	6,000	4,000
711	70	93	7199	53101	Postage	Conservation	$ 5,000	3,000	2,000
711	70	93	7199	53114	Program Operating supplies	Conservation	$ 85,000	25,410	59,590
711	70	93	7199	54203	Computer - non capital	Conservation	$ 3,600	3,600	-
711	70	93	7199	54205	Telecommunications Equip	Conservation	$ 600	600	-
711	70	93	7199	57401	Office furniture equipment	Conservation	$ 6,000	6,000	-
							$ 254,000	135,610	118,390
711	70	95	7199	51122	Temporary	Production	$ 31,320	15,660	15,660

Water Department
Drought Response CY 2014

Fund	Dept.	Division	New Drought Activity	Object	Description	Section Name	Total Expense	FY 2014 Budget Adjustment	FY 2015 Recommended Budget
711	70	95	7199	52201	Water, sewer and refuse	Production	$ 19,000	19,000	
711	70	95	7199	52227	Fuel Charges	Production	$ 4,800	2,000	2,800
711	70	95	7199	53103	Chemicals	Production	$ 80,000	35,000	45,000
711	70	95	7199	53118	Uniforms	Production	$ 350	350	-
711	70	95	7199	53311	Electricity	Production	$ 16,000	7,000	9,000
711	70	95	7199	57990	Other capital outlay	Production	$ 218,330	218,330	-
							$ 369,800	297,340	72,460
711	70	96	7199	53103	Chemicals	Lab	$ 5,000	2,000	3,000
							$ 5,000	2,000	3,000
711	70	97	7199	51122	Temporary	Distr./Meter Shop	$ 39,640	19,820	19,820
711	70	97	7199	52227	Fuel Charges	Distr./Meter Shop	$ 4,800	2,000	2,800
711	70	97	7199	53118	Uniforms	Distr./Meter Shop	$ 700	700	-
711	70	97	7118	53118	Vehicle Equipment	Distr./Meter Shop	$ 48,000	48,000	
							$ 93,140	70,520	22,620
						Total	$ 1,033,011	699,656	333,355
711	70	90	7101	57402	Building Remodeling	Administration	$ (120,000)	(120,000)	-
711	70	90	7101	57401	Office furniture equipment	Administration	$ (30,000)	(30,000)	-
711	70	93	7104	52199	Prof. & Tech Services	Conservation	$ (120,000)	(120,000)	-
711	70	96	7107	521199	Prof. & Tech Services	Lab	$ (10,000)	(10,000)	-
							$ (280,000)	(280,000)	-
						Grand Total	$ 753,011	419,656	333,355

WATER DEPARTMENT MEMORANDUM

DATE: March 31, 2014

TO: Water Commission

FROM: L. Rossiter, Management Analyst

SUBJECT: Reimbursement for Capital Expenditures Prior to Debt Issuance.

RECOMMENDATION: Receive Information.

CITY COUNCIL
AGENDA REPORT

DATE: 03/31/14

AGENDA OF: 04/08/14

DEPARTMENT: Water

SUBJECT: Reimbursement for Capital Expenditures Prior to Debt Issuance. (WT)

RECOMMENDATION: Adopt a reimbursement resolution that will permit the City of Santa Cruz, Water Department to reimburse itself for capital expenditures incurred earlier than 60 days prior to the issuance of debt.

BACKGROUND: The Water Department's substantial fund balance has been drawn down significantly over the last several years to build essential capital improvements. With the added impact of current drought conditions, the issuance of debt is needed to provide resources required to construct necessary infrastructure rehabilitation and replacement projects through FY17.

DISCUSSION: The Department proposes to issue debt and use the proceeds to fund capital expenditures for improvement and rehabilitation and replacement projects for surface water source diversions, groundwater facilities, transmission and distribution pipelines, the Graham Hill Water Treatment Plant, and distribution storage projects. Funding from existing reserves and fund balances to complete these projects is not available and debt financing is a fiscally responsible and prudent way to make the necessary system investments and reinvestments and will take advantage of current market conditions which make the cost of borrowing very low due to historically low interest rates. Council adoption of this Resolution for Reimbursement will allow funds expended after the resolution passage date for FY14 projects to be reimbursed from proceeds resulting from a future bond sale. Without the resolution, the City is limited by the federal tax code to reimbursement of expenditures incurred 60 days or less prior to the issuance of the bonds. Adopting the resolution does not obligate the City to sell bonds. Rather, it puts the City in a position to reimburse current and anticipated near term capital expenditures from bond proceeds in the event the City does sell bonds.

FISCAL IMPACT: Approval of this action has no impact on the FY14 budget. In the absence of a reimbursement resolution, the City would be limited to reimbursing only expenditures incurred within 60 days of any issuance of commercial paper or bonds. This short time frame would preclude a significant amount of capital expenditures from being eligible to be funded from bond proceeds.

Submitted by:

Rosemary Menard
Water Director

Approved by:

Martín Bernal
City Manager

Attachments:
Resolution

RESOLUTION NO. NS-28,
RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SANTA CRUZ PERMITTING WATER DEPARTMENT REIMBURSEMENT FOR CAPITAL EXPENDITURES

WHEREAS, the City of Santa Cruz (the “CITY”) desires and intends to finance certain expenditures relating to improvements to source water diversions, groundwater facilities, groundwater facilities, the Graham Hill Water Treatment Plant, transmission and distribution pipelines and distribution storage facilities as detailed in Attachment A requiring the design, engineering, construction, and/or land acquisitions and to other related projects (each a "Project"); and

WHEREAS, the CITY expects to issue debt through the issuance of one or more tax-exempt bond issues to pay for these expenditures, which bond issues will have separate security sources of Water revenues, to finance the costs of the Project on a permanent basis (the "Debt"); and

WHEREAS, the CITY expects to expend moneys of the Water Enterprise Fund (other than moneys derived from the issuance of bonds) on expenditures relating to the costs of the Projects prior to the issuance of the Debt, which expenditures will be properly chargeable to a capital account under general federal income tax principles; and

WHEREAS, the CITY reasonably expects to reimburse certain of such capital expenditures with the proceeds of the Debt; and

WHEREAS, the CITY expects that the maximum principal amount of Debt which will be issued to pay for the costs of the Projects (and related issuance costs) will not exceed $45.6 million; and

WHEREAS, at the time of each reimbursement, the CITY will evidence the reimbursement in a writing, which identifies the allocation of the proceeds of the Debt to the CITY, for the purpose of reimbursing the CITY for the capital expenditures made prior to the issuance of the Debt; and

WHEREAS, the CITY expects to make reimbursement allocations no later than eighteen (18) months after the later of (i) the date on which the earliest original expenditure for the project is paid or (ii) the date on which the Project is placed in service (or abandoned), but in no event later than three (3) years after the date on which the earliest original expenditure for the project is paid; and

WHEREAS, the CITY will not, within one (1) year of the reimbursement allocation, use the proceeds of the Debt received by way of a reimbursement allocation in a manner that will result in the creation of replacement proceeds of the Debt or another issue (e.g., the CITY will not pledge or use the proceeds received for the payment of debt service on the Debt or another issue, except that the proceeds of the Debt can be deposited in a bona fide debt service fund); and

RESOLUTION NO. NS-28,

WHEREAS, this Resolution is intended to be a "declaration of official intent" in accordance with Section 1.150-2 of the Treasury Regulations.

NOW THEREFORE, BE IT RESOLVED by the City Council of the City of Santa Cruz that (i) all of the foregoing recitals are true and correct and (ii) in accordance with Section 1 .I 50-2 of the Treasury Regulations, the CITY declares its intention to issue Debt in a principal amount not to exceed $45.6 million, the proceeds of which will be used to pay for the costs of the Projects (and related issuance costs), including the reimbursement to the CITY for certain capital expenditures relating to the Projects made prior to the issuance of the Debt.

PASSED AND ADOPTED this 8th day of April, 2014, by the following vote:

AYES: Councilmembers:

NOES: Councilmembers:

ABSENT: Councilmembers:

DISQUALIFIED: Councilmembers:

APPROVED: _____
Mayor

ATTEST: _____
City Clerk Administrator

ATTACHMENT A: LIST OF POSSIBLE PROJECTS

1. Improvements to Source Water Diversions and Pipelines, such as:
    a. North Coast System Rehabilitation
    b. Newell Creek Dam Pipeline Rehabilitation
2. Improvements to Groundwater Facilities, such as:
    a. Beltz Well #4 Replacement with #12
    b. Beltz Treatment Plant Reclaim Tank Replacement
3. Improvements to Graham Hill Water Treatment Plant, such as:
    a. Filter Rehabilitation and Upgrades
    b. Water Treatment Upgrades
4. Improvements to Distribution System and Water Storage Tanks, such as:
    a. Bay Street Reservoir Replacement (Tank 2)
    b. Main Replacements
    c. Transmission System Improvements
    d. Recoat University Reservoir No. 2
    e. Recoat DeLaveaga East Tank
    f. Gravity Trunk Main Valve Replacement
    g. Recoat University Tank No. 5
    h. Water Meter Replacement
5. Improvements to Staff Facilities, such as:
    a. Watershed Resources Building