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

Water Department

WATER COMMISSION

Regular Meeting

February 04, 2019

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

*Denotes written materials included in packet.

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

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

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

Call to Order

Roll Call

Election of Officers

Statements of Disqualification - Section 607 of the City Charter states that ...All members present at any meeting must vote unless disqualified, in which case the disqualification shall be publicly declared and a record thereof made. The City of Santa Cruz has adopted a Conflict of Interest Code, and Section 8 of that Code states that no person shall make or participate in a governmental decision which he or she knows or has reason to know will have a reasonably foreseeable material financial effect distinguishable from its effect on the public generally.

Oral Communications - No action shall be taken on this item.

Announcements - No action shall be taken on this item.

Consent Agenda (Pages 1.1-3.4) Items on the consent agenda are considered to be routine in nature and will be acted upon in one motion. Specific items may be removed by members of the advisory body or public for separate consideration and discussion. Routine items that will be found on the consent agenda are City Council Items Affecting Water, Water Commission Minutes, Information Items, Documents for Future Meetings, and Items initiated by members for Future Agendas. If one of these categories is not listed on the Consent Agenda then those items are not available for action.

1. City Council Actions Affecting the Water Department (Pages 1.1 – 1.2)

   Accept the City Council Actions Affecting the Water Department.

2. Water Commission Minutes from January 7, 2019 (Pages 2.1 – 2.7)

   Approve the January 7, 2019 Water Commission Minutes.

3. 2nd Quarter FY 2019 Financial Report (Pages 3.1 – 3.4)

   Accept the 2nd Quarter FY 2019 Financial Report.

Items Removed from the Consent Agenda

General Business (Pages 4.1 – 4.8) 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.

4. 2019 Water Supply Outlook – First Look (Pages 4.1 – 4.8)

   Receive and accept the information on the 2019 Water Supply Outlook.

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

5. Santa Cruz Mid-County Groundwater Agency

6. Santa Margarita Groundwater Agency

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

Information Items

Adjournment

WATER COMMISSION
INFORMATION REPORT

DATE: 1/30/2019

AGENDA OF: February 4, 2019

TO: Water Commission

FROM: Rosemary Menard, Water Director

SUBJECT: City Council Actions Affecting the Water Department

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

BACKGROUND/DISCUSSION:

January 22, 2019

Loch Lomond Recreation Area Fees (WT)

Resolution No. NS-29,482 was adopted revising the Loch Lomond Recreation Area fee schedule to add a wedding venue fee, add a trailer-mounted boat storage fee, and rescind Resolution No. NS-29,353.

Graham Hill Water Treatment Plant Flocculator Replacement Project – Award of Professional Service Agreement (WT)

Motion carried authorizing the City Manager to execute an agreement in a form to be approved by the City Attorney with Kennedy/Jenks Consultants (San Francisco, CA) in the amount of $208,284 for design and construction support services.

Newell Creek Dam Spillway Bridge Replacement Project - NOC (WT)

Motion carried to accept the work of Granite Rock Company (San Jose, CA) as complete per the plans and specifications and authorizing the filing of a Notice of Completion for the Newell Creek Dam Spillway Bridge Replacement Project.

Water Street Water Main Replacement Project – Approval of Plans and Specifications and Authorization to Advertise for Bids and Award of Contract (WT)

Motion carried to approve the Plans, Specifications and Contract Documents for the Water Street Water Main Replacement Project, and authorize staff to advertise for bids and award the contract in a form to be approved by the City Attorney. The City Manager is hereby authorized and directed to execute the contract as authorized by Resolution No. NS-27,563.

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

ATTACHMENTS: None.

Water Department

Water Commission
7:00 p.m. – January 7, 2019
Council Chambers
809 Center Street, Santa Cruz

Summary of a Water Commission Meeting

Call to Order: 7:01 PM

Roll Call

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

Absent: None

Staff: R. Menard, Water Director; J. Becker, Finance Manager; C. Coburn, Deputy Director/Operations Manager; K. Crossley, Senior Civil Engineer; R. Ernst, T. Goddard, Conservation Manager; Assistant Engineer II; N. Haley, Assistant Engineer II; T. Kihoi, Associate Professional Engineer; H. Luckenbach, Deputy Director/Engineering Manager; J. Martinez McKinney, Associate Planner II; J. Martinez-McKinney; S. Easley Perez, Associate Planner II; I. Rivera, Associate Professional Engineer; L. Van Der Maaten, Associate Professional Engineer; M. Zeman, Professional Engineering Associate; K. Fitzgerald, Administrative Assistant III

Others: 4 members of the public.

Presentation: None

Statement of Disqualification: None.

Oral Communications: Scott Ruble of the Santa Cruz Public Works Department presented the Sustained Bar Built Estuary project. The Water Department has been involved in coordinating with Public Works on this project due to the impacts on the quality and flow management of the San Lorenzo River.

Announcements: None

Consent Agenda

1. City Council Actions Affecting Water

Commissioner Schiffrin moved the Consent Agenda as amended. Commissioner Baskin seconded.

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

Items removed from the Consent Agenda

2. Water Commission Minutes from December 3, 2018

Commissioners suggested expanding the wording on the discussion of the "Social Cost of Carbon" on page 2.4.

Commissioner Schiffrin moved the Minutes as amended. Commissioner Engfer seconded.

VOICE VOTE: MOTION CARRIED
AYES: All
NOES: None
ABSTAIN: D. Schwarm due to absence

3. 1st Quarter FY 2019 Financial Report

Is the FY 2019 Cost of Service Projection considered FY 2019 revenue budget or Cost of Service.

- The FY 2019 Cost of Service Projection is projected revenue that is based on the cost of service analysis that was conducted in FY 2016. Staff can rename this as projected revenue on future reports for clarification.

Has the actual total cost of the Newell Creek Dam Inlet/Outlet Pipeline been determined?

- The final cost for this project is still being determined; however, the latest analyses estimate that the cost is over $70 million.
- The difference between the project cost included in the Quarterly Financial Report and what Commissioners have seen in earlier Council items related to the cost of the Newell Creek Inlet/Outlet project is that the numbers in the FY 2019 CIP for this project, which are what are included in the Quarterly Financial Report, have been refined as a result of Project Validation work and moving to 50% design, both of which have occurred since mid-summer 2018.

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

Commissioner Schiffrin moved the staff recommendation on Item 3. Commissioner seconded.

No public comments were made.

General Business

4. Presentation of 2018 Capital Investment Projects

Ms. Menard introduced Ms. Luckenbach for the presentation of the 2018 Capital Investment Projects. The presentation provided a review of the main projects in various stages of design, development, and completion during the year 2018, and gave a preview of the work the Water Department will continue to pursue in 2019.

Mr. Matt Zeman presented the completion of the Felton Diversion Rubber Bladder Replacement project.

Are other available technologies considered when a major replacement needs to be done?

- Other options for this replacement were considered but the rubber bladder was the most cost effective and better suited the needs of the dam.

Was the concrete surrounding the Felton Diversion Dam also replaced?

- No, the condition of the concrete was evaluated and it was found to be in good shape and was only painted over to provide additional protection.

Can condensate be easily removed from the rubber bladder?

- There is no existing drip line; however, some condensate does drip into the collection pipe which washes out on its own.

Ms. Leah Van Der Maaten presented the Newell Creek Dam Inlet/Outlet Replacement project.

Are the technical advisors on this project from AECOM as well?

- No, the three technical advisors are either working independently or with another firm.

How will future weather conditions and reservoir levels affect the construction schedule at the Newell Creek Dam?

- Staff is still conducting analyses to determine what approaches will be most practical to address differing conditions over the two + years of construction.

Why is the aerator at the Newell Creek Dam being replaced twice?

- The current aeration system at the dam is in need of immediate replacement. The thought process behind installing the new aerator now and then moving it later is that effective aeration must be maintained to help manage the water quality in the reservoir, especially during algae blooms. The system can be readily moved when the Newell Creek Dam Inlet/Outlet project is complete.

Will sections of the Newell Creek pipeline that are being replaced be relocated during the construction?

- There is a pipeline assessment that is currently getting underway for the entire Newell Creek Pipeline which will provide more information on the condition and location of the pipeline. The part of the Newell Creek Pipeline that is being replaced as part of the Newell Creek Dam Inlet/Outlet project is being slightly realigned to protect it from the impacts of heavy equipment during construction.

Ms. Jessica Martinez-McKinney presented the planned work at the Laguna Creek and Majors Creek Diversions.

Will the Laguna Creek diversion rehabilitation increase the water supply?

- It will likely not increase the water supply. The objective of rehabilitating the diversion is to improve the infrastructure to make management of the diversions simpler and less subject to problems when the weather conditions are challenging.

Has a cost benefit analysis been performed on the value of investing in the rehabilitation of the Laguna Creek diversion?

- No, not yet. That will be part of the alternatives evaluation which includes a no-project alternative despite the significant fish flow requirements. Laguna Creek is an important water supply source, especially during this time of year when there is more water available that does not have to be allocated for fisheries.

How are regulatory agencies going to be involved in the analysis of the technology alternatives at Laguna Creek?

- Staff will likely consult with regulatory agencies on which alternative is more likely to be permitted, but there are no plans to directly involve any agency in the analysis.

Mr. Taylor Kihoi presented the University Tank No. 5 Replacement Project.

How have the recent steel tariffs impacted the steel plate costs for the U5 tank construction?

- Staff was concerned that the steel tariffs would impact the cost of this project. However, whether due to the timing of the procurement, or a surplus in available steel, the current tariffs on steel did not appear to affect the cost based on the initial engineering estimate.

How does the new construction plan address future surface and infrastructure corrosion within the tank?

- The design of the tank roof and interior included specifications that will prevent the effects of corrosion and provide for easier long term maintenance.

Mr. Isidro Rivera presented the Water Transfers with Soquel Creek Water District (the District) and Aquifer Storage and Recovery.

Will the District continue to run the O'Neill well during the water transfer pilot period?

- The plan for the intertie pilot is to have the wells in the District's pilot area off. However, one goal of the pilot is to better understand when and why the wells turn on.

What concern caused the District to turn on their O'Neill Ranch well a few weeks after the intertie was turned on?

- The District was taking steps to both freshen up the well for potential use in the event the City had to shut off the intertie for a period of time as well as see how the well could function with the water transfer running at the same time.

How long will pilot testing be conducted at Beltz 12 before we can determine if ASR can be done in that region?

- We're anticipating 3 injection/storage/recovery cycles which should be completed with the recovery of water injected in late spring before mid-summer. The data from this pilot will significantly inform the feasibility of ASR in that region. However, groundwater monitoring will also be required. And, additional pilot testing may be required depending upon the results of current testing.

How many total pilot wells will be evaluated in the Santa Margarita basin and Mid-County basin in order to come to a decision on the feasibility of ASR?

- Originally, two pilot wells were planned for the Mid-County basin and one in the Santa Margarita basin.

Mr. Ryan Ernst presented the River Bank Filtration Study. This study will be examining the feasibility of improving water source quality through existing surface water rights along the San Lorenzo River.

Have horizontal well collectors been considered for the well site?

- Yes, horizontal well collectors are being considered, however more comprehensive data needs to be collected from the study to determine what type of technology would best suit the San Lorenzo River.

Will water tracer testing occur as part of the study?

- Yes. Surface water and groundwater have different chemistries so water quality testing would be extensive.

What environmental permitting is required for the River Bank Filtration Study?

- For this study, a notice of exemption for CEQA is in the process of being filed, as well as a Section 1602 with the California Dept. of Fish and Wildlife. This study is in the early phases so a work plan is still being developed.

What are the estimated costs for this Study?

- The current estimate is approximately $1.1 million based on the feasibility analysis that was conducted and does include the construction of two test wells that can be permitted to be permanent wells.

Would property rights or property acquisitions have to be made in order to construct test wells?

- Yes.

Ms. Nicole Haley presented the Water Main Replacement projects. The presentation included the completion of the River Street Main Replacement as well as work on major water mains completed by the Water Distribution section.

Did Water department staff construct the River Street Main replacement?

- No, the construction was done by the contractor, Anderson Pacific Engineering.

Is potholing a part of the main design that will go out to bid?

- Typically, potholing is the contractor's responsibility during the construction.

What is potholing?

- Potholing is a process where small portions of the pavement are excavated to understand the conditions and location of existing utilities under the surface. It is done to minimize the amount of pavement that is removed around existing utility lines and is less costly than digging up larger areas and then deciding that the area has issues that need to be accommodated while installing new pipe.

Ms. Menard provided an overview of the next steps on CIP work and budgetary reports that staff is preparing for the coming year, as well as the water supply outlook.

Commissioners commented positively on the Department's efforts to bring improved and informative presentations to the Commission.

Is the cost estimate to replace the Coast Pump Station Line higher because a "cure in place" approach did not attract bidders?

- Likely yes, although a full cost estimate was not conducted for a cure in place repair. The current design will provide a new pipeline that is more resilient long term.

Will all of the Graham Hill Water Treatment Plant upgrades be included in the next budget?

- Yes.

One member of the public spoke.

Subcommittee/Advisory Body Oral Reports

5. Santa Cruz Mid-County Groundwater Agency

Saltwater intrusion and the impacts to surface water of pumping along creeks, primarily Soquel Creek, are the main topics that are being discussed among agencies as part of implementing the Groundwater Sustainability Act.

6. Santa Margarita Groundwater Agency

New representatives from San Lorenzo Valley Water District have joined the board. The agency has launched an outreach and education plan with three events scheduled on Saturdays at the Felton Community Hall from 9:00 am to 1:00 pm on the following topics:

January 12th: Land Use and Water: How Much Does Growth Matter?
February 9th: Water Budgets: How Do We Balance All Needs?
March 9th: Managing Groundwater: How Can We Prepare for an Uncertain Future?

Director's Oral Report: Ms. Menard reported that as of today, there are 100 million gallons of additional water in the Loch Lomond reservoir as a result of the recent rain storms.

Adjournment Meeting adjourned at 9:35 PM

Respectfully submitted,

Katy Fitzgerald
Staff

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WATER COMMISSION
INFORMATION REPORT

DATE: 1/30/2019

AGENDA OF: 2/4/2019

TO: Water Commission

FROM: Nicole Dennis, Principal Management Analyst

SUBJECT: 2nd Quarter FY 2019 Financial Report

RECOMMENDATION: Accept the 2nd Quarter FY 2019 Financial Report.

BACKGROUND: On June 6, 2016, the Water Commission approved the Water Department's Long Range Financial Plan (LRFP) which created a framework to ensure financial stability and maintain the credit rating needed to debt finance major capital investments planned for the utility. The LRFP includes financial targets for debt service coverage ratio (1.5x), a combined 180 days cash on hand, $3.1 million in an Emergency Reserve, and a Rate Stabilization reserve. The reserve targets for FY 2019 year end are displayed in the center of the attached report.

The data in the Quarterly Financial Reports provides a snapshot in time. The City operates on a fiscal year basis and allows transactions to post to any period of the year until the books are formally closed after June 30th. The attached report is a snapshot of the transactions posted within the first six months of FY 2019. The projected sales (shown red in the bottom chart on page 1) is based on the conservative assumption of 2.5 BGY of water sold.

DISCUSSION:
The $2.7 million difference between the Adjusted Budget and the Adopted Budget is mainly due to encumbrances or planned purchases/projects in FY 2018 not completed by the end of the fiscal year. Those dollar amounts are rolled into the next year and appear in the FY 2019 Adjusted Budget. Additionally, $17,000 was moved from Services, Supplies and Other to Capital Outlay to purchase fixed assets from the correct account.

Expenditures continue to trend below budget mostly in the categories of Services, Supplies and Other. Not all expenditures are consistently purchased each month so actuals can vary in these accounts. Personnel costs are roughly on budget.

<u>Revenues</u>
Revenues are tracking approximately 5% below projections at the halfway point of the fiscal year. In December, water sales did track a bit higher than projections. Staff will continue to

closely monitor water sales to discern trends to inform the development of FY 2020 water sales projections.

CIP Projects

On the CIP Projects Overview page, the graphic was improved to show how projects are moving towards completion. The 2nd Quarter Report also highlights two new projects which have been added:

c701906	Felton Diversion Pump Station Assessment	This project originated as an assessment of the entire facility with the potential for incremental rehabilitation projects. The first improvement to the site was the replacement of the rubber bladder dam which was separated into its own CIP project (c701602) and recently completed. This project will, again, focus on the ongoing assessment of the facility.
c701907	Facility & Infrastructure Improvements	This project is the outgrowth of c700025, Graham Hill WTP Upgrades. C700025 was the project that funded the planning work where as c701907 GHWTP FIP is the result of that planning and will result in a scheduled implementation of treatment plant improvement projects.

FISCAL IMPACT: None

PROPOSED MOTION: Accept the un-audited 2nd Quarter FY 2019 Financial Report.

ATTACHMENTS: 2nd Quarter FY 2019 Financial Report

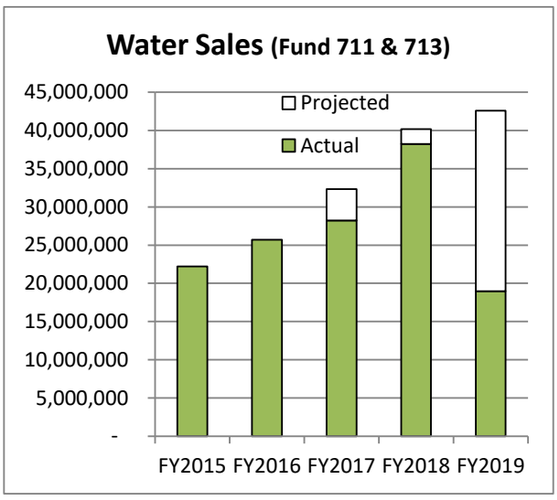
Water Department
2nd Quarter FY 2019 Financial Report
Preliminary, Unaudited, as of 12/31/2018

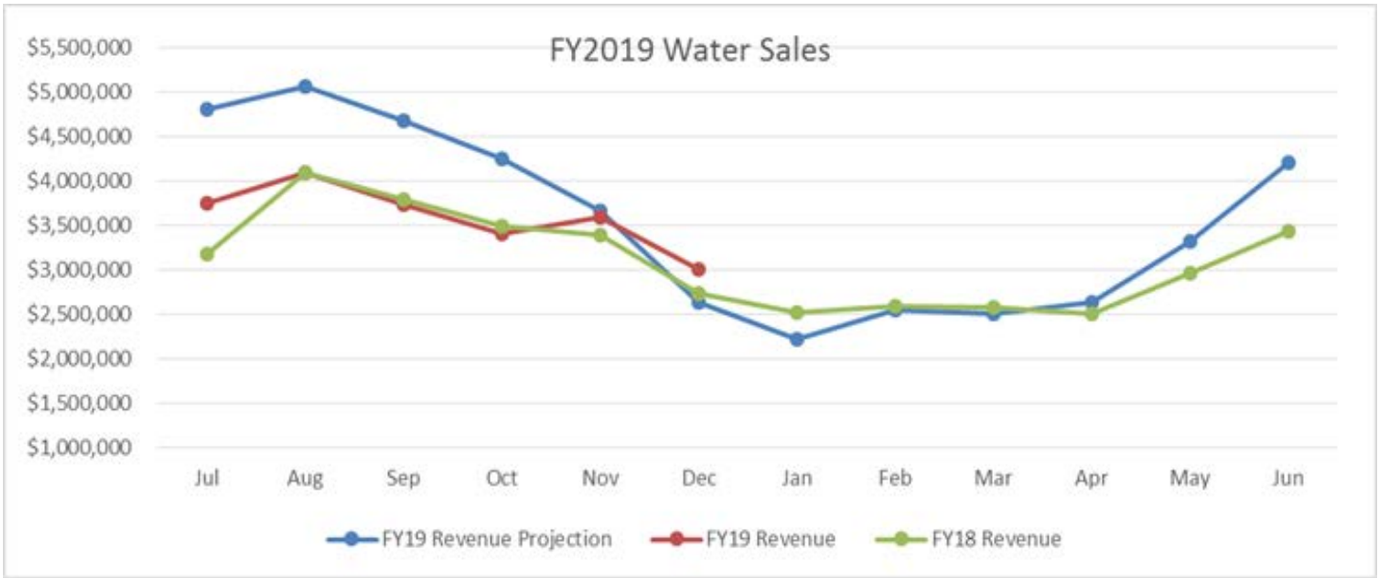
Financial Status for Enterprise Operation Fund (Fund 711) & Rate Stabilization Fund (Fund 713)

	FY 2019 Ado Budget	FY 2019 Adj Budget	Actual YTD Thru 12/31/18	YTD % of Budget
Revenues				
Fund 711 - Water Operations	43,885,642	44,057,892	19,717,672	45%
Fund 713 - Rate Stabilization	3,342,244	3,365,694	1,538,175	46%
Total Revenues	**47,227,886**	**47,423,586**	**21,255,847**	**45%**
Expenditures (Fund 711 Only)			-	
Personnel	14,724,425	14,724,425	7,241,882	49%
Services, Supplies, and Other	15,051,179	16,247,913	5,861,082	36%
Capital Outlay	438,000	593,534	136,950	23%
Debt Service	2,535,842	2,535,842	773,358	30%
Total Expenditures	**32,749,446**	**34,101,714**	**14,013,272**	**41%**
NET Total	14,478,440	13,321,872	7,242,576	

Fund Balances

	Balance as of 12/31/18	Target for FY end
711- Enterprise Operations	7,980,903	7,741,000
713- Rate Stabilization	7,241,038	9,020,000
715-System Development Charges	3,750,586	N/A
716- 90-Day Operating Reserve	7,438,821	7,741,000
717- Emergency Reserve	3,141,025	3,100,000
718- MHJB Endowment	143,940	144,000
719- Equipment Replacement	351,351	750,000





CIP Projects Overview, as of 12/31/2018

Rehab or Replacement Projects	Project #	FY2019 Projected Project Total *	Spend Thru 12/31/18 **	Project Duration	Current Status
Aerators at Loch Lomond	c701706	350,000	9,300	2017-2019	Design
Bay Street Reservoir Reconstruction	c700313	25,774,072	25,350,732	2007-2018	Post-Constr
Beltz 10 & 11 Rehab & Development	c700026	509,243	176,497	2017-2018	Construction
Carbonera Tank Access Rd	e701706	479,000	102,343	2018-2019	Design
CPS & SLR Diversion Rehab	c701903	TBD	160,868	TBD	PD/Feasibility
CPS 20" RW Pipeline Replacement	c701707	695,120	568,854	2018-2019	PD/Feasibility
Felton Diversion Bladder Replacement	c701602	1,111,900	694,624	2016-2019	Post-Constr
NEW > Felton Div. Pump Station Assess.	c701906	TBD	-	TBD	PD/Feasibility
NCD I/O Replacement Project	c701606	49,192,744	7,107,234	2016-2022	Design
Pressure Regulating Stations	c701703	490,000	146,783	2017-2020	Construction
Spillway Bridge Replacement	c701807	660,000	1,039,581	2018	Post-Constr
Graham Hill WTP Tube Settler Replacement	c701708	2,875,200	1,698,846	2018-2019	Construction
University Tank No. 5 Replacement	c701506	4,428,000	1,372,344	2014 - 2019	Construction
Newell Creek Pipeline Rehab/Replacement	c701701	20,022,600	824,644	2016-2020	PD/Feasibility
GHWTP Facilities Improvement Project	c700025	1,857,148	2,135,954	TBD	PD/Feasibility
GHWTP CC Tanks Replacement	c701501	28,838,320	4,087,056	2014 - 2021	Design
GHWTP Flocculator Rehab/Replacement	c701502	3,220,000	66,137	2018-2020	PD/Feasibility
N. Coast System Rehab- Laguna Diversion	c701801	1,620,000	87,717	2018-2021	Planning
N. Coast System Rehab- Majors Diversion	c701802	1,570,000	87,717	2018-2021	Planning
N Coast System Repair/Replacement	c709835	27,640,259	13,941,769	2003-2023	Planning
University Tank No. 4 Rehab/Replace	c701505	3,770,000	142,261	2014 - 2020	Planning
San Lorenzo River Diversion & Tait Wells	c709872	2,295,014	1,957,155	2002-2018	Complete
WTP Filter Rehabilitation & Upgrades	c701303	6,037,300	5,839,451	2013 - 2018	Post-Constr
		183,435,920	**67,597,868**		

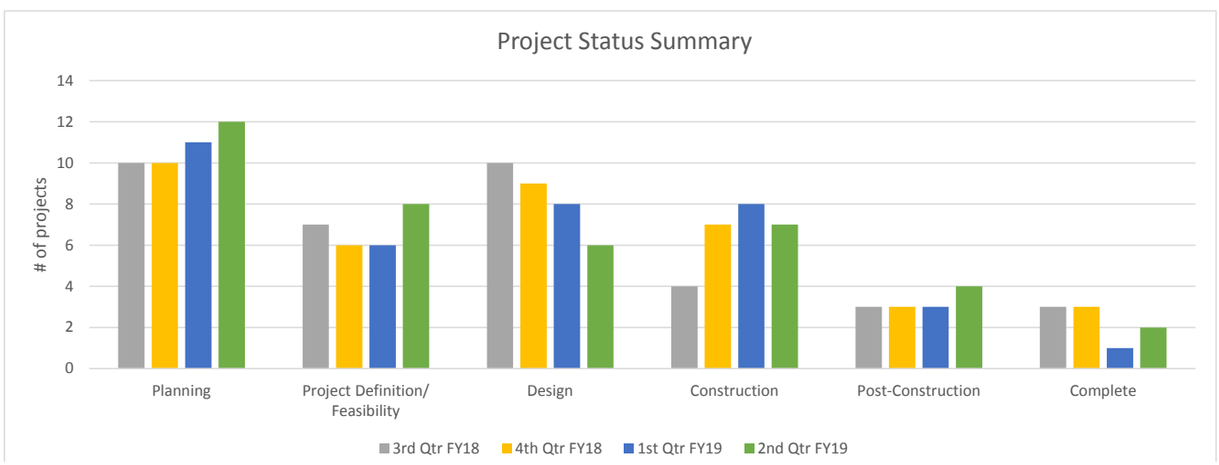
Upgrades or Improvement Projects	Project #	FY2019 Projected Project Total *	Spend Thru 12/31/18 **	Project Duration	Current Status
Advanced Metering Infrastructure (AMI)	c701603	11,100,000	159,459	2017-2023	PD/Feasibility
Brackney Landslide Risk Reduction	c701803	70,100	49,312	TBD	Planning
Coast Pump Station Flood Reduction	c701804	67,300	48,575	TBD	Planning
NEW > Facility & Infrastructure Improvements	c701907	TBD	-	On-going	Planning
Loch Lomond Facilities Improvements	c701301	385,000	73,626	2013-2020	Design
Newell Creek Access Rd Bridge	c701904	150,000	69,300	TBD	Design
Newell Creek Dam Property	c701902	2,000,000	1,849,355	2018	Complete
Programmable Logic Controllers	c701905	160,000	142,459	TBD	Planning
Security Camera & Building Access Upgrades	c701704	645,000	176,996	2016-2019	Construction
Spoils and Stockpile Handling Facilities	c701508	350,000	227,871	2015-2019	Construction
Union/Locust Building Expansion	c701805	450,000	835,723	2017-2018	Construction
		15,377,400	3,632,675		

Water Supply Reliability & Studies	Project #	FY2019 Projected Project Total *	Spend Thru 12/31/18 **	Project Duration	Current Status
Aquifer Storage and Recovery	c701609 & -10	3,985,000	1,718,322	2016 - 2022	PD/Feasibility
Recycled Water	c701611 & -12	675,000	573,807	2016 - 2018	Planning
River Bank Filtration	c701806	1,300,000	1,270,073	2018-2019	Planning
Source Water Evaluation	c701608	1,200,000	515,628	2016 - 2020	Planning
Water Program Administration	c701901	TBD	2,204,182	TBD	On-going
Water Supply Augmentation Strategy	c701705	106,648,352	1,083,684	2020 - 2025	Planning
		113,808,352	7,365,696		

Water Main Replacements	Project #	FY2019 Budget	Spend For 7/1/18 - 12/31/18	Project Duration	Current Status
Main Replacements - Engineering Section	c700002 +	2,250,000	941,222	Annual - Ongoing Programs	
Main Replacements - Customer Initiated	c700004	50,000	-		
Main Replacements - Distribution Section	c701507	325,000	155,146		
Main Replace.- Outside Agency Initiated	c700003	250,000	-		
		2,875,000	1,096,368		

* This is the approved amount from the FY2019 budget process; amount will be updated during annual budget process.

** Amount includes current encumbered and spent funds from the project start through 12/31/18.



WATER COMMISSION
INFORMATION REPORT

DATE: 1/30/2019

AGENDA OF: February 4, 2018

TO: Water Commission

FROM: Toby Goddard, Water Conservation Manager

SUBJECT: Initial Water Supply Outlook for 2019

RECOMMENDATION: For information and discussion by the Water Commission.

BACKGROUND: Every year during the winter season, the Water Department monitors local rainfall, runoff, and reservoir storage levels and prepares a series of written statements that describe current water conditions and discuss the water supply outlook for the year ahead. This report presents the Water Department's first formal outlook covering the City's water supply situation for Water Year 2019. The end of January represents the mid-point of the winter wet season. The outlook will be updated as the 2019 wet season progresses and a final "Water Supply and Demand Assessment" will be prepared toward the end of March.

DISCUSSION:

Rainfall After getting off to a dry start, the weather pattern along the Central Coast turned wet in late November. Since then, a series of storms boosted seasonal precipitation totals close to average for this time of year. As of January 28, 2019, a total of 15.88 inches of rain has fallen in the city of Santa Cruz, equal to 96 percent of average, and almost twice as much rain as was recorded this time one year ago. In the City's watershed around Loch Lomond Reservoir, total rainfall measures 22.7 inches for the season to date, compared to 13.5 inches one year ago. Monthly and cumulative rainfall amounts for the city of Santa Cruz are shown in Figures 1 and 2[1].

The rainfall to date has been a welcome relief from what was a dry 2018 Water Year, and one that that was marked by the deadliest and most destructive wildfire season on record in California. The U.S. Drought Monitor, as a lingering reflection of how dry it was last year,

[1] The Water Department has long relied on the National Weather Service and its volunteer observer for daily weather data in the city of Santa Cruz due to the length, consistency, and quality of records. This year, staff began using a different source for rainfall data in the City after noticing problems associated with a different observer. Daily rainfall data are now collected from a weather station that is part of the California Irrigation Management and Information System (CIMIS) operated by the California Department of Water Resources. The station located at the Delaveaga golf course, which is close in proximity and elevation to the previous NOAA weather station.

continues to classify most of California, including all of Santa Cruz County, as being in a moderate drought condition through the third week of January 2019 (Figure 3).

The short term forecast is calling for more rain moving over the region later in the week, extending into the weekend. Long-term, the National Weather Service Climate Prediction Center is showing equal chances of normal precipitation across California in its 3-month outlook for the period February through April 2019 that was generated on January 17th.

Stream Flow Figure 4 shows the mean monthly stream flow in the San Lorenzo River measured at the Big Trees gaging station in Felton for the season to date, along with the long-term average monthly values, and the mean monthly flow from last year for comparison. The San Lorenzo River flowed below average all summer long and into fall due to dry conditions experienced last winter. It usually takes about a foot or more of rain in the watershed to saturate soils before significant winter runoff occurs. This year, was no exception. Once rainfall reached 12 inches in the watershed, which occurred on January 6, 2019, the following storms generated substantial runoff, bringing the mean monthly flow for the month of January close to the long-term average of 315 cubic feet per second (cfs).

Reservoir Storage The 2019 Water Year started October 1, 2018 with Loch Lomond Reservoir at about 90 percent of capacity. The reservoir continued dropping due to the need for reservoir water to meet system demand until January 5 when it reached a minimum of 82 percent of capacity. Since then, the reservoir has risen seven feet, adding 376 million gallons, and bringing storage to 95 percent of capacity. The lake reaches full capacity at elevation 577.3 above mean sea level. As seen in the photograph to the left, the reservoir is currently about two feet from spilling.

Water Year Classification The Water Department uses a water year classification system to characterize the City's overall annual water supply condition. Under this classification system, the water year beginning October 1 is designated as one of four types – **Wet**, **Normal**, **Dry**, or **Critically Dry** – depending on the total annual discharge of the San Lorenzo River, measured at the stream gage in Felton, and expressed in acre-feet[2].

A chart of cumulative runoff from October 1, 2018 through January 28, 2019 is presented in Figure 5. So far, a total 21,752 acre-feet (ac-ft) of runoff has been generated by winter storm activity, primarily from two large events that occurred in early and mid-January. This total is less than the long-term average for the San Lorenzo of ~33,000 ac-ft at the end of January but considerably more than the 9,600 ac-ft produced last year. With the watershed primed from all

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

the rainfall over the last three months, total runoff can be expected to climb quickly with any major new storms. Still, it is too early in the season to predict how the 2019 Water Year will be classified since there is still considerable time left this winter for additional runoff to build and accumulate.

Initial Outlook for 2019 With near-normal rainfall replenishing local watersheds, reservoir storage close to full capacity, and with more rain in the forecast, the water supply outlook for the city at this time is optimistic. Historically, it is not uncommon to see large storms and/or plentiful rainfall during the months of February, March, and April.

Still, over the last decade, California has experienced tremendous weather swings and extremes. There is always a possibility of experiencing extended dry weather in the second half of winter. For a predominantly surface water system that depends mainly on flowing supplies for the majority of its water supply, like the City does, the yield of our sources in the dry summer period is strongly influenced not just by the amount of rainfall, but also how it is distributed over the winter season. Late season storms help maintain North Coast streams and keep the San Lorenzo River flowing strong later into spring and summer. The Water Department will continue to monitor water supply conditions and will reevaluate the water supply outlook as the season progresses.

Making Water Conservation a California Way of Life. Under two new laws passed in 2018 (SB 606 and AB 1668), urban water suppliers will be required over the next several years to:

- establish new water use targets to use water more wisely,
- eliminate water waste, and
- strengthen local drought resilience

One provision of these laws requires urban water suppliers, beginning in 2022, to submit an annual water shortage assessment report to the California Department of Water Resources by July 1. The new requirement is similar to the analysis staff has already been conducting every March over the past several years. Staff will be following regulations that develop going forward and will consider modifying the format of our report to align with new state law.

FISCAL IMPACT: None.

ATTACHMENTS:
Figure 1: Monthly Rainfall, City of Santa Cruz
Figure 2: Cumulative Rainfall, Santa Cruz
Figure 3: U.S. Drought Monitor, January 22, 2019
Figure 4: Mean Monthly Streamflow, San Lorenzo River at Big trees
Figure 5: Cumulative Runoff and Water Year Classification

Figure 1. Monthly Rainfall, City of Santa Cruz, 01/28/2019

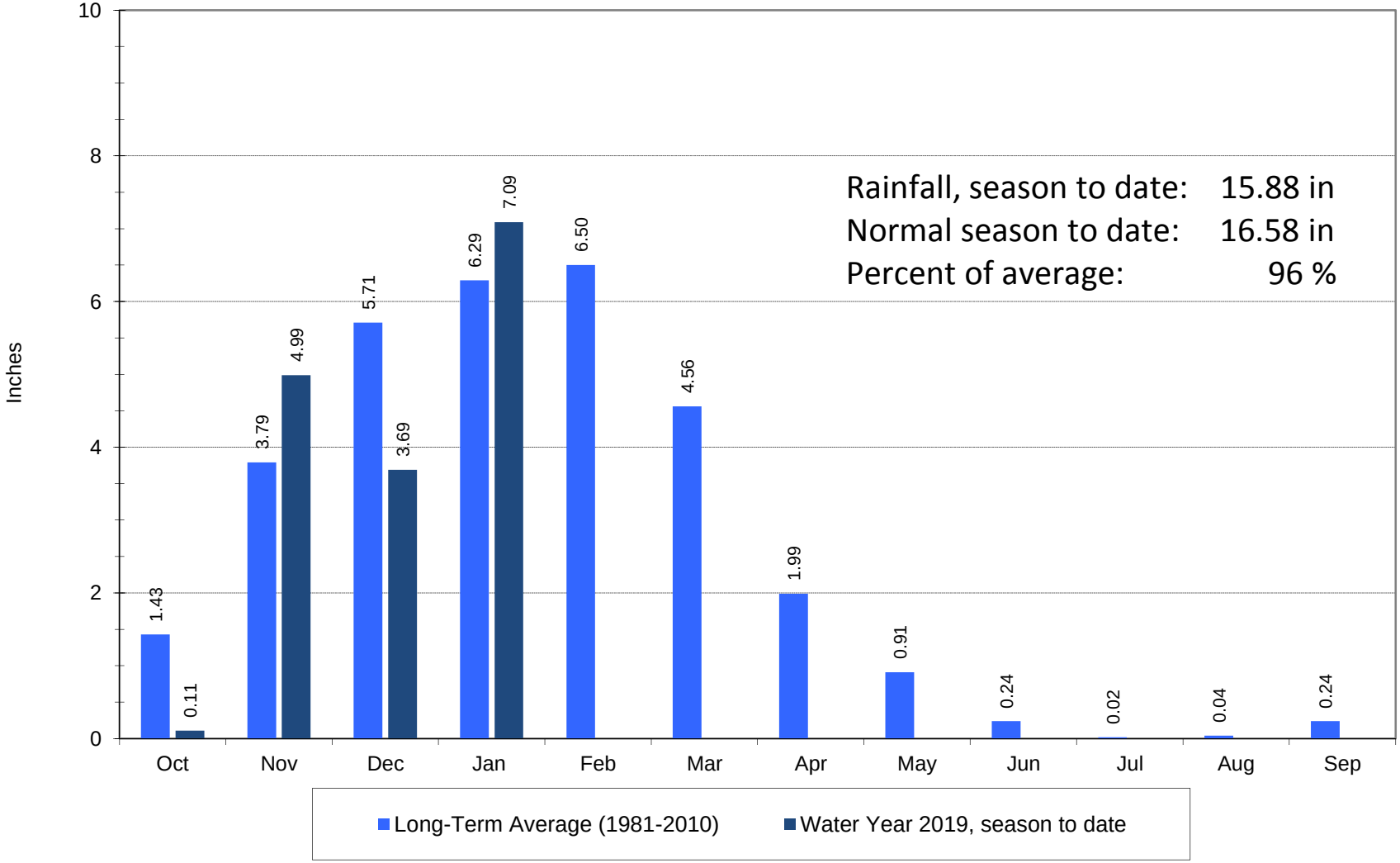
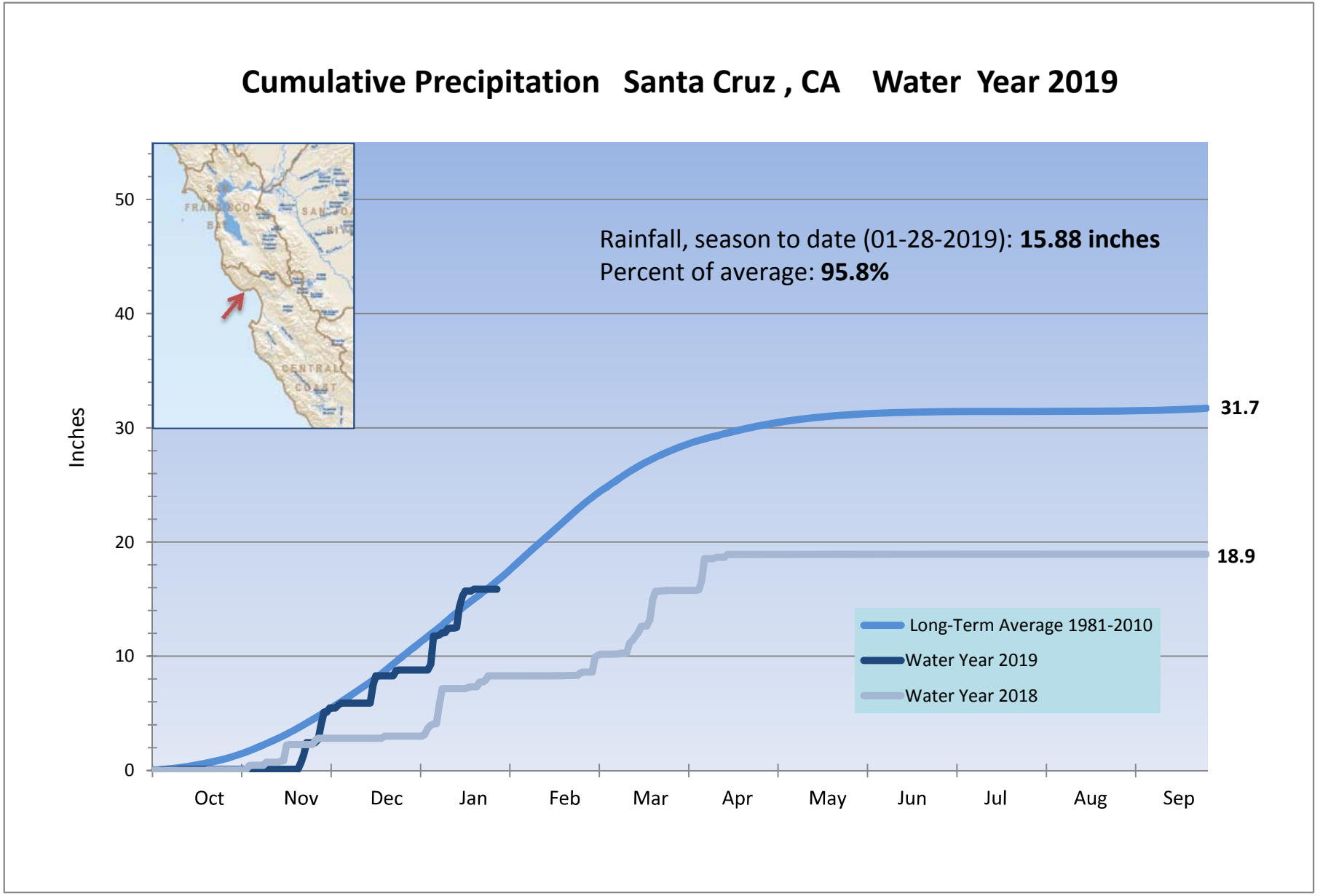
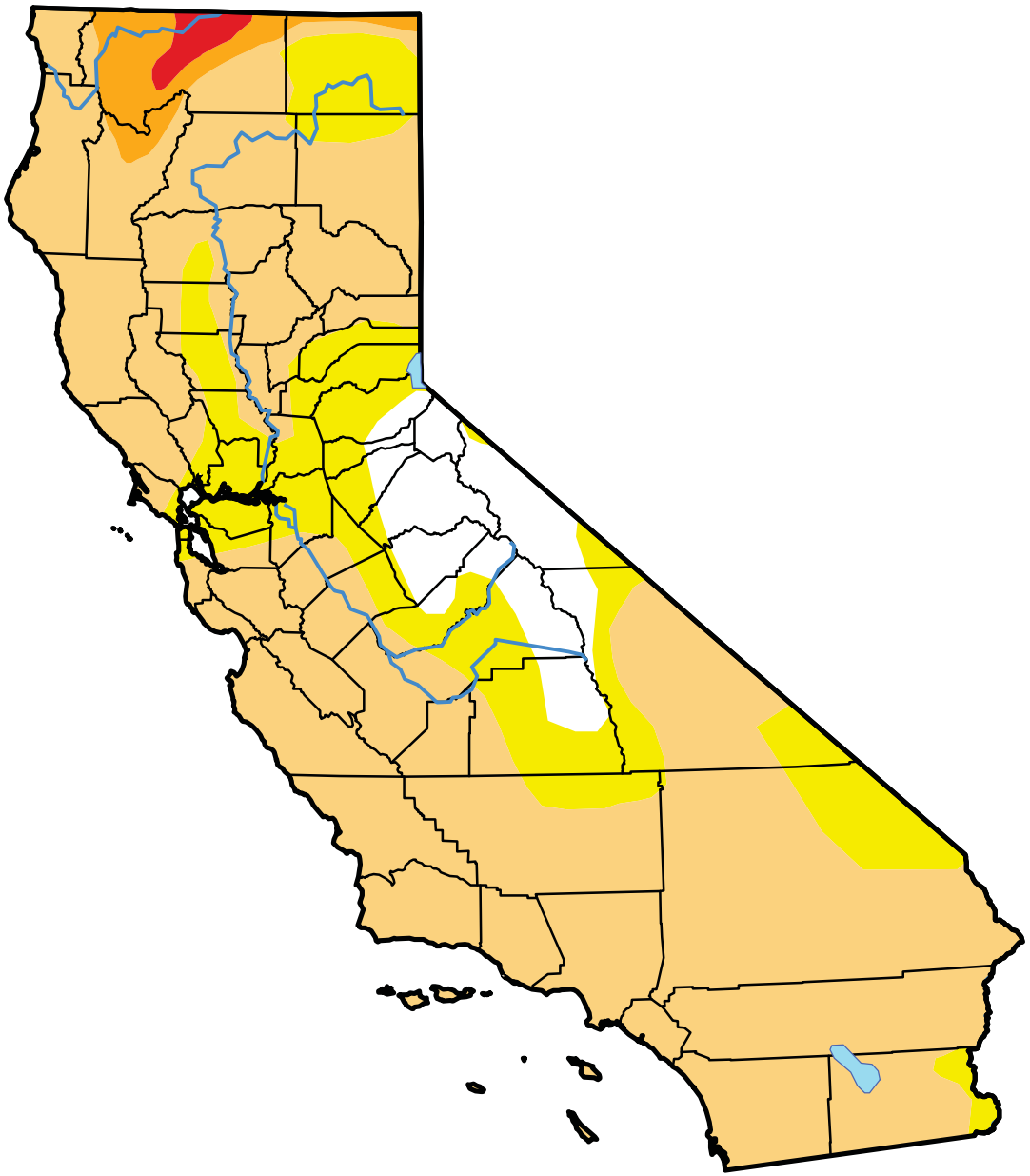


Figure 2.


Cumulative Precipitation Santa Cruz , CA Water Year 2019
Rainfall, season to date (01-28-2019): 15.88 inches
Percent of average: 95.8%
Inches
0
10
20
30
40
50
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
31.7
18.9
Long-Term Average 1981-2010
Water Year 2019
Water Year 2018

U.S. Drought Monitor

California



4.6

January 22, 2019

(Released Thursday, Jan. 24, 2019)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	7.77	92.23	72.23	3.44	0.71	0.00
Last Week *01-15-2019*	7.77	92.23	75.17	5.54	0.71	0.00
3 Months Ago *10-23-2018*	15.16	84.84	47.94	19.30	2.73	0.00
Start of Calendar Year *01-01-2019*	7.77	92.23	75.17	14.12	2.10	0.00
Start of Water Year *09-25-2018*	12.18	87.82	47.97	22.82	4.94	0.00
One Year Ago *01-23-2018*	45.48	54.52	12.69	0.00	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:

Brian Fuchs

National Drought Mitigation Center

http://droughtmonitor.unl.edu/

Figure 3.

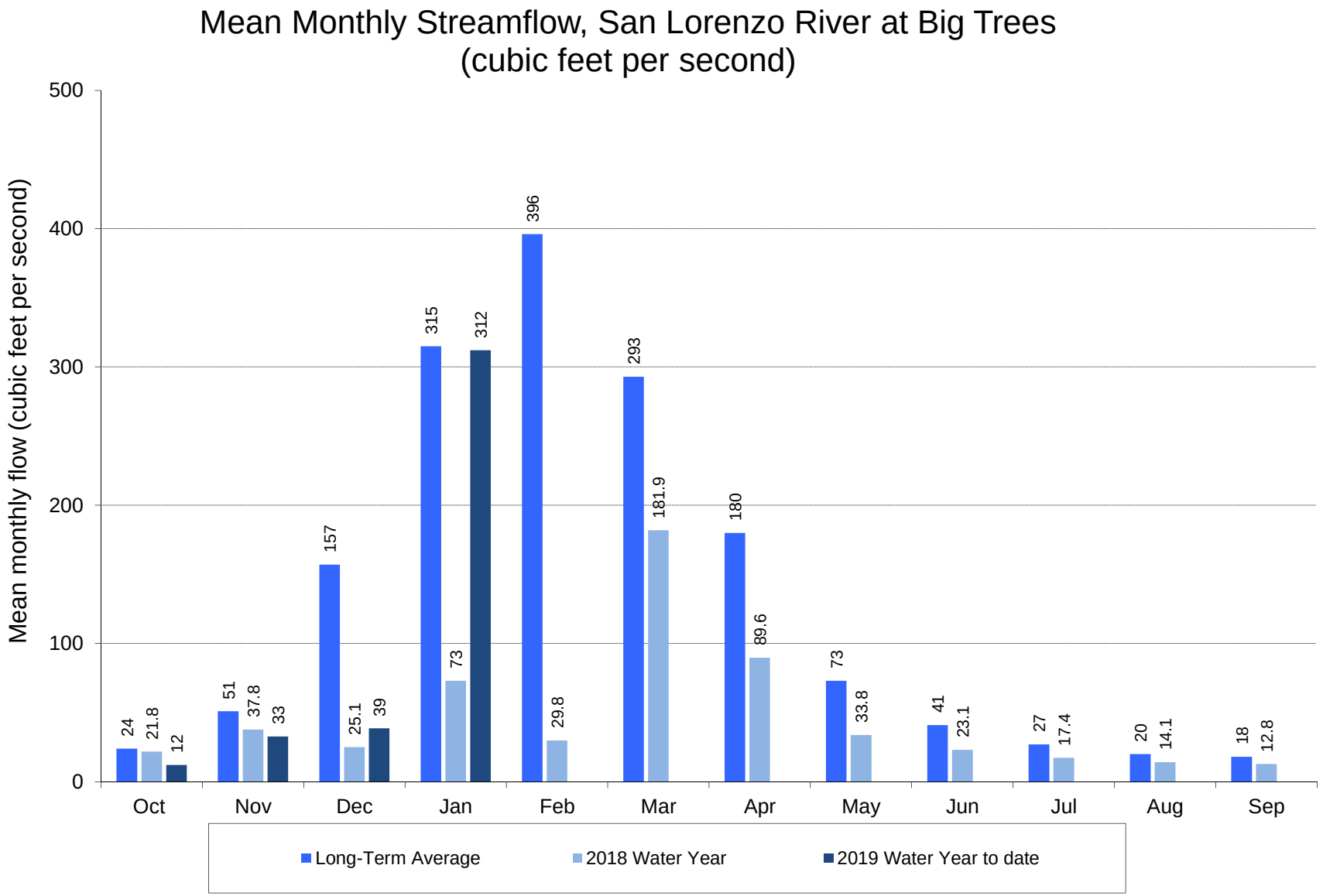
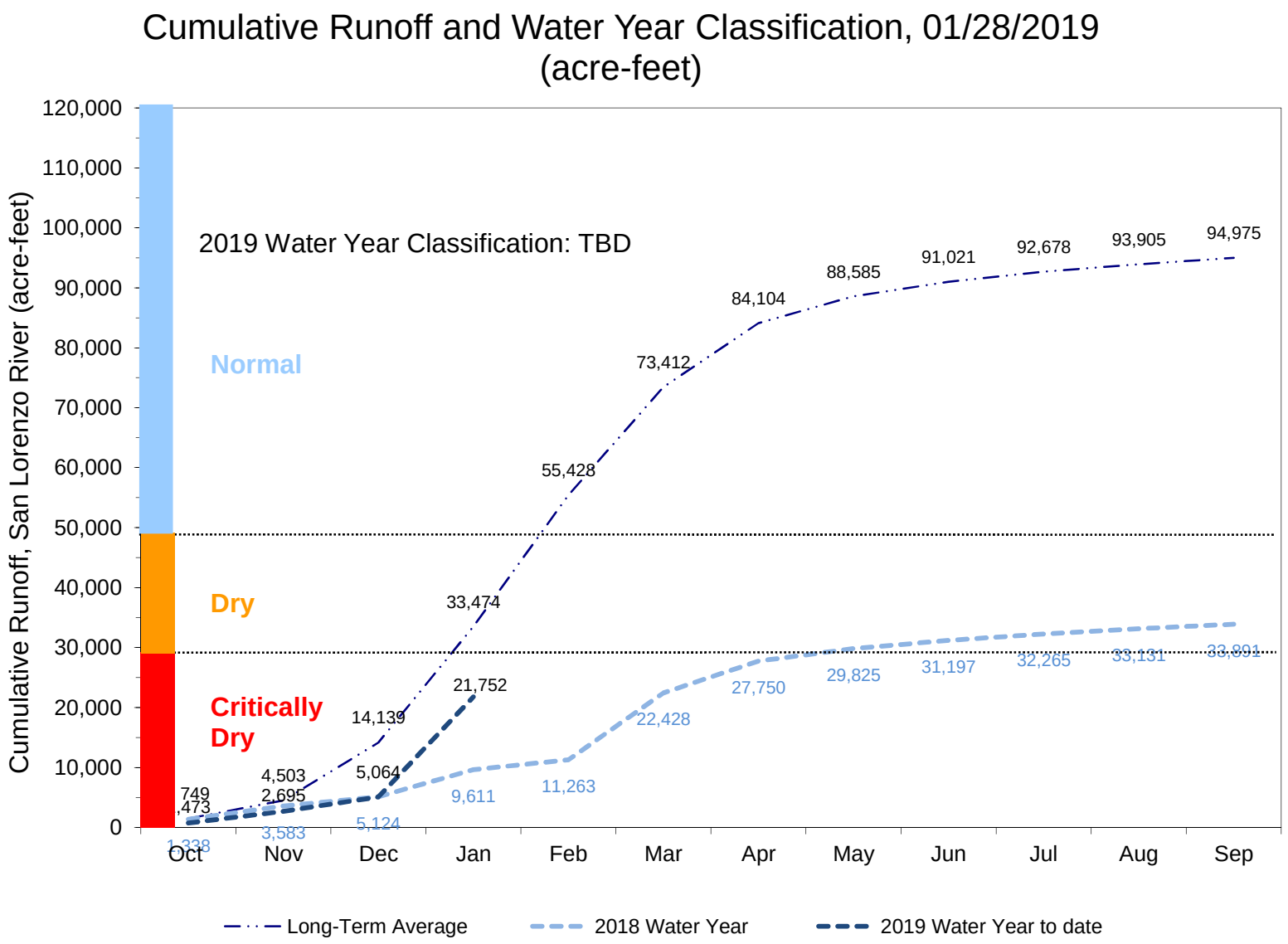

Mean Monthly Streamflow, San Lorenzo River at Big Trees
(cubic feet per second)
Mean monthly flow (cubic feet per second)
500
400
300
200
100
0
24
21.8
12
51
37.8
33
157
25.1
39
315
73
312
396
29.8
293
181.9
180
89.6
73
33.8
41
23.1
27
17.4
20
14.1
18
12.8
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Long-Term Average
2018 Water Year
2019 Water Year to date

Figure 4.


Cumulative Runoff and Water Year Classification, 01/28/2019
(acre-feet)
Cumulative Runoff, San Lorenzo River (acre-feet)
120,000
110,000
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
2019 Water Year Classification: TBD
Normal
Dry
Critically Dry
749
1,473
1,338
4,503
2,695
3,583
14,139
5,064
5,124
33,474
21,752
9,611
55,428
11,263
73,412
22,428
84,104
27,750
88,585
29,825
91,021
31,197
92,678
32,265
93,905
33,131
94,975
33,991
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Long-Term Average
2018 Water Year
2019 Water Year to date