CITY OF SANTA CRUZ

Water Department

Water Commission Agenda
Regular Meeting
7:00 p.m. – January 4, 2016
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.

Consent Agenda (Pages 1-30)

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. Routine items that will be found on the consent agenda are City Council Items Affecting Water, Water Commission Minutes, Information Items, Documents for Future Meetings, and Items initiated by members for Future Agendas. If one of these categories is not listed on the Consent Agenda then those items are not available for action.

1. City Council Actions Affecting Water ☆ (accept info) (Pages 1-2)
2. Approve the December 7, 2015 Water Commission Minutes ☆ (accept info) (Pages 3-8)
3. Urban Water Management Plan Update ☆ (accept info) (Pages 9-30)

Items Removed from the Consent Agenda

General Business (Pages 31-72)

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. Cost of Service Rate Analysis and Rate Structure Design - Work To Date Presentation and Discussion (Pages 31-32)

Recommendation: Receive presentation regarding work performed to date on the Cost of Service Analysis and Rate Structure Design Options and provide input to the Consultant and to City Staff for consideration in developing final proposals for Water Commission Action.

2. Draft Water Commission Work Plan for Calendar Year 2016 ☆ (Pages 33-36)

Recommendation: Receive and accept Draft Water Commission Work Plan as a framework to focus Water Commission Efforts in Calendar Year 2016

3. Water Supply Augmentation Strategy, Initial Work Plan ☆(Pages 37-40)

Recommendation: That the Water Commission review and provide comment on the initial work plan for the Water Supply Augmentation Strategy

4. Water Efficient Landscape Ordinance ☆(Pages 41-72)

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

Subcommittee/Advisory Body Oral Reports

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

Adjournment The next meeting of the Water Commission is tentatively scheduled for February 1, 2016 at 7:00 p.m. in Council Chambers.

☆Denotes written materials included in packet

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

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

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

WATER COMMISSION
REPORT

DATE: December 17, 2015

TO: Water Commission

FROM: Rosemary Menard
Water Director

SUBJECT: City Council Items Affecting Water

Establishment of Non-wasting Endowment for Protection of Mount Herman June Beetle – Budget Adjustment (WT)

Resolution No. NS-29,032 was adopted to create a new fund, amending the FY 2016 Budget and transferring funds of $145,000 to establish a non-wasting endowment to protect the Mount Hermon June Beetle in accordance with the Endangered Species Act.

Progress Report and Requested Action on Santa Cruz Mid-County Groundwater Management Issues (WT)

Resolution No. NS-29,035 was adopted for submittal to the California Water Resources Control Board supporting the revisions of the boundaries for the Santa Cruz Mid-County Groundwater Basin.

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Water Department

Water Commission
7:00 p.m. –December 7, 2015
Council Chambers
809 Center Street, Santa Cruz

Minutes of a Water Commission Meeting

Call to Order: Chair D. Baskin called the meeting to order at 7:03p.m. in the City Council Chambers.

Roll Call
Present: D. Baskin, D. Schwarm, A. Schiffrin, D. Stearns, W. Wadlow, and L. Wilshusen, G. Mead
Absent:
Staff: H. Luckenbach, Deputy Director/Engineering Manager; T. Goddard Administrative Services Manager; C. Berry, Watershed Compliance Manager; A. Poncato, Administrative Assistant III

Others: 1 member of the public.

Presentation: There were no presentations.

Statement of Disqualification: There were no statements of disqualification.

Oral Communications: Oral communications made by S. McGilvray.

Announcements: There were no announcements.

Consent Agenda
3. Approve the November 2, 2015 Water Commission Minutes
4. 2016 Water Commission Calendar

Commissioner Schiffrin moved the consent agenda. Commissioner Wilshusen seconded.
VOICE VOTE: MOTION CARRIED
AYES: All.
NOES: None

Items removed from Consent Agenda

1. City Council Actions Affecting Water

North Coast System Rehabilitation Project-Phase 3 – Award of Contract (WT)

Commissioner Mead reads the discussion material presented in the North Coast Rehabilitation Project-Phase 3 Award of Contract staff report in regards to the significant amount of water that

escaped during the North Coast Pipeline leak in October, 2015. He also mentions the water leak audit within Distribution a few months back and wonders why there are not meters that track the flow and loss of water between the Graham Hill Water Treatment Plant and Loch Lomond as well as Graham Hill Water Treatment Plant and the North Coast Pipeline. He requests a presentation about looking into what it would take to monitor the flow between the Graham Hill Water Treatment Plant and both Loch Lomond and the North Coast Pipeline.

- Response: Mr. Goddard explains that there are meters at the Laguna, Liddell and Majors watersheds, there is a meter where the Laguna and Liddell water sources come together on Highway 1 and a meter at the North Coast pump station.

Commissioner Mead questions if the water is metered for the north coast farmers.

- Response: Mr. Goddard confirms that the farms that take from the water system are fully metered.

Progress Report and Requested Action on Santa Cruz Mid-County Groundwater Management Issues (WT)

Commissioner Schiffrin voiced his concern about the City being a minority on the appointed Board of Directors. Will the agency have the authority to prevent the City from taking its allotted share of water?

- Response: Commissioner Baskin states that this is a consensus based agreement. If the parties cannot reach an agreement that serves the needs of all the agencies then the agencies should have the right to pull out of the agreement. Please keep in mind that this agreement is a preliminary framework to how the agencies can work at the beginning, but as the agency gets formed they anticipate that they will need to revise their articles to reflect how they want to structure the agency.

Commissioner Wadlow questions where and how will the coordination exist between the implementation of SGMA and the pursuit of the preferred alternative that the City Council adopted from the WSAC recommendation?

- Response: Ms. Luckenbach states that it has not yet been determined. However, the small scale current water transfer project we are involved in will give us the opportunity to observe how the operational agreements will work as well as determine who is responsible for the monitoring.

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

2. WSAC related outreach

Commissioners Wadlow and Wilshusen question why is the report was sent to a group of people who no longer function as a committee?

- Response: Commissioner Baskin states that when the City Council approved the WSAC recommendation, a motion was carried to support staffs continuing public information and engagement on the water supply strategy. Commissioner Baskin asked Water Director

Menard to include this update in the current Water Commission packet with hopes the Commission would be interested in participating in the outreach and use it as a vehicle to get updated with the approved plan.

Additional Comments

- Commissioner Wilshusen believes outreach work for the approved WSAC recommendation and updating the urban water management plan should be the responsibility of Water Department staff and the Water Commission, not former members of WSAC.

- Commissioner Baskin voices his concern about what type of training future outreach group members will receive and believes everyone involved in outreach should be sharing the same information with the public.

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

5. Informational Memo on Water Budget Based Rate Structures for Single Family Residential Customers

Commissioner Wilshusen refers to SFR Usage Efficiency Comparison and questions why the default household size used to determine the indoor water budget dropped to 3 persons instead of 4 persons.

- Response: Mr. Goddard explained that the memo comparing different scenarios to assess whether a budget-based rate structure would make sense in Santa Cruz; there is no connection between this report and the approach to rationing.

Additional Comments

- Commissioner Schiffrin states that there should have been an explanation as to why the default household size changed from 4 persons per household to 3 persons per household in this report.

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

General Business

1. Loch Lomond Emergency Prep Work Update
   Mr. Berry provided the presentation summarizing the Loch Lomond Emergency Prep Work Update and responded to Commission questions.

Commission Questions/Comments
Additional Comments

- Both Commissioners Wilshusen and Sterns thank Mr. Berry for including this is the Commission packet and for the preparatory work that has been done.
- Commissioner Baskin stated he began to like the ASR option more during the WSAC process because this option stores water underneath the ground which will protect our water storage during a fire.

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

Subcommittee/Advisory Body Oral Reports

Municipal Code Subcommittee

- The subcommittee met in October. We have replied to all of the comments and the City Attorney is crafting some language that will be brought to the subcommittee in January and then bring the revised municipal code back in February.

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

- Loch Lomond reservoir is currently at 66% capacity with a heavy rain forecast in the next week.
- We have not used the Felton Diversion yet this season. It takes a lot of continuous flow in the river before we are able to inflate the dam and start pumping it up.
- We finished the initial study for the water transfer project and will be posting that on Wednesday for its 30 day review with hopes that we can start the agreement sometime in February.

Questions and Comments Regarding the Director's Oral Report

The reservoir has been at 66% capacity for the past few weeks, even with a number of rain events that has not seemed to affect water levels.

- Response: The ground is very dry and it takes about a foot of rain, if not more, before we begin to see runoff emerge. You would see the reservoir levels rise a little with an inch or two of rain, but there has been less rain at Loch Lomond than in town. The rule of thumb after saturation is that about an inch of rainfall produces about a foot of rise in the runoff after saturation and we are 19 feet below the spillway at this point.

Aren't the water levels updated weekly in the Santa Cruz Sentinel? It hasn't been published in a while.

- Response: We update those figures each Thursday for the week ending on Wednesday and the Sentinel picks it up on Friday. One of our conservation employees was out of the office so the numbers may not have been updated last week.

We are far from saturation?

- Response: Yes, we are far from saturation. We dug some test holes for some wetlands projects last week and we found moisture not far from the surface and further down from the moisture was all dry like a desert.

What are we doing in terms of the release for the creek?

- Response: .2cfs is the terms of our agreement. We met with resource agencies and federal government a few weeks ago and they are very interested in seeing this go back to normal when it starts raining. We assume our temporary urgency change petition will expire in February and we are hoping we will not need to have it renewed.

Adjournment Meeting adjourned at 8:21pm. The next regular meeting of the Water Commission is scheduled for January 4, 2016 at 7:00p.m. in the Council Chambers.

Respectfully submitted,

Amy Poncato

Digitally signed by Amy Poncato
DN: cn=Amy Poncato, o=Water Department, ou=Administration, email=aponcato@cityofsantacruz.com, c=US
Date: 2015.12.22 16:11:52 -08'00'

Staff

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WATER DEPARTMENT MEMORANDUM

DATE: December 14, 2015

TO: Water Commission

FROM: Toby Goddard, Administrative Services Manager

SUBJECT: 2015 Urban Water Management Plan

RECOMMENDATION: Receive information on the Water Department's work plan to prepare the 2015 Urban Water Management Plan.

BACKGROUND: As a public water supplier, the City of Santa Cruz is required under state law to prepare and adopt an Urban Water Management Plan and to update it every five years. The purpose, required contents, and process for preparing and adopting Urban Water Management Plans are specified in Water Code sections 10608 and 10610 – 10656. The overall goal is to provide water suppliers throughout the state a framework for carrying out their long-term planning responsibilities and for reporting their strategies to meet future water challenges to both state government and the communities they serve. The document covers a 20-year planning horizon (or as far as data is available), in five year increments.

The plan encompasses a wide range of topics, including: a description of the City's water service area; current and projected population; existing and planned sources of water supply; past, current, and projected water use; an assessment of water supply reliability; a description of measures to promote efficient water use; and a summary of the suppliers' water shortage contingency plan. The California Department of Water Resources (DWR) reviews the documents for completeness, and a determination that an agency has a complete Urban Water Management Plan is a condition that is required for water suppliers to be eligible for state grants and loans.

DISCUSSION: The 2015 plan is due July 1, 2016. Staff has begun the process of gearing up to prepare the 2015 plan which serves to update the most recent 2010 plan adopted in December 2011. Attached is a work plan detailing the general scope of work, broken down into 15 individual tasks and related steps (Attachment 1).

A number of legislative changes to the Water Code have occurred since the 2010 plan (Attachment 2). Among these is a requirement to provide forms, tables, or displays in a format specified by DWR. This change was made to standardize the information submitted by local agencies and to facilitate DWR's review process. There are about 40 tables that apply to retail

water suppliers. As a result of this change, staff has decided to follow exactly DWRs recommended organization for this next update, which differs somewhat from previous versions. A checklist of specific UWMP requirements is provided by DWR to support suppliers in preparing their plans (Attachment 3).

The most significant local development since the 2010 plan includes the Water Supply Advisory Committee's process and Agreements and Recommendations Final Report. On November 24, 2015, the City Council directed staff to integrate the recommended water supply strategy into the Urban Water Management Plan update. Some of the work done as part of the WSAC process, most notably, new water demand projections, was intended to be used and will facilitate this next update. However, additional work will be needed to present the analysis of supply available to meet current and projected future demand into the form required by DWR. Other significant updates will involve summarizing recent actions and agreements affecting local groundwater management, updating calculations relating to per capita water use baselines and targets, and folding in information as it becomes available about conservation savings.

Working backward, compliance with the due date of July 1, 2016 will require the City Council to hold a public hearing and adopt the plan in the month of June, and for the Water Commission to review a draft at its May meeting, making this update an ambitious undertaking. Accordingly, the Water Department has assembled a team of staff members that will be actively working on individual tasks over the next four months to meet this deadline. One of the first steps in January will be to convene a meeting of all the local water and wastewater service providers, and land-use and regional planning agencies, along with a representative of DWR, to coordinate efforts within Santa Cruz County. The Water Department has hosted such a kickoff meeting in the last three update cycles and has found it to be useful for all the parties involved.

The Water Department operating budget includes $100,000 for professional and technical services as a contingency for any additional technical analysis or assistance that may be needed to successfully complete this update.

Attachments:

1. Work Plan
2. Changes to the Water Code Since 2010 UWMPs
3. UWMP Checklist

Tasks		Description	Coordination Section/Staff	Schedule/ Deadline	Priority	Expected Outcome	Status
Task 1	**Organization, Preparation**						
	1	Review DWR Guidbook, Appendices	WTEN/WTCO	Early December		Understand required versus optional elements	Complete, also participated in webinar about guidebook
	2	Attend UWMP Workshop	WTEN/WTCO	7-Dec-15		Become familiar with changes to law, new guidebook, new population tool, clarify requirements	Complete
	3	Review legislative changes, new requirements (Appendix C)	WTEN/WTCO				Complete
	4	Review checklist	WTEN/WTCO			Use this checklist as steps are completed, and to point DWR to where topics are covered	
	5	Institute weekly progress meetings	WTEN/WTCO	Beginning in January			
Task 2	**Initial Coordination**						
	1	Hold County-wide coordination meeting with relevant water, wastewater, land use and planning agencies and organizations	WTEN/WTCO	Mid Janaury		Local agency coordination and identification of common issues	Discussed with several agencys, DWR
	2	Provide required notice to cities and counties served >60 days prior to public hearing	WTCO	mid December		Satisty notifation requirement to other jursidictions that receive water service from the City	Complete, letter sent to top administrators and planning directors
	3	Consult with City Planning, County, & Capitola re; general plan updates, housing elements, future development plans or projects in service area	WTEN/WTCO				
Task 3	**Establish Report Format and Organization**						
	1	Review new standardized forms, tables, and displays	WTEN/WTCO				Ongoing
	2	Transition to DWR suggested organization	WTEN/WTCO	December		Facilitate mandatory use of DWR tables and their review of document	Decision made to follow recommeded outline
	3	Develop report outline					
Task 4	**Update Chapter 1: Introduction and Overview**						
	1	Summarize changes in law over last 5 years, including state groundwater law		Month of January			
	2	Update significant local developments since last plan:					
		2.1 Drought conditions and system demands					
		2.2 Instream flow releases					
		2.3 Infrastructure needs					
		2.4 WSAC Process					
		2.5 Regional plans/groundwater law/interagency agreements					
	3	Add section on funding eligibility					
Task 4	**Update Chapter 2: Plan Preparation**						
	1	Basis for preparing plan		Month of January			
	2	Coordination and outreach					

Tasks		Description	Coordination Section/Staff	Schedule/ Deadline	Priority	Expected Outcome	Status
Task 5		**Update Chapter 3: System Description**					
	1	Review, update profile of service area		Month of February			
	2	Update population forecast					Complete - 2014 AMBAG Regional Growth Forecast
	3	Update housing figures					
	4	Confirm climate figures, consider adding climate change impact section					Need outside assistance?
	5	Description of department and key facilites					
Task 6		**Update Chapter 4: System Water Use**					
	1	Update water uses by sector		Month of February			
	2	Summarize projected water demands to 2035					Demand forecast completed by David Mitchell as part of WSAC process
	3	Update section on distribution system losses and water loss control					
	4	Estimating future water savings					Coordinate with ongoing work by Maddaus Water Management
	5	Water for low income households					
	6	Impacts of climate change on water demand					
Task 7		**Update Chapter 5: SB X7-7 Baselines and Targets**					
	1	Review methodologies document		Month of March			
	2	Explore DWR Population Tool					Have forwarded tool to Rich Westfall in IT to assist in determining annual population in portion of service area outside City
	3	Review, complete required SB X7-7 Tables					
	4	Add clarifying language: Gross GPCD v.s R-GPCD				Distinguish between different expressions of GPCG used for SBX7-7 vs monthly reports to SWRCB for conservation targets	
	5	Update gross water use					
	6	Confirm 2020 target and interim 2015 target					
	7	Complete required tables					
Task 8		**Update Chapter 5: System Supplies**					
	1	Update groundwater portion of plan, including new facilites	Mainly WTEN				Do we need outside consulting assistance?
	1.1	Basin description, boudary modification					
	1.2	Groundwater management					

Tasks		Description	Coordination Section/Staff	Schedule/ Deadline	Priority	Expected Outcome	Status
	1.3	Overdraft conditions					New DWR Bulletin
	1.4	Historical groundwater pumping					
2		Surface water					
	2.1	Sources and operations					
	2.2	Production volumes					
3		Wastewater and recycled water					
	3.1	Wastewater collection, treatment and disposal					
	3.2	Describe investigations and potential recycled water beneficial uses					Update schedule for Pasatiempo/Scotts Valley
	3.3	Describe Actions to encourage and optimize future recycled water use					
4		Desalinated water opportunites					
5		Describe opportunites for exchanges or transfers					
6		Future Water Projects: WSAC here?					
7		Summary of existing and planned sources of water					
8		Discuss climate change impacts to water supply					
Task 9		**Update Chapter 7: Water Supply Reliability Assessment**					
1		Water supply problems and contraints on sources: legal, environmental, climatic, water quality	WTEN				Will need to involve Kevin work in conjunction with with Gary Fiske
2		Reliability by type of year: identify 2-year (1976-77) or 3- year period for multiple dry years					
3		Supply and Demand Assessment (under what fish flow assumption(s)					
	3.1	Average Year					
	3.2	Single Dry					
	3.3	Multiple Dry years					
4		Adressing challenge of water supply reliability: Fold in WSAC work here					
5		Address regional supply reliability (minimize the need to import water)					
Task 10		**Update Chapter 8: Water Shortage Contingency Planning**					
1		Background (last 4 years), plan, ordinance, resolution	WTCO				Ordinance updated in 2015
2		Stages of Action					
3		Describe prohibitions on end uses					

Tasks		Description	Coordination Section/Staff	Schedule/ Deadline	Priority	Expected Outcome	Status
	4	Penalties and charges					
	5	Consumption reduction methods					
	6	Determining water shortage reductions					
	7	Describe revenue and expenditure impacts (and methods to overcome impacts					
	8	Catastrophic supply interuption					
	9	Minimun Supply next three years (2016, 2017, 2018) and assuptions for hydrology as part of outlook					Bring in Raftelis for the financial impact part
Task 11		**Update Chapter 9: Demand Management Measures**					
	1	Overview	WTCO				
	2	Accomplshments, current progams and future programs to meet targets					
	3	Water waste prevention					
	4	Metering					
	5	Conservation pricing					
	6	Public outreach and education	WTAD				
	7	Water loss control program					Reference ongoing Water Loss Control program
	8	Implementation, 2020-2015					
	9	Planned implementation - WC Master Plan summary					
Task 12		**Update Chapter 10: Plan Adoption and Submittal**					
	1	Summarize review and adoption process, with placeholders for dates and actions					
Task 13		**Report Production**					
	1	Prepare Cover, Table of contents, appendicies	Primarily Admin staff				
	2	Produce paper copies for review					
	3	Produce and electronic version for website					
Task 14		**Public Review**					
	1	Provide notice and solicit input from cities, county, area water agencies	WTAD				
	2	Make plan available for public review and encourage involvement					Publish online
	3	Water Commission reivew		2-May-16			
	4	Address/respond to public comments, suggestions		Month of May			

Tasks		Description	Coordination Section/Staff	Schedule/ Deadline	Priority	Expected Outcome	Status
Task 15	**City Council Review and Adoption, and Submittal to DWR**						
	1	Publish notice of public hearing		Early June		Once a week for two weeks	
	2	Hold public hearing at City Council		14-Jun-16		Receive public City Council comments	
	3	Address/respond to public comments, suggestions again					
	4	Bring back matter for adoption by City Council		28-Jun-16		Unanimous adoption	
	5	Complete checklist		1-Jul-16			
	6	Submit plan electronically to DWR, state library, cities and county		1-Jul-16		Meet expected deadline	

Appendix C
Changes to the Water Code since 2010 UWMPs

Topic	CWC Section	Legislative Bill	Summary	Guidebook Section
Demand Management Measures	10631 (f)(1) and (2)	AB 2067 Weber 2014	Requires water suppliers to provide narratives describing their water demand management measures, as provided. Requires retail water suppliers to address the nature and extent of each water demand management measure implemented over the past 5 years and describe the water demand management measures that the supplier plans to implement to achieve its water use targets.	Chapter 9
Submittal Date	10621 (d)	AB 2067 Weber 2014	Requires each urban water supplier to submit its 2015 plan to the Department of Water Resources by July 1, 2016.	Chapter 10
Submittal Format	10644 (a) (2)	SB 1420 Wolk 2014	Requires the plan, or amendments to the plan, to be submitted electronically to the department.	Chapter 10
Standardized Forms	10644 (a) (2)	SB 1420 Wolk 2014	Requires the plan, or amendments to the plan, to include any standardized forms, tables, or displays specified by the department.	CH 1, Section 1.4
Water Loss	10631 (e) (1) (J) and (e) (3) (A) and (B)	SB 1420 Wolk 2014	Requires a plan to quantify and report on distribution system water loss.	Appendix L

Voluntary Reporting of Passive Savings	10631 (e) (4)	SB 1420 Wolk 2014	Provides for water use projections to display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans, when that information is available and applicable to an urban water supplier.	Appendix K
Voluntary Reporting of Energy Intensity	10631.2 (a) and (b)	SB 1036	Provides for an urban water supplier to include certain energy-related information, including, but not limited to, an estimate of the amount of energy used to extract or divert water supplies.	Appendix O
Defining Water Features	10632		Requires urban water suppliers to analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	CH 8, Section 8.2.4

Attachment F

UWMP Checklist

This checklist is developed directly from the Urban Water Management Planning Act and SB X7-7. It is provided to support water suppliers during preparation of their UWMPs. Two versions of the UWMP Checklist are provided – the first one (Table F-1) is organized according to the California Water Code and the second checklist (Table F-2) according to subject matter. The two checklists contain duplicate information and the water supplier should use whichever checklist is more convenient. In the event that information or recommendations in these tables are inconsistent with, conflict with, or omit the requirements of the Act or applicable laws, the Act or other laws shall prevail.

Each water supplier submitting an UWMP can also provide DWR with the UWMP location of the required element by completing the last column of either Table F-1 or F-2. This will support DWR in its review of these UWMPs. The completed form can be included with the UWMP.

If an item does not pertain to a water supplier, then state the UWMP requirement and note that it does not apply to the agency. For example, if a water supplier does not use groundwater as a water supply source, then there should be a statement in the UWMP that groundwater is not a water supply source.

TABLE F1 – Checklist Arranged by Water Code Section

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location *(Optional Column for Agency Use)*
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Baselines and Targets	Chapter 5 and App E	
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply is the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	
1608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	
10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	

10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of	System Supplies	Section 6.2.4	

	groundwater pumped by the urban water supplier for the past five years			
10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	
10631(i)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	
10631(j)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use	System Supplies	Section 2.5.1	

	projections from that source.			
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	
10632(a)(2)	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency.	Water Shortage Contingency Planning	Section 8.9	
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	
10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of	System Supplies (Recycled Water)	Section 6.5.2	

	wastewater collected and treated and the methods of wastewater disposal.			
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	
10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	Section 6.5.4	
10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.5.5	
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	
10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	Plan Preparation	Section 2.5.2	
10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	

	about the plan.			
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	

TABLE F2 – Checklist Arranged by Subject

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location *(Optional Column for Agency Use)*
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	
10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	
10642	Provide supporting documentation that the water supplier has encouraged active	Plan Preparation	Section 2.5.2	

	involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.			
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Baselines and Targets	Chapter 5 and App E	
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply is the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	
1608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted	Baselines and Targets	Section 5.1	

	water use reductions.			
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	System Supplies	Section 6.2.4	
10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	
10631(i)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	
10631(j)	Wholesale suppliers will include	System Supplies	Section 2.5.1	

	documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.			
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	
10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	Section 6.5.4	
10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.5.5	
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that	Water Supply Reliability Assessment	Section 7.1	

	source.			
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	
10632(a)(2)	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency.	Water Shortage Contingency Planning	Section 8.9	
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	
10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in	Demand Management	Sections 9.1 and 9.3	

	code, their distribution system asset management program, and supplier assistance program.	Measures		
10631(j)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	
10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	

10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	

WATER COMMISSION
INFORMATION REPORT

DATE: 12/17/2015

AGENDA OF:	January 4, 2016
TO:	Water Commission
FROM:	Rosemary Menard, Water Director
SUBJECT:	Cost of Service Rate Analysis and Rate Structure Design - Work To Date Presentation and Discussion

RECOMMENDATION: Receive presentation regarding work performed to date on the Cost of Service Analysis and Rate Structure Design Options and provide input to the Consultant and to City Staff for consideration in developing final proposals for Water Commission Action.

Receive presentation from Sanjay Gaur of Raftelis Financial Consultants regarding the Cost of Service Analysis and options for the design of water utility rate structures. The Commission will be asked to take action on recommendations to the City Council on these two items at its February 1st meeting.

RECOMMENDED MOTION: No action recommended at this time.

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WATER COMMISSION
INFORMATION REPORT

DATE: 12/14/15

AGENDA OF: January 4, 2016

TO: Water Commission

FROM: Rosemary Menard, Water Director

SUBJECT: Draft Water Commission Work Plan for Calendar Year 2016

RECOMMENDATION: Receive and accept Draft Water Commission Work Plan as a framework to focus Water Commission Efforts in Calendar Year 2016

BACKGROUND: With the completion of the work of the Water Supply Advisory Committee as well as the pending completion of the Water Rates and Charges work plan that the City Council adopted on September 23, 2014, the Water Department will begin shifting from its focus from planning and analysis to implementing established directions on water supply augmentation strategies and water rates and financial plans and strategies.

DISCUSSION: The Water Commission's role in this next phase will be important in both developing recommendations to the Council and in providing an ongoing forum for public dialogue about progress on a diverse set of initiatives that the Water Department will be working on. To maximize the effectiveness of the Water Commission's work as well as improve the efficiency of the process for both the Water Commission and City staff, I have developed a draft work plan for calendar year 2016 that lays out in some detail a proposed work plan for the first six months of the year, and includes several place-holder type activities for the last half of the year. As we approach mid-year, we can work together to make the plan for the last half of the year more specific.

During the first half of the year the work plan lays out a series of items that focus on financial planning and strategy issues for the Water utility. What I've tried to do with these items is provide an opportunity for presentation and discussion in one meeting with recommendations and action occurring at the following meeting. I've also indicated the schedule for Council action items the Water Commission will be considering. The schedule for both Water Commission and City Council actions on financial and water rate issues is driven by the timeline required for distributing a Proposition 218 notice and getting the revised rates in place by July 1, 2017.

Another item regularly appearing on the Water Commission work plan is the quarterly update item on the Water Supply Augmentation Strategy (WSAS). In order to leverage these update opportunities, I'm suggesting in the work plan that each quarter there be a specific focus for the Water Commission's discussions. The focus area would be in addition to update information about the progress of the WSAS work plan, and over time would allow the Water Commission to delve into a specific and relevant topic in more detail.

During the Commission's discussion of this item at its January 4th meeting, staff would respond to questions and provide clarification and receive any suggestions for modifications to the work plan. The goal of the work plan is that it provides a framework for the Commission's meetings, but that it remains a working draft and be revised as needed to meet the needs of both the Water Commission and the City.

FISCAL IMPACT: None.

PROPOSED MOTION: Accept staff's draft Water Commission work plan as a framework to focus Water Commission Efforts in calendar year 2016.

12-22-15 Working Draft – Calendar 2016 Water Commission Work Plan

Water Commission Work Plan Item	Date of Anticipated City Council Action on Water Commission Recommendations
January 4, 2016	
➢ Cost of Service Rate Analysis and Rate Structure Design (presentations and discussions)	
➢ Water Supply Augmentation Strategy (WSAS) Initial Work Plan and Resource Strategy (action)	➢ January 26th, FYI to Council on Water Supply Augmentation Strategy Initial Work Plan and Resource Strategy
	➢ Budget Adjustment to start WSAS work on Phase I ASR and Recycled Water study incorporated into City-Wide Mid-Year budget adjustment process
➢ Water Commission Calendar Year 2016 Work Plan	➢ January 26th, FYI to Council on Water Commission Calendar Year 2016 Work Plan
➢ Urban Water Management Plan Update Work Plan (informational item)	➢ January 26th, FYI to Council on Work Plan and Schedule for updating the Urban Water Management Plan
➢ Update to the City's Landscape Ordinance to align it with new state requirements (action)	➢ February 9th, 1st reading of revised City Landscape Ordinance
	➢ February 23rd, Public Hearing and Council Action on revised Landscape Ordinance
February 1, 2016	
➢ Election of Officers	
➢ Recommendations to City Council on Cost of Service Analysis and Rate Structure Design (action)	➢ February 23rd Council evening session on Cost of Service Study, Rate Design and Water Department Financing Strategy (any direction to staff prior to bringing back finals for Council action in March)
	➢ March 8th, Council action on Cost of Service Study and Rate Design
➢ Inputs and Outputs of Capital Financing Plan and Water Rate Increase Work (presentation and discussion)	
○ Draft Water Department CIP and Budget for FY 17 (presentation and discussion) (input to Financing Plan)	
○ Draft 10 Year Financial Plan and Financing Strategy for CIP (presentation and discussion) (Input to Revenue requirements used for rate making)	
○ Water Rate Increase Proposal (presentation and discussion)	
➢ Initial Water Supply Outlook (informational – written item only)	
March 7, 2016	
➢ Recommendations to City Council on Department Financing Strategy (action)	➢ March 22nd, Council action on Department Financing Strategy
➢ Recommendations on Proposed Water Rate Increases (Action)	➢ March 22nd, Council Authorization of 218 Notice for Water Rate Increases
	➢ June 14th City Council Public Hearing on Water Rate Increases
➢ WSAS Work Plan Update (focus on regional partnerships)	
April 4, 2016	
➢ Recommendations on Water Conservation Master Plan (action)	➢ April 12th, Council action on Water Conservation Master Plan
➢ 2016 Water Supply Outlook and recommendations regarding water supply 2016 peak season demand management (action if needed)	➢ April 12th, Council report and action if/as needed on 2016 peak season demand management
➢ Recommendations FY 2017 Operating Budget (action) and FY 2017 – 2020 Capital Improvement Program (action)	➢ May 24th Council Budget Hearings on FY 17 Budget and CIP
	➢ June 14th Council Action on City of Santa Cruz FY 17 Budget and CIP
➢ Progress report on work on the Urban Water Management Plan	
May 2, 2016	
➢ Informational Item on Groundwater Sustainability Planning in Mid and Northern Santa Cruz County (Possible Panel presentation from S-AGMC, Santa Margarita Basin?)	
➢ Review of Urban Water Management Work Plan (presentation and discussion)	
June 6, 2016	
➢ WSAS Quarterly Review – focus on Progress Report on status of in lieu recharge and performance metrics for ASR	
➢ Water Commission Work Plan for second half of calendar 2016	
➢ Recommendations to Council on Urban Water Management Plan	June 28th Public Hearing on Urban Water Management Plan
July 4, 2016	
August 1, 2016	
➢ System Water Loss Evaluation (presentation and discussion)	
September 7, 2016	
➢ WSAS Quarterly Review – focus Soquel-Aptos Groundwater Model and Regional Partnerships	
October 3, 2016	
November 7, 2016	
December 5, 2016	
➢ WSAS Quarterly Review – focus on treatment processes and effectiveness for advanced treated recycled water or climate change update	

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WATER COMMISSION
MEMORANDUM

DATE: 12/22/15

AGENDA OF: January 4, 2016

TO: Water Commission

FROM: Rosemary Menard Water Director

SUBJECT: Water Supply Augmentation Strategy, Initial Work Plan

RECOMMENDATION: That the Water Commission review and provide comment on the initial work plan for the Water Supply Augmentation Strategy.

BACKGROUND: The Water Supply Advisory Committee (WSAC) completed their work in early October 2015 with a recommended packaged strategy to deliver long-term water supply security to the City of Santa Cruz water customers. The City Council accepted the WSAC Agreements and Recommendations Final Report at their November 24, 2015 meeting, directed staff to integrate the WSAC-recommended water supply packaged strategy into the Urban Water Management Plan update, directed the Water Commission to assume oversight of the implementation of the agreements and recommendations, and supported staff's continuing public information and engagement on water supply strategy.

Staff has been preparing scopes of work, schedules and budgets for the new recommended elements namely In Lieu, Aquifer Storage and Recovery, and Recycled Water. The Department's work plan will focus on existing projects, the supply augmentation elements, as well as other items related to the development of the water supply alternatives being considered as described more fully below and on the attached.

DISCUSSION: Two tables are provided with this staff report: a capital improvement program for FY2016 ("modified") through 2025, and an initial work plan for the Water Supply Augmentation Strategy for calendar years 2016 through 2020.

Capital Improvement Program (CIP)

This table shows each CIP project by category: Water Sources, Collection, Treatment, Distribution, Facilities and Storage. (These categories are similar to the asset categories used in the rate study.) This CIP is similar to the one the department is currently working from with a few exceptions as described below. The timeframes and budget figures are estimates.

- The water supply augmentation elements have been added: In Lieu, ASR and Recycled Water. Note that while Desalination was part of the WSAC recommendation, it does not appear here because of the body of information already available for this alternative.
- The timeline extends (to FY2025) so as to capture the last year of major expenditures.

- From a budgeting perspective this table provides several pieces of information:
    - "Remaining Budget" includes money in the current year budget (by project) that is still available.
    - "Modified FY Approp" is the budget estimate for the remainder of FY2016.
    - A budget adjustment will be needed; it has not yet been determined if new funds will be required from the water enterprise fund.
- A project "WTP Evaluation" has been added. This project is intended to evaluate the following and their relationship to the WSAS.
    - Source Water Quality
    - Operational changes: direct diversion, increasing turbidity limits
    - Infrastructure changes: replacing Newell Creek Pipeline; modifying Felton Diversion Pumps, installing pre-treatment, or other approaches for treating winter flows

Initial Work Plan

The initial work plan includes the five years needed to determine the feasibility of the groundwater storage alternatives. The timeframes may be lengthened or shortened. Staff is working with two consultants (Pueblo Water Resources for Phase 1 of the ASR work and Kennedy/Jenks for the recycled water work) to refine the scopes of work, schedules and budgets for these two studies. The recycled water study seeks to answer questions beyond the feasibility determination for water supply purposes. In other words, how can treated wastewater be put to beneficial use rather than or in addition to a water supply source? This study will be funded in part by the City's Public Works Department, and grant funds were received from the State Water Resources Control Board.

In addition to the required budget adjustments to create and fund various projects, the Department is continuing to evaluate staffing resources. Current staff will be able to accomplish the first year or two of work; beyond that will need further consideration.

FISCAL IMPACT: There is no fiscal impact associated with this item. Staff will continue to refine the scopes of work for the two supplemental supply studies and prepare for a budget adjustment and contract approvals by City Council in January or February 2016.

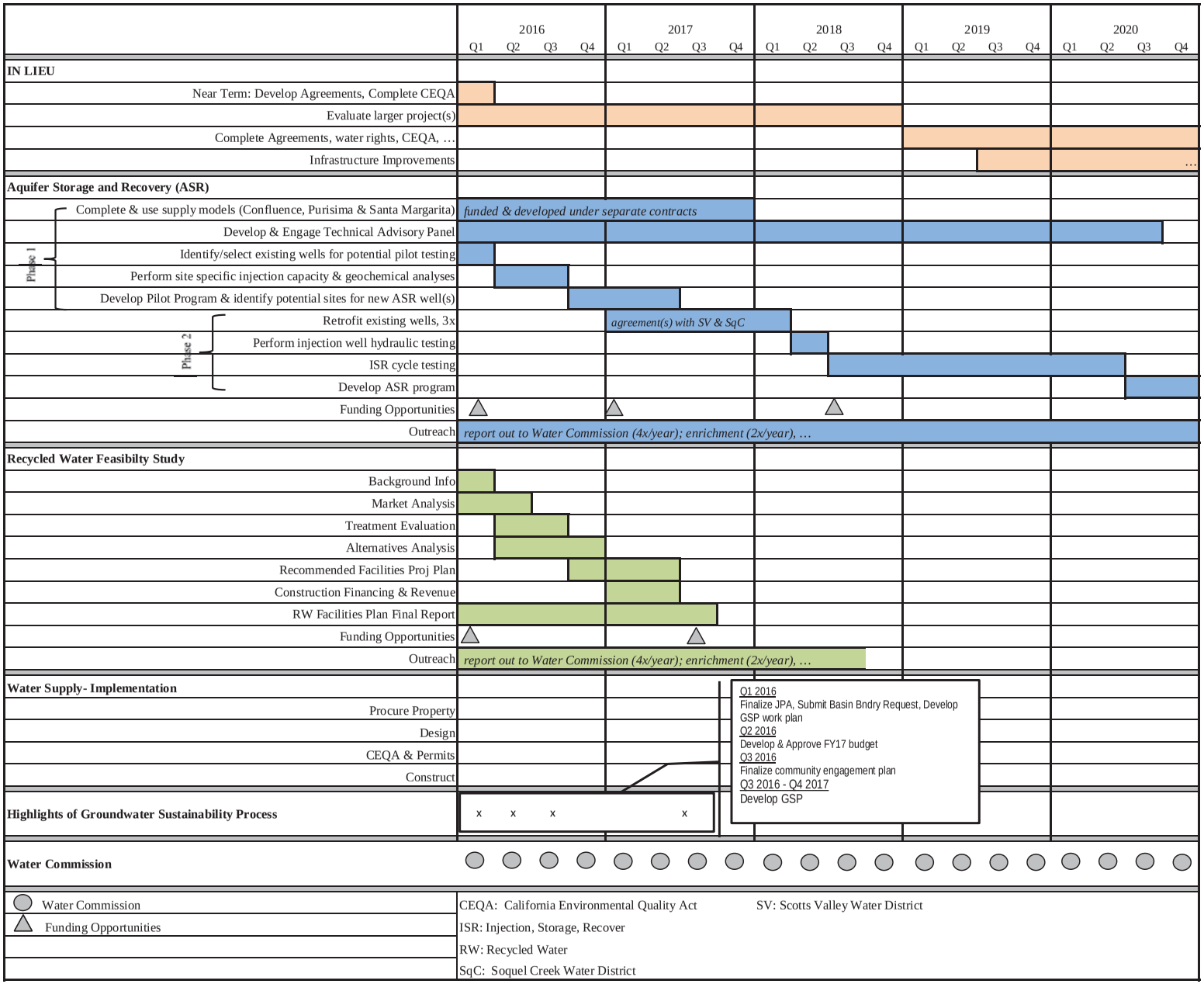
PROPOSED MOTION: Accept Water Supply Augmentation Initial Work Plan as the framework for calendar years 2016 – 2020.

Attachments

Water Department Proposed Capital Improvement Program, Fiscal Years 2016 – 2025 (revised 12/21/15)

Water Supply Augmentation Strategy, Initial Work Plan, Calendar Years 2016 – 2020 (rev 12/21/15)

Projects by Category	*Remaining Budget (avail for carryover)* *FY2016 as of 12/02/15*	Modified FY Approp. FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025
WATER SOURCES											
Felton Diversion - Eval & Construct	*$ 300,000*			$ 1,500,000	$ 1,500,000	$ 1,500,000					
San Lorenzo River Diversion and Tait Wells	*$ 237,873*										
Construction		$ 800,000									
IN LIEU (in operating budget)											
ASR (draft budget estimate)		$ 350,000	$ 25,000	$ 1,075,000	$ 325,000	$ 300,000					
Recycled Water (draft budget estimate)		$ 162,601	$ 162,601								
Water Supply- Implementation	*$ 909,591*										
Procure Property						$ 1,200,000	$ 1,200,000				
Design							$ 5,000,000	$ 5,000,000			
CEQA & Permits							$ 1,000,000	$ 1,000,000			
Construct									$ 30,000,000	$ 30,000,000	$ 30,000,000
Sources	*$ 1,447,464*	$ 1,312,601	$ 187,601	$ 2,575,000	$ 1,825,000	$ 3,000,000	$ 7,200,000	$ 6,000,000	$ 30,000,000	$ 30,000,000	$ 30,000,000
COLLECTION											
Newell Creek Pipeline Rehabilitation											
Evaluation/Design		$ 200,000	$ 1,000,000	$ 1,000,000							
Construction					$ 8,000,000	$ 8,000,000					
Newell Creek Dam I/O Pipeline		$ 200,000									
Design			$ 2,000,000	$ 2,000,000	$ 2,000,000						
Construction					$ 12,000,000	$ 12,000,000	$ 12,000,000				
North Coast System Rehab	*$ 3,002,518*		$ 4,000,000								
Evaluate/Construct Subsequent Phases			$ 150,000								
Collection	*$ 3,002,518*	$ 400,000	$ 7,150,000	$ 3,000,000	$ 22,000,000	$ 20,000,000	$ 12,000,000	$ -	$ -	$ -	$ -
TREATMENT OF WATER											
WTP Concrete Tank Assessment	*$ 509,575*										
Design: Solids & Reclaim & FWT		$ 600,000	$ 600,000								
Construct: Solids & Reclaim & FWT				$ 3,000,000	$ 3,000,000	$ 3,000,000					
WTP Filter Rehabilitation and Upgrades	*$ 410,074*										
WTP Evaluation											
Source Water Quality	*$ 401,561*	$ 350,000									
Treatment Optimization			$ 500,000	$ 500,000							
Project (UV? Ozone? Floc/Sed?)					$ 3,000,000	$ 3,000,000					
Treatment	*$ 1,321,210*	$ 950,000	$ 1,100,000	$ 3,500,000	$ 6,000,000	$ 6,000,000	$ -	$ -	$ -	$ -	$ -
DISTRIBUTION OF WATER											
Water Main Replacements (all activities)	*$ 2,049,709*	$ -	$ 2,125,000	$ 2,125,000	$ 2,125,000	$ 2,125,000	$ 2,125,000	$ 2,125,000	$ 2,125,000	$ 2,125,000	$ 2,125,000
Distribution	*$ 2,049,709*	$ -	$ 2,125,000	$ 2,125,000	$ 2,125,000	$ 2,125,000	$ 2,125,000	$ 2,125,000	$ 2,125,000	$ 2,125,000	$ 2,125,000
FACILITIES											
Advance Metering Infrastructure (AMI)	*$ 50,000*						$ 50,000	$ 4,000,000	$ 4,000,000		
Loch Lomond Rec Improvements	*$ 205,049*				$ 165,000	$ 1,000,000					
Photovoltaic/SolarProjects											
Evaluation	*$ 40,000*										
Construction		$ 500,000	$ 500,000								
Facilities (incls Bunker & Water Resources bldg)	*$ 745,049*	$ 500,000	$ 500,000	$ -	$ 165,000	$ 1,000,000	$ 50,000	$ 4,000,000	$ 4,000,000	$ -	$ -
STORAGE OF WATER											
Recoat University Reservoir No. 4	*$ 195,000*		$ 75,000	$ 1,300,000							
Recoat University Reservoir No. 5	*$ 85,302*		$ 1,750,000								
Storage	*$ 2,256,614*	$ -	$ 1,825,000	$ 1,300,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Projects	***$ 11,000,000***	**$ 3,000,000**	**$ 13,000,000**	**$ 13,000,000**	**$ 32,000,000**	**$ 32,000,000**	**$ 21,000,000**	**$ 12,000,000**	**$ 36,000,000**	**$ 32,000,000**	**$ 32,000,000**


2016
Q1 Q2 Q3 Q4
2017
Q1 Q2 Q3 Q4
2018
Q1 Q2 Q3 Q4
2019
Q1 Q2 Q3 Q4
2020
Q1 Q2 Q3 Q4
IN LIEU
Near Term: Develop Agreements, Complete CEQA
Evaluate larger project(s)
Complete Agreements, water rights, CEQA, …
Infrastructure Improvements
…
Aquifer Storage and Recovery (ASR)
Complete & use supply models (Confluence, Purisima & Santa Margarita)
funded & developed under separate contracts
Develop & Engage Technical Advisory Panel
Phase 1
Identify/select existing wells for potential pilot testing
Perform site specific injection capacity & geochemical analyses
Develop Pilot Program & identify potential sites for new ASR well(s)
Retrofit existing wells, 3x
agreement(s) with SV & SqC
Phase 2
Perform injection well hydraulic testing
ISR cycle testing
Develop ASR program
Funding Opportunities
Outreach
report out to Water Commission (4x/year); enrichment (2x/year), …
Recycled Water Feasibilty Study
Background Info
Market Analysis
Treatment Evaluation
Alternatives Analysis
Recommended Facilities Proj Plan
Construction Financing & Revenue
RW Facilities Plan Final Report
Funding Opportunities
Outreach
report out to Water Commission (4x/year); enrichment (2x/year), …
Water Supply- Implementation
Procure Property
Design
CEQA & Permits
Construct
Q1 2016
Finalize JPA, Submit Basin Bndry Request, Develop GSP work plan
Q2 2016
Develop & Approve FY17 budget
Q3 2016
Finalize community engagement plan
Q3 2016 - Q4 2017
Develop GSP
Highlights of Groundwater Sustainability Process
x x x x
Water Commission
Water Commission
Funding Opportunities
CEQA: California Environmental Quality Act
ISR: Injection, Storage, Recover
RW: Recycled Water
SqC: Soquel Creek Water District
SV: Scotts Valley Water District

WATER DEPARTMENT MEMORANDUM

DATE: December 11, 2015

TO: Water Commission

FROM: Toby Goddard, Administrative Services Manager

SUBJECT: Water Efficient Landscape Ordinance

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

The Water Department now tracks only the number of projects and landscape area subject to the ordinance. The state is also asking local agencies to also report their challenges in implementing and enforcing the ordinance. Whether new and expanded rules and reporting requirements will improve compliance by local agencies is yet to be determined. DWR acknowledges itself that it is not a regulatory agency and lacks any authority to enforce this section (California Code of Regulations Title 23, Division 2, Chapter 2.7).

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

Attachments:

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

The 2015 Updated Model Water Efficient Landscape Ordinance

Guidance for California Local Agencies

INTRODUCTION

Governor Brown's Drought Executive Order of April 1, 2015 (EO B-29-15) directed DWR to update the State's Model Water Efficient Landscape Ordinance (MWELO) through expedited regulation. The California Water Commission approved the revised MWELO Ordinance on July 15, 2015. This fact sheet provides guidance to cities and counties (local agencies) in California, who are responsible for adopting and reporting on a water efficient landscape ordinance. The focus is on major changes in the MWELO which must be addressed when local agencies are revising their own local or regional ordinances.

DEADLINES AND OPTIONS FOR LOCAL AGENCY ACTIONS (Section 490.1)

Local agencies have until ***December 1, 2015*** to adopt the MWELO or to adopt a Local Ordinance which must be at least as effective in conserving water as MWELO. Local agencies working together to develop a Regional Ordinance have until ***February 1, 2016*** to adopt, but they are still subject to the December 2015 reporting requirements (see Reporting Requirements). A local agency will either integrate MWELO into an existing ordinance or establish a new, separate program. To comply, a local agency must perform one of the following actions:

- Adopt *by reference* Sections 490-495, Chapter 2.7, Division 2, Title 23 in the California Code of Regulations
- Adopt the MWELO *in detail* - Sections 490-495, Chapter 2.7, Division 2, Title 23 in the California Code of Regulations
- Amend an existing or adopt a new Local Ordinance or Regional Ordinance to meet the requirements contained in the regulations
- Take no action and allow the MWELO to go into effect by default

A local agency may choose to allow MWELO to become effective by default and then adopt a Local or Regional Ordinance at a later time. Subsequent reporting must include the details of Local or Regional Ordinances.

Local agencies are not limited to require only the levels of water conservation stipulated by MWELO. The Local or Regional Ordinance can require higher levels of water conservation, as determined appropriate by the local agency to address one of these local conditions:

- climate
- geology
- topography
- environmental conditions.

However, in such situations where a more restrictive requirement is incorporated, the local agency must make express findings that the requirement is reasonably necessary for one or more of the above conditions. Like all ordinance adoption processes, the adoption must follow the applicable rules for a public process including a public comment period and formal public proceeding during adoption.

SIGNIFICANT REVISIONS TO MWELO

Projects Subject to the Ordinance (Section 490.1)

The size of landscapes subject to the ordinance has been lowered from 2500 sq. ft. to 500 sq. ft. The size threshold applies to residential, commercial, industrial and institutional projects that require a permit, plan check or design review.

To reduce the complexity and costs for the smaller landscapes now subject to ordinance, the revised MWELO has a prescriptive compliance approach (Appendix D) for landscapes between 500 and 2500 sq. ft. Landscapes within this size range can comply either through meeting the traditional MWELO approach or through the prescriptive approach in Appendix D. The size threshold for existing landscapes that are being rehabilitated has not changed, remaining at ***2500 square feet.*** Only rehabilitated landscapes that are associated with a building or landscape permit, plan check, or design review are subject to the Ordinance.

Definitions (Section 491)

The definitions section of MWELO has been expanded to include new terms and concepts. Please see the strike-out version of MWELO at http://www.water.ca.gov/wateruseefficiency/landscapeordinance/ to review definition changes.

Water Efficient Worksheet and Water Budget (Section 492.4)

The maximum applied water allowance (MAWA) has been lowered from 70% of the reference evapotranspiration (ETo) to 55% for residential landscape projects, and to 45% of ETo for non-residential projects. This water allowance reduces the landscape area that can be planted with high water use plants such as cool season turf. For typical residential projects, the reduction in the MAWA reduces the percentage of landscape area that can be planted to high water use plants from 33% to 25%. In typical non-residential landscapes, the reduction in MAWA limits the planting of high water use plants to special landscape areas. The revised MWELO still uses a water budget approach and larger areas of high water use plants can be installed if the water use is reduced in the other areas provided the overall landscape stays within the budget. The use of special landscape areas (SLA) was not changed in the revised MWELO. The SLA provides for an extra water allowance in non-residential areas for specific functional landscapes, such as recreation, areas for public assembly, and edible gardens or for areas irrigated with recycled water.

The revised MWELO allows the irrigation efficiency to be entered for each area of the landscape. The site-wide irrigation efficiency of the previous ordinance (2010) was 0.71; for the purposes of estimating total water use, the revised MWELO defines the irrigation efficiency (IE) of drip irrigation as 0.81 and overhead irrigation and other technologies must meet a minimum IE of 0.75.

The worksheets for Maximum Applied Water Allowance (MAWA) and the Estimated Total Water Use (ETWU) have been combined into one table. (See Appendix B, Water Efficient Landscape Worksheet). As explained above, rather than using a site-wide default IE, irrigation efficiency is calculated for each hydrozone.

The revised ordinance also precludes the use of high water use plants in street median strips.

Also because of the requirement to irrigate areas less than ten feet wide with subsurface irrigation or other means that produces no runoff or overspray, the use of cool season turf in parkways is limited.

Soil Management Report (Section 492.5)

For multi-lot projects, the revised MWELO added clarification that soil testing should be completed using a soil sampling rate of approximately 1 in 7 lots or 15 percent.

Landscape Design Plan (Section 492.6)

The following changes were made to Landscape Design Plan section:

Prior to planting, 4 yards of compost must be incorporated per 1000 sq. ft. of permeable area. Compacted soils must be transformed to a friable condition. The depth of mulch required was increased from 2 to 3 inches. Graywater and storm retention components must be indicated on the landscape plan.

Irrigation Design Plan (Section 492.7)

The following changes were made to the Irrigation Design section:

Dedicated landscape water meters or submeters are required for residential landscapes over 5,000 square feet and non-residential landscapes over 1000 square feet. Dedicated meters or submeters may be either a meter supplied by the local water supplier or a privately owned submeter.

Irrigation systems are required to have ***pressure regulation*** to ensure correct and efficient operation.

All irrigation emission devices must meet the American National Standards Institute standard, American Society of Agricultural and Biological Engineers'/International Code Council's 802-2014 "Landscape Irrigation Sprinkler and Emitter Standard". ***Flow sensors*** that detect and report high flow conditions due to broken pipes and/or popped sprinkler heads are required for landscape areas greater than 5,000 square feet. Master shut-off valves that prevent water waste in case of large failures of irrigation systems due to breakage or vandalism are required on all landscapes except where sprinklers can be individually controlled.

The ***minimum width of areas that can be overhead irrigated was increased from 8 feet to 10 feet***; areas less than 10 feet wide must be irrigated with subsurface drip or other technology that produces no over spray or runoff.

The revised update requires ***the irrigation auditor to be a local agency auditor or third party auditor*** to reduce conflicts of interest. All landscape irrigation auditors must be certified by one of the U.S. EPA WaterSense labeled auditing programs. EPA WaterSense: http://www.epa.gov/watersense/outdoor/cert_programs.html

Graywater Systems (Section 492.15)

The revised MWELO added a graywater section that specifies that landscapes less than 2,500 square feet that are irrigated entirely with graywater or captured rainwater are subject only to the irrigation system requirements of Appendix D, Prescriptive Compliance Option. Graywater is allowed throughout the state under the California Plumbing Code, Ch. 16. Applicants should consult with the local building authority regarding graywater systems.

Stormwater and Rainwater Retention (Section 492.16)

A requirement was added that landscape area should have friable soil to maximize stormwater infiltration. Additional stormwater measures were recommended, but not required.

Reporting (Section 495)

Executive Order B-29-15 and the revised ordinance require that local agencies report on the implementation and enforcement of their single agency Local Ordinances to DWR by December 31, 2015. Local agencies developing a Regional Ordinance must report on adoption by March 1, 2016. Reporting for all agencies is due by January 31st of each year thereafter. The reporting requirement is a new addition to the MWELO.

In the initial reporting, a local agency states whether they are adopting a single agency ordinance or a regional agency ordinance, and specifies the date of adoption or anticipated date of adoption.

The following information is to be included in the first report by the local agency. Once stated, the information does not have to be repeated in subsequent reports unless the information changes.

- State if using a locally modified Water Efficient Landscape Ordinance (Local or Regional Ordinance) or the MWELO. If using a Local or Regional Ordinance, how is it different than MWELO; is it at least as efficient as MWELO; and are there any exemptions specified?
- State the entity responsible for implementing the ordinance.

In subsequent years, all local agency reporting will be for the calendar year. For the initial reporting period after new ordinance adoption and each year thereafter, include the following information during each reporting period:

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

For the initial reporting period after new ordinance adoption and each year thereafter, describe the following:

- The procedure for review of projects subject to the ordinance
- The actions taken to verify compliance- Is a plan check performed; if so, by what entity? Is a site inspection performed; if so, by what entity? Is a post-installation audit required; if so, by whom?
- Enforcement measures
- The challenges to implementing and enforcing the ordinance
- The educational, training, and other needs to properly apply the ordinance

Contact Information:

Julie Saare-Edmonds, DWR Senior Environmental Scientist at Julie.Saare-Edmonds@water.ca.gov or (916) 651-9676

Section	Sub-section	2015 Model Ordinance	2010 City Ordinance	Comments	Action
Applicability (Section 490.1)	Size (CII new construction projects, that require a permit, plan check or design review)	Landscapes >= 500 sq ft	All new landscapes	Our ordinance is stronger	No change needed.
	Size (Residential new construction projects that require a permit, plan check or design review)	Landscapes >= 500 sq ft;	Landscapes >= 2,500 sq ft	City's WELO applies only to Developer installed landscaping and SFD & 2-units on parcels over 10,000 sq ft	New section 16.16.070 (j) adding standards for SFR and 2-units construction on lots < 10,000 sq. ft.
	Alternative approach (Small landscapes, between 500 and 2,500 sq ft)	Prescriptive alternative: The applicant signs a statement agreeing to comply with MWE-LO. No landscape design plans, irrigation design plans or grading plans are required.	Turf limits at 25% of LA.	The City's WELO outlines only turf limitations and spray irrigation setback on all new residential construction projects.	New section 16.16.070 (j) adding standards for SFR and 2-units construction on lots < 10,000 sq. ft.
	Rehabilitated Landscapes >= 2,500 sq ft, that require a permit, plan check or design review	Has not changed	All rehabilitated commercial, industrial & public landscapes	Our ordinance is stronger for CII applicants.	No change needed.
Definitions (Section 491)		A bunch of technical definitions were added.	Relatively easy to understand definitions.	We could add some new definitions to our ordinance[1] and some we already need like "ecological restoration project", "greywater",	Changes made to Chapter 16.16.020 Definitions.

[1] I will prepare a list of those new ones I think we should add.

				“static water pressure’, and “submeter”, for example.	
Water Budget (Section 492.4)		High water plants limited to 25% and limited to “special landscape areas”. ETFA is 0.55 for residential areas, and 0.45 for non-residential.	We use 0.7		Changes made to 16.16.070 Landscape Water Conservation Standards, Section (b).
Soil Management Report (Section 492.5)	Multi –lot projects	Soil testing required for 1 in 7 lots (15%)	Only required on where significant mass grading is part of the plan.	It looks like the old MWE-LO requires soil testing on all projects, and our ordinance does not.	Changes made to 16.16.070 Landscape Water Conservation Standards, Section (g)(3).
Landscape Design Plan (Section 492.6 & Section 492.16)	Soil Amendments	4 cu yds of compost/1,000 sq ft of soil. Soil must be friable.	6 cu yds compost/1000 sq ft of soil.	Our ordinance is stronger	No change needed.
	Mulching	Mulch with 3 inches of organic material.	Mulch with 3 inches of organic material.	Our ordinance is the same.	No change needed.
Irrigation Design Plan (Section 492.7)	Metering of non – residential projects	Irrigation meter or sub-meter on landscapes of 1,000 to 5,000 sq ft.	All new landscapes required either an irrigation meter or a sub-meter.	Our ordinance is stronger.	No change needed.
	Metering of residential Projects	Irrigation meter or private submeter required for residential landscapes of 5,000 sq ft or greater.	Submeters required on new residential new construction where the lot is 10,000 sq ft or greater		Changes made to 16.16.070 Landscape Water Conservation, Section (a)(2).

	Pressure Regulation Equipment	Required	Required	Our ordinance is essentially the same.	Changes made to 16.16.070 Landscape Water Conservation, Section (f)(1) to update pressure regulation language.
	Flow sensors	Required for non-residential projects over 5,000 sq ft	Not in our ordinance		Changes made to 16.16.070 Landscape Water Conservation, Section (f)(8).
	Overhead irrigation limits	No overhead irrigation in areas less than 10 ft in any direction.	No overhead irrigation in areas less than 8 ft.		Changes made to 16.16.070 Landscape Water Conservation, Section (c) Turf Limits (2), and (e) Irrigation Design (2).
Irrigation Audit (Section 492.12)		Requires an audit by a local agency or third party auditor. Does not allow landscape designer or installer to complete audit.	City or certified auditor shall complete audit or inspection. Also, landscapes over 5,000 sq ft of turf must have a certified irrigation audit.	We can add the words "independent certified auditor" or "third party auditor assigned by the city".	Changes made to 16.16.090 Final Inspection/Water Audit (a).
Graywater System (Section 492.15)		Graywater systems encouraged. Should meet California Plumbing Code Ch. 16. Landscapes less than 2,500 sq ft entirely irrigated by graywater and rainwater systems may use the Prescriptive Alternative, Appendix D	Graywater systems encouraged.	The city gives an additional 30% to the Water Budget for use of Graywater systems.	Changes made to 16.16.070 Landscape Water Conservation, Section (i) Alternative Water Sources.

Stormwater Management (Section 492.16)		Soil must be friable. (See landscape design plan above.)	Implementing Stormwater best management practices is encouraged.		Changes made to 16.16.070 Landscape Water Conservation, Section (h) Storm Water Management.
Reporting (Section 495)		Local agencies have to report to the state on where they are in meeting the requirements of MWE-LO, including number of projects and square footages of the projects during the reporting period, after the first reporting period.	N/A	For the first reporting period (Dec 2105), we just need to describe our Ordinance and how it is different from the new MWE-LO.	

Chapter 16.16
WATER-EFFICIENT LANDSCAPING

Sections:

16.16.010 PURPOSE.

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

(Ord. 2010-11 § 2 (part), 2010).

16.16.020 DEFINITIONS.

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

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

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

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

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

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

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

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

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

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

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

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

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

(m) "Ecological Restoration Project" means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.

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

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

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

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

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

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

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

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(u) "Graywater" means untreated waste water that has not been contaminated by any toilet discharge and has not been affected by infectious, contaminated, or unhealthful bodily wastes and does not present a threat from contamination by unhealthful processing, manufacturing or operating wastes. Graywater includes, but is not limited to wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, and laundry tubs, but does include wastewater from kitchen sinks or dishwashers.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

~~(ff)~~(kk) "Mulch" means any organic material such as leaves, bark, straw, compost, or inorganic mineral materials such as rocks, gravel, and decomposed granite left loose and applied to the soil surface for the beneficial purposes of reducing evaporation, suppressing weeds, moderating soil temperature, and preventing soil erosion.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

~~(xx)~~(fff) (xx) "Valve" means a device used to control the flow of water in the irrigation system.

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

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

(Ord. 2010-11 § 2 (part), 2010).

16.16.030 APPLICABILITY.

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

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

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

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

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

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

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

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

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

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

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

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

(4) Community gardens.

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

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

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

(Ord. 2010-11 § 2 (part), 2010).

16.16.040 LANDSCAPE PLAN REVIEW AND APPROVAL REQUIRED.

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

(a) Design Review. For projects requiring design review or a discretionary land use approval, the applicant shall submit a landscape concept plan. The landscape concept plan shall include general representation of the site

features, existing and proposed buildings, proposed planting areas, and the proposed method and type of irrigation.

(b) Building Permit/Plan Check. A complete landscape plan must be submitted and found to satisfy the requirements of this chapter before the local agency can approve a building permit application, or the director can approve an application for water service and the installation of a new water meter, or authorize a change in water service. The city shall notify the applicant in writing if plans are found to be incomplete or inconsistent with the standards and indicate where such additions or revisions are necessary.

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

(Ord. 2010-11 § 2 (part), 2010).

16.16.050 PERSONS QUALIFIED TO PREPARE LANDSCAPE PLANS.

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

(Ord. 2010-11 § 2 (part), 2010).

16.16.060 CONTENTS OF PLANS.

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

(a) Project Information.

(1) Project applicant/contact person;

(2) Address;

(3) Parcel number(s);

(4) Total landscape area, in square feet;

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

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

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

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

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

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

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

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

(7) Appropriate scale and north arrow;

(8) Planting specifications and details.

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

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

(2) Static water pressure at POC;

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

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

(5) Manual shut off valves;

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

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

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

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

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

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

(12) Calculation of landscape water budget;

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

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

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

(2) Grading volume (cubic yards);

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

(4) Location and height of retaining walls;

(5) Drainage patterns and drainage control facilities.

(e) Specifications.

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

(Ord. 2010-11 § 2 (part), 2010).

16.16.070 LANDSCAPE WATER CONSERVATION STANDARDS.

(a) Dedicated Landscape Water Meter.

(1) Separate water service meters shall be required for all new landscaping, except a single-family or two-unit residence, which equals or exceeds five thousand square feet in area, and for renovated landscape sites that result in expansion of the total landscaped area equal to or more than five thousand square feet.

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

(b) Landscape Water Budget.

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

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

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

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

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

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

(c) Turf Limits.

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

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

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

(b) On slopes greater than five percent;

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

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

(d) Landscape Design.

(1) Except for areas designated for turf or high water use plants, all plants shall be composed of very low to moderate water use plants, as identified in Water Use Classification of Landscape

Species (WUCOLS Guide) or other species, including native plants that are well adapted to the climate of the region, and require minimal water once established.

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

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

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

(e) Irrigation Design.

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

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

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

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

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

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

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

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

(f) Irrigation Equipment.

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

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

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

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

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

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

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

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

(g) Soil Management, Preparation, and Mulching.

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

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

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

(h) Stormwater Management.

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

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

(i) Alternative Water Sources.

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

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

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

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

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

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

(5) Turf Limits

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

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

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

(6) Irrigation Equipment

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

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

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

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

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

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

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

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(Ord. 2010-11 § 2 (part), 2010).

16.16.080 ALTERNATIVE TO TURF LIMITATIONS.

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

(Ord. 2010-11 § 2 (part), 2010).

16.16.090 FINAL INSPECTION/WATER AUDIT.

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

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

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

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

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

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

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

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

(Ord. 2010-11 § 2 (part), 2010).

16.16.100 IRRIGATION SYSTEM MANAGEMENT AND MAINTENANCE.

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

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

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

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

(Ord. 2010-11 § 2 (part), 2010).

16.16.110 PROVISION FOR EXISTING LANDSCAPING OVER ONE ACRE IN SIZE.

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

(Ord. 2010-11 § 2 (part), 2010).

16.16.120 EXCEPTIONS.

The purpose of this chapter is to make optimum use of the water resources available to the city water department service area and to manage peak season water demands. As technology changes and more

information is available regarding plant materials, irrigation equipment and techniques, and maintenance techniques that enhance water conservation, the director may allow the substitution of well-designed conservation alternatives or innovations which equally reduce water consumption and meet the intent of this chapter.

(Ord. 2010-11 § 2 (part), 2010).

16.16.130 ADMINISTRATIVE ENFORCEMENT.

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

(Ord. 2010-11 § 2 (part), 2010).

16.16.140 LIMIT OF CITY RESPONSIBILITY.

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

(Ord. 2010-11 § 2 (part), 2010).