Water Department

Water Commission
7:00 p.m. –November 2, 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 7:01p.m. in the City Council Chambers.

Roll Call

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

Absent: G. Mead (with notification)

Staff: R. Menard, Water Director; H. Luckenbach, Deputy Director/Engineering Manager; T. Goddard Multi-Disciplinary Project Manager; A. Poncato, Administrative Assistant III;

Others: 2 members of the public.

Presentation: There were no presentations.

Statement of Disqualification: There were no statements of disqualification.

Oral Communications: Oral communications made by B. Malone.

Announcements: There were no announcements.

Consent Agenda

1. City Council Items Affecting Water

Commissioner A. Schiffrin moved the consent agenda. Commissioner D. Sterns seconded.
VOICE VOTE: MOTION CARRIED
AYES: All.
NOES: None
ABSENT: G. Mead

Items Removed from the Consent Agenda

2. Approve October 5, 2015 Water Commission Minutes
3. Approve August 24, 2015 Water Commission Minutes

D. Baskin questioned why the corrected language was not updated in the August 24, 2015 minutes and why specific amendment language was not added into the minutes. A. Poncato explained that the language from the May 4, 2015 minutes template was mistakenly left in the August 24, 2015 draft

minutes and it has since been corrected. Commissioner A. Schiffrin moved to accept the August 24, 2015 Water Commission meeting minutes. Commissioner L. Wilshusen seconded.
VOICE VOTE: MOTION CARRIED
AYES: All.
NOES: None
ABSENT: G. Mead

Commissioner A. Schiffrin moved to accept the October 5, 2015 Water Commission meeting minutes. Commissioner L. Wilshusen seconded.
VOICE VOTE: MOTION CARRIED
AYES: All.
NOES: None
ABSENT: G. Mead

General Business

1. WSAC Recommendation Report
   R. Menard, Water Director provided a presentation summarizing the WSAC recommendations. WSAC member Doug Engfer who was in attendance at the meeting added a few additional comments.

   Following the presentation, staff responded to questions from the Commission.

Commission Questions/Comments

Regarding the November 10, 2015 Joint Study Session:

What do you anticipate occurring at the joint work study session?
- Response: There will be a three part presentation covering :
  - What the problem is,
  - What alternatives were identified and evaluated, and
  - What the recommendations are.

  The goal of the presentation is to help the public, the City Council and the Water Commissioners understand the main points of the WSAC recommendation. Various members of the WSAC will participate in presenting the WSAC results.

  Following the presentation, there will be time for Council and Commission members to ask questions, and then there will be time for public comment. No decisions are expected to be made at the study session. Council action is expected to take place at the Council's November 24th meeting.

Will there be an opportunity for interactive questioning?
- Response: Yes. Regarding the Report Document:

Questions and Comments Regarding the WSAC Report Content

Will the WSAC final report be revised following the study session?

- Response: No.

Regarding the graph at the bottom graph on page 10: it would be easier to understand if all the dates were included (even though the dates are not sequential).

- Response: Understood

Regarding the estimates of UCSC's estimated build-out demand on page 11, what enrollment level was used as the basis for a build out demand of 349 mgy?

- Response: The number came from the work that was done on the University's 2008 Long Range Development Plan (LRDP) and the water supply assessment that was done for the LRDP, which had a projected enrollment of 19,500 students by 2020.

Regarding the information on page 18 about monthly rainfall averages under (f) List of Key Assumptions for Econometric Demand Forecast, was climate change incorporated into the demand forecast in some way?

- Response: No, climate change was looked at on the supply side and evaluated there. In the future, when the demand model is used in future forecasts, we can incorporate climate change information if/when it becomes clear what the trends are.

Regarding the reference on page 24, to a "City Proposal" what is that referring to?

- Response: City Proposal refers to a fish flow regime.

Regarding the paragraph on page 30, that discusses whether or not there had been a thorough evaluation of alternatives at earlier stages of the City's water supply planning efforts, it was suggested that this language be considered for editing to recognize the level of evaluation of alternatives done during this earlier work.

Regarding water conservation savings, a question was raised about how to make sense of the numbers in the second paragraph from the bottom of page 44 and whether or how they were figured into the 1.2 billion gallon gap.

- Response: Ongoing demand management (Program A), plumbing code changes and price elasticity were included as factors reducing demand and incorporated into the demand forecast. Water Conservation Program Crec (170 mgy) was assumed to be in place in the supply model and was figured into the 1.2 bg worst year gap. The incremental additional 30 to 80 mgy of conservation that would come from meeting the goal of 200 to 250 mgy of demand reduction through conservation was not included in the 1.2 by worst year number.

Was it assumed that the savings from the price increases, the plumbing and building codes, Program Crec and existing program would occur and we would still have a 1.2 billion gallon gap?

- Response: Yes.

Regarding the reference on page 54, to a goal of further reducing demand in 2035 by generating an additional 200 to 250 million gallons of demand reduction, is this amount in addition to the 170mgy from Program Crec?

- Response: No

To confirm, there is an estimated 1.2 bg shortfall in the worst case year and in addition to the demand reductions associated with Program Crec, an additional 30 to 80 mgy of demand reduction are expected to be produced by 2035?

- Response: Yes.

Has anyone converted the numbers to figure out how many gallons per day we are saving with our conservation programs?

- Response: System wide gpcd is roughly estimated to be 80 gallons per person per day (compared to about 95 -100 gpcd for system wide demand now).

Regarding the Table 15 on page 49, a clarification would be helpful. It talks about in lieu and ASR and combined in lieu, ASR. Does that mean the city will do one or the other and not both of them? It isn't clear why the ASR figures are the same as the Combined in lieu and ASR figures.

- Response: The in lieu yield figure listed in the table is limited by how much other user can take in the winter time as it is limited by their demand. The in lieu and ASR analysis were done on the assumption that you can do one or the other. The reality is that the most likely outcome is going to be a hybrid of the two because there is more water available to store than can be used for in lieu only.

Referring to page 64, the comment was made expressing concerns about how the WSAC's recommendations include items on how the Water Department, the City Council and the Water Commission would conduct its business and take action on all of the complicated details of the work ahead.

- Response: The Information Sharing section of the report is intended to increase community confidence by laying out how progress reporting about the implementation of the WSAC's recommendations are going and thus to increase transparency and accountability.

A concern was articulated about the apparent aggressiveness of the timelines presented.

<u>Requests for Additional or Follow-Up Information:</u>

- Commissioner Schiffrin requested the website link to the AMBAG Regional Growth Forecast used in developing the demand forecast.

<u>Additional Comments:</u>

- Commissioner Wilshusen comments that she appreciates all the work the committee did and was impressed with the level attention that WSAC members everyone paid to the task.
- Commissioner Schiffrin commented that he felt it was important to have this discussion now because the Commission will have a role in the implementation of the recommendation if the Council decides to move forward with it.

- Commissioner Baskin praised Water Department staff on the final WSAC report.

Commissioner Schiffrin moved to recommend that, based on the wide consensus that the WSAC recommendations we have received thus far, the City Council evaluate the feasibility of putting the recommendations of the Water Supply Advisory Committee on a ballot for a community vote. Commissioner Schwarm seconded.
VOICE VOTE: MOTION DENIED
AYES: D. Baskin, D. Schwarm, A. Schiffrin
NOES: D. Stearns, W. Wadlow, and L. Wilshusen
ABSENT: G. Mead

Subcommittee/Advisory Body Oral Reports

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

- Loch Lomond reservoir is currently at 68% capacity, which is 10% better than it was this time last year. We are hopeful winter rains will allow us to be able to return to more normal diversions from San Lorenzo River (7-8mgd) without further depleting the reservoir. The near term weather outlook is nothing out of the ordinary, but in light of the experiences of the last few winters, ordinary would be good. The long term weather outlook is calling for a wetter than normal winter for Southern and Central California.
- Water rationing was lifted effective November 1, 2015. Action was taken by the Council on October 27th and the public was notified through publication in the newspaper.
- The San Lorenzo River had been running at around 7-8cfs but recently soared up to 30cfs due to rains today. Typically this kind of increase does not last long, especially under the drought conditions we've been experiencing over the last few years.
- At the end of January we will create a mid-season outlook based on rainfall, runoff, and storage and an initial evaluation of the conditions we may see for the 2016 demand season.
- Public Works and the Santa Cruz Fire Department have been focusing on Winter Storm Preparation. The City is hosting a community Storm Preparedness Workshop scheduled for November 21, 2015.

<u>Questions and Comments Regarding the Director's Oral Report</u>

When does our waiver from the flow releases at Newell Creek and our short term flow agreements on our flowing sources expire and what is our plan for these releases?

- Response: The Newell Creek Dam release is tentatively scheduled for February and the short term flow agreement we have with the Fish Agencies was recently extended until the end of February as well.

What is the status of the work with state and federal fishery agencies about negotiating a long term plan?

- Last April we hosted a site tour for state and federal fishery agency staff and we have been in communication with them since. We are hoping to bring the topic up again after

the first of the year. Discussion topics include dividing the two HCP's, doing the North Coast project separately, and collaborating with public and private partners on the San Lorenzo HCP.

What is the update on the interim water sales to Soquel Creek Water District?

- The proposal was verbally agreed upon by both parties and work is moving forward.

Adjournment Meeting adjourned at 9:16p.m. The next regular meeting of the Water Commission is scheduled for December 7, 2015 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: 2016.02.01 10:57:28 -08'00'

Staff

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WATER COMMISSION REPORT

DATE: September 17, 2015

TO: Water Commission

FROM: Rosemary Menard
Water Director

SUBJECT: Water Commission Schedule for 2016

January 2016
(01-04-16)

February 2016
(02-01-16)

March 2016
(03-07-16)

April 2016
(04-04-16)

May 2016
(05-02-16)

June 2016
(06-06-16)

July 2016
1st MONDAY is 07/04/16 Independence Day
Chambers booked 11th and 18th
Option #1: 06/27/16
Option #2: 07/26/16

August 2016
(08-01-16)

September 2016
1st MONDAY is 09-05-16 Labor Day
Option #1: THURS 9/8/16
Option #2: MON 9/26/16 (only MON available in OCT)

October 2016
1st MONDAY is 10-03-16 Rosh Hashanah (2nd night).
Option #1: MON 10/10/16
Option #2: MON 10/17/16

November 2016
(11-07-16)

December 2016
(12-05-16)

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WATER COMMISSION REPORT

DATE: December 1, 2015

TO: Water Commission

FROM: Rosemary Menard, Water Director

SUBJECT: Memo on Single Family Residential Water Budget Rate Structures

Over the last couple of years the Water Commission has had several opportunities to work with Sanjay Gaur from Raftelis Consulting related to water rate structure options. The most recent of these opportunities was the March 3, 2015 Joint Study Session between the Water Commission and the City Council that focused on providing Water staff and our consultant team with direction on the cost of service analysis and rate structure review and potential redesign work that was just getting underway.

Beginning in the new year, the Water Commission is going to be receiving the results and recommendations of the cost of service analysis and rate structure review. The plan is for the Commission to have two sessions on these topics, with the first one being a presentation and discussion and the second one being taking action on recommendations to the City Council.

I'm still working on the calendar for all of this and coordinating with our consultant team to make sure we're ready to go with all that you will need to understand the analysis and develop your recommendations, but I do have one piece of information/analysis that I wanted to share with the Water Commission in December as an important follow up analysis to some questions that have been raised about the potential for using a water budget type rate structure with single family residential customers.

Attached to this staff report is a memo prepared by Raftelis explaining what a water budget rate structure is, what it takes to put this approach in place, and analyzing some options for how it would work given single family consumption patterns in 2012.

I've provided this memo as an information item now and Water Department staff will be prepared to briefly respond to questions about it at the December 7th Water Commission meeting, but the real intent is to provide you with this analysis now so that you can digest it and get prepared to ask any follow-up questions at the January 4th Commission meeting where the Raftelis team will be presenting the cost of service analysis and discussing the work they've done looking at rate structure designs for the various classes of customers.

SFR WATER USE EFFICIENCY MEMO

Agency: City of Santa Cruz Water Department

Study: 2013 - 2015 Water Rate Study

SUMMARY

RFC held a pricing objectives workshop with the Santa Cruz Water Commission to help determine the most appropriate rate structure to evaluate during the 2013 Water Rate Study. Rankings from the workshop identified Water Budget as the rate structure most aligned with the City's main goals to enhance revenue stability, revenue sufficiency, and to promote efficiency[1]. As part of the study, RFC analyzed the 2012 Single Family Residential (SFR) usage data to determine the efficiency of Santa Cruz SFR customers. This analysis, which is summarized below, indicated that the SFR customers are already very efficient and that a change to Water Budget rates would not likely further increase efficiency unless the City adopts a severely restricted water budget structure. Given the level of efficiency, the potential benefits of introducing a water budget rate structure would not outweigh the costs of implementing a water budget structure.

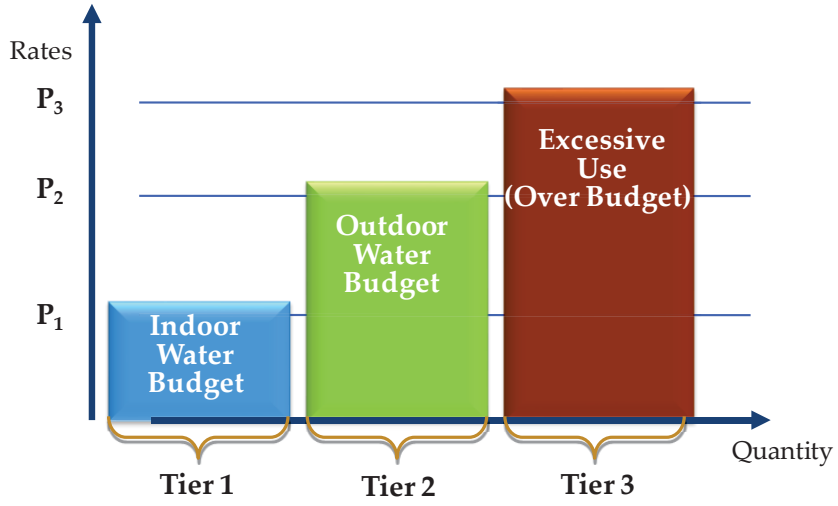
WATER BUDGET OVERVIEW

"Allocation-Based Conservation Water Pricing Rate Structure" (commonly referred to as a "Water Budget Rate Structure") is a form of increasing block rates where the amount of water within the first block or blocks is based on the estimated, efficient water needs of an individual customer. Water budget rates differ from other metered water rate designs in two key ways. First, the blocks are established based on water budgets that represent varying levels of each customer's water needs based on each customer's individual characteristics. Second, water-budget rates require the public agency to set specific standards for what is, and what is not, considered efficient water use for an individual customer.

The American Water Works Association Journal defines water budget as "the quantity of water required for an efficient level of water use by that customer" *(Source: American Water Works Association Journal, May 2008, Volume 100, Number 5)*. Therefore each customer has their own allocation or water budget. Water budget allocations are usually broken into two components: an *indoor water budget* (IWB) and an *outdoor water budget* (OWB). The indoor and outdoor budget allocations typically represent the first two tiers of an inclining tiered rate structure as shown in the Figure 1-1.

[1] The pricing objectives identified were only top three of twelve total objectives as ranked by the Water Commission.

Figure 1-1: Conceptual Water Budget Allocations



The first priority for water use is essential indoor water use (Tier 1) for health, safety and sanitary purposes. Maintaining healthy landscaping is important, yet non-essential, therefore the Tier 2 accounts for efficient outdoor water use. Tier 3 is typically for all water consumption in excess of total water budget. Tier 3 water allows individuals to use additional water above their total water budget; while providing a signal to each customer on their potential inefficient water usage. Water budgets are generally well suited for agencies with a significant number of inefficient users, which cause additional costs to be incurred by the agency to serve such inefficient usage. For example, as usage increases within the "Excessive Use" (Tier 3) the agency may increase the level of funding in its conservation programs to assist these customers in mitigating their excessive use. As such, Tier 3 provides a reasonable mechanism for providing incentives for conservation and efficiency.

WATER BUDGET CONSIDERATIONS

Implementing a water budget rate structure can be very costly and varies depending on the city or agency. There are three main categories of costs related to water budget rate structures: Data Acquisition, Implementation, and Maintenance (or on-going administration). Based on policy decisions, the agency may decide to implement a simplified budget rate structure where lot sizes are grouped, historical weather is utilized, and no variances are given. In this case, additional costs are minimized based on the type of data used and not having a variance program. Conversely, the agency may decide to implement a parcel-specific budget based rate structure where lot size allocations are formula based, actual daily weather data is utilized, and variances are allowed. When this type of water budget rate structure is selected, the city or agency would need to gather or acquire the relevant data. Information such as lot size and landscape/irrigable area for each customer account may need to be gathered. Billing systems may need to be upgraded or even purchased to enable the billing under the new rate structure. Typically, additional customer service is required during the first 6-9 months of implementing water budget rates to handle the large call volume and account for any variances in the parcel specific data, which may be outdated based on recent improvements that customers have made. These costs are hard

to quantify or even compare due to the vast range of options available. Similar to the implementation costs, the additional on-going administrative costs associated with water budget rate structures varies by agency. In the case of Santa Cruz, it is expected that, if variances are allowed, there would be a high level of call volume due to the large transient population. Household size varies significantly during the various seasons which would likely result in increased calls to customer service requesting variances. The following table shows the additional customer service staff requirements of a few sample agencies.

Table 1-1: Water Budget Implementation – Customer Service Costs

Agencies	# of Water Meters/Accts	Additional Customer Service Staff Requirements For variances and customer calls
City of Corona	~ 45,000	2 FT temps for 6-9 months
Western Municipal Water District (Retail)	Murrieta ~ 3,000 Riverside ~ 20,000	First 6 months: 4 temps Until now: 2 FT temps
El Toro Water District	~ 10,000	1 FT temp for the first 9 months
Santa Margarita WD	53,536	•Full WB: 2 FT temp for 9 months (~ $150K) •Simplified WB (no variances): 2 PT temp for 6 months (~$50K)

SANTA CRUZ CASE STUDY

For the purposes of the study, RFC utilized 2012 SFR usage data to develop water budgets under various usage scenarios.

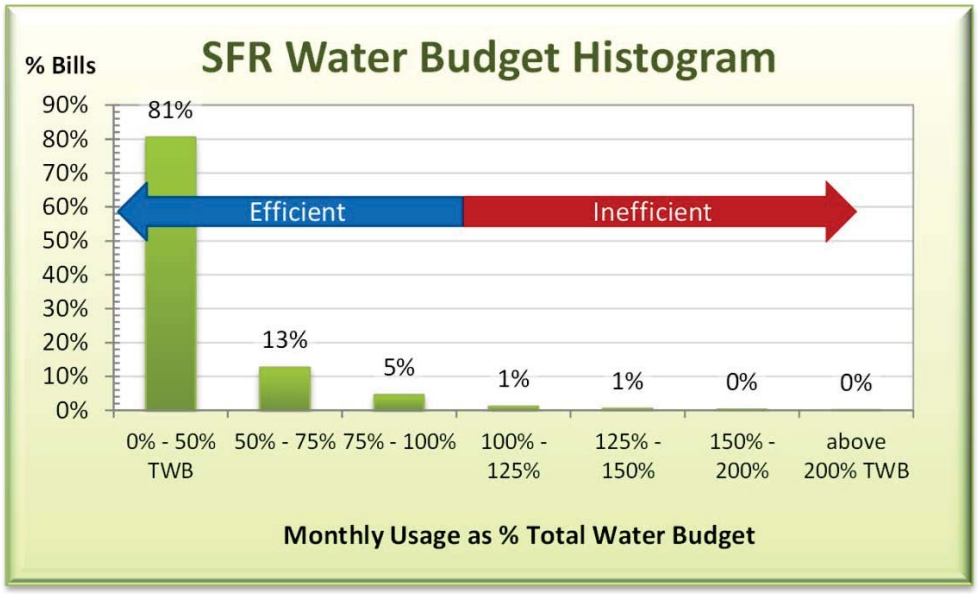
SCENARIO 1 - SFR WATER BUDGETS (NORMAL CONDITIONS)

The IWB was determined through discussions with City staff and calculated using 4 persons per household and a standard consumption of 55 gallons per capita per day[2]. The OWB was determined based on information such as irrigable landscape area and weather data. The irrigable landscape area, measured as the square footage of landscaped surface on a customer's property, was determined by subtracting both the foot print and the hardscape from the total lot size. Total water budget, which captures both IWB and OWB, defines efficient use for each customer/account. Any usage above the total water budget is considered inefficient or excessive.

[2] See Appendix A for further details regarding the IWB and OWB calculations

RFC analyzed the 2012 SFR usage data to determine the consumption patterns of Santa Cruz's SFR customers. Figure 1-2 summarizes the 2012 SFR monthly usage as a percentage of total water budget.

Figure 1-2: SFR Standard Water Budget Analysis[3]

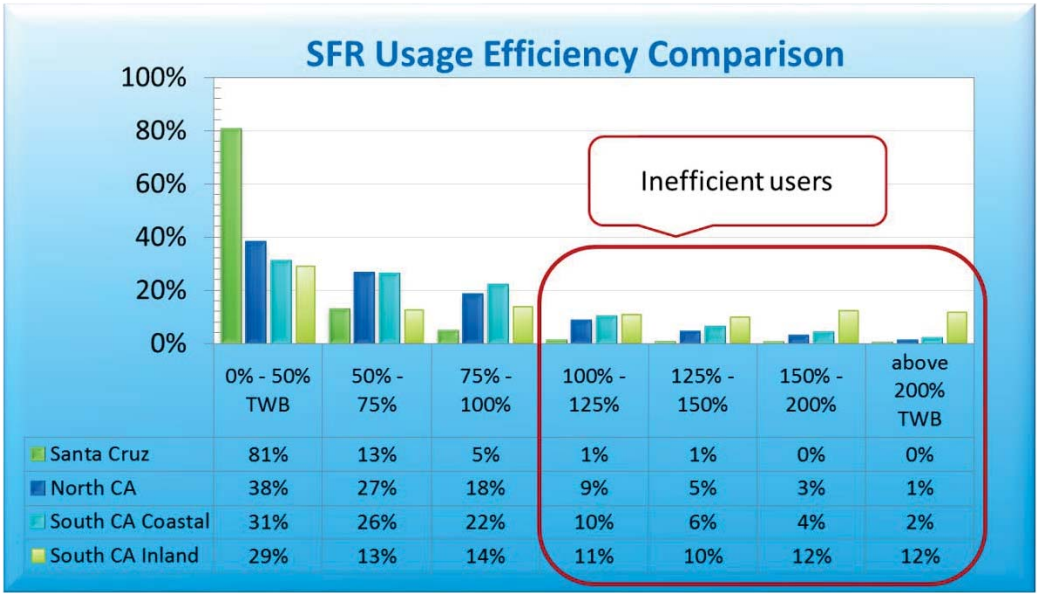


As shown above in Figure 1-2, based on the 2012 SFR consumption and standard water budgets, approximately 98-99% of all SFR customers are already considered efficient users (i.e. customer usage is equal to or less than their total water budget). In fact, 81% of SFR customers would use under 50% of their total water budget. Based on this analysis, implementing water budget rates would only send efficiency signals, i.e. encourage conservation, to less than 2% of the SFR customers. Under this scenario, if all users stayed within their total water budget the potential savings would be approximately 19 MG per year. It does not appear that implementing a water budget based structure would provide any additional substantive value compared to what the City has in place today for encouraging further conservation/efficient usage under this scenario.

RFC further analyzed Santa Cruz's SFR efficiency by comparing their usage to other agencies in California. As shown in Figure 1-3, under the standard water budgets, SFR customers are much more efficient than the other agencies. Approximately 18 to 45% of other agency's users were classified as inefficient users compared to just 2% of Santa Cruz users.

[3] Due to rounding, percentages do not add to 100%

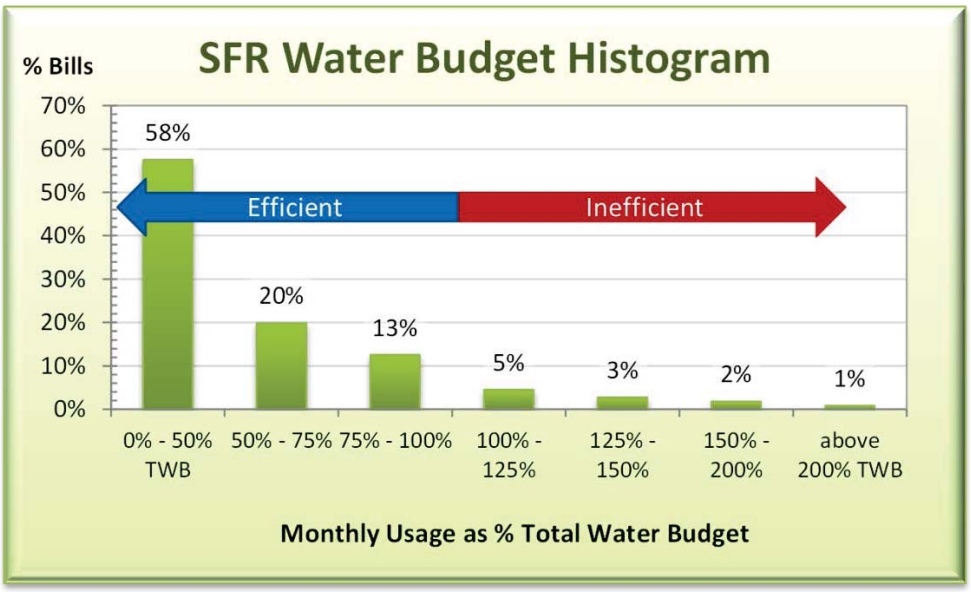
Figure 1-3: SFR Usage Efficiency Comparison



SCENARIO 2 - SFR WATER BUDGETS (RESTRICTED CONDITIONS)

RFC also analyzed SFR usage under restricted drought conditions. Under the restricted budget scenario, the IWB was determined using a default household size of 3 persons per household instead of 4. In addition, the restricted consumption was set at 50 gallons per capita per day instead of 55. The OWB was cut by 50%, reinforcing the concept that under drought conditions non-essential landscaping usage should be significantly reduced. Figure 1-4 summarizes the percentage of bills that would fall within various levels of consumption under the restricted total water budget structure.

Figure 1-4: SFR Restricted Water Budget Analysis[4]



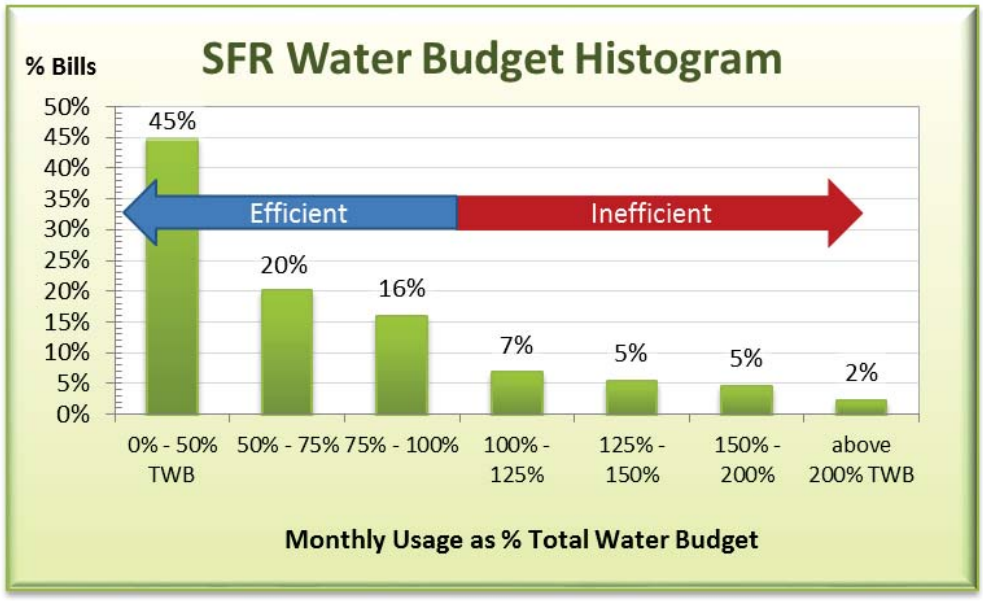
As shown in Figure 1-4 above, under the restricted usage scenario approximately 90% of all SFR customers will still stay within their total water budget. Approximately 10% of SFR Customers will fall outside of their water budget. Under this scenario, if all users stayed within their total water budget the potential savings would be approximately 74 MG per year. This analysis assumes that customers consumption patterns will remain the same even during drought conditions. However, typically during droughts, conservation messages are broadcast more frequently and people tend to conserve regardless of whether or not the rates send the signal. Based on this analysis, it appears that approximately 58% of users have already reduced non-essential water use and are very efficient.

SCENARIO 3 - SFR WATER BUDGETS (SEVERELY RESTRICTED CONDITIONS)

RFC also analyzed SFR usage under severely restricted drought conditions. Under this budget scenario, the IWB was determined using a default household size of 3 persons per household. In addition, the restricted consumption was set at 40 gallons per capita per day. The OWB was cut an additional 8%, reinforcing the concept that under severe drought conditions non-essential landscaping usage should be significantly reduced and only drought-resistant landscaping should be maintained. Figure 1-5 summarizes the percentage of bills that would fall within various levels of consumption under the severely restricted total water budget structure.

[4] Due to rounding, percentages do not add to 100%

Figure 1-5: SFR Severely Restricted Water Budget Analysis[5]



As shown in Figure 1-5 above, under the severely restricted usage scenario approximately 81% of all SFR customers will still stay within their total water budget and approximately 19% of SFR Customers will fall outside of their water budget. Under this scenario, if all users stayed within their total water budget the potential savings would be approximately 135 MG per year. This analysis assumes that customers consumption patterns will remain the same even during severe drought conditions. However, typically during severe droughts, conservation messages are broadcast daily and people tend to conserve regardless of whether or not the rates send the signal. Based on this analysis, it appears that approximately 45% of users have already reduced non-essential water use and are very efficient.

CONCLUSION

RFC analyzed 2012 SFR consumption under three different water budget scenarios, normal conditions, restricted drought conditions, and severely restricted drought conditions. The analysis indicated that SFR customers are extremely efficient. A very large percentage of SFR customers used less than half of their total water budget (81% under normal conditions and 58% under restricted conditions, and 45% under severely restricted drought conditions). Less than 2% of SFR customers were considered inefficient users under normal conditions, 10% were inefficient under drought conditions, and 19% were inefficient under severe drought conditions. The potential savings of implementing a severely restricted water budget are approximately 135 MG per year. In order to potentially achieve this savings, the City would need to adopt a very restrictive water budget based on 40 gpcd. Given the conservation efforts of the City and the community and the efficiency of the City's customers, it appears that implementing a water budget rate structure would add costs for implementing the approach and would not likely further encourage water efficiency.

[5] Due to rounding, percentages do not add to 100%

APPENDIX A – WATER BUDGET CALCULATIONS

INDOOR WATER BUDGET CALCULATION

The indoor water budget (IWB) is determined by a customer's household size and a standard consumption per person. The proposed IWB formula is as follows:

$$IWB = \frac{GPCD * Household\ Size * Days\ of\ Service * DF_{indoor}}{748}$$

where

- GPCD – Gallons per capita per day. The standard consumption per person per day is set at **55** gallons based on discussions with City Staff. The restricted consumption was set at **50** and the severely restricted consumption was set at **40**.
- Household Size – Number of residents. The City policy is to provide adequate water for the health and sanitation needs. The default values for household size were set at **4** for normal conditions and **3** for restricted and severely restricted conditions.
- Days of Service. The number of days of service varies with each billing cycle for each customer. The actual number of days of service will be applied to calculate the indoor water budget for each billing cycle.
- DF_{indoor} – Indoor drought factor. The percentage of indoor water budget allotted during drought conditions. The drought factor is subject to the approval of the City Council. The indoor drought factor is currently set at 100 percent.
- 748 is the conversion unit from gallons to billing unit of hundred cubic feet (ccf).

OUTDOOR WATER BUDGET CALCULATION

The outdoor water budget (OWB) is determined by three main variables: irrigable landscape area, weather data and evapotranspiration (ET) Adjustment Factor. The irrigable landscape area, measured as square footage of landscape surface on a customer's property, was provided by the City. The weather data is based on the reference Evapotranspiration (ET_0), which is the amount of water loss to the atmosphere over a given time period at given specific atmospheric conditions. ET_0 is the amount of water (in inches of water) needed for a hypothetical reference crop to maintain its health and appearance. The ET Adjustment Factor (ETAF) is a coefficient that adjusts ET_0 values based on plant factor and irrigation system efficiency. The updated California Department of Water Resources' Model Water Efficient Landscape Ordinance (Landscape Ordinance) provides the ETAF of 80% of ET_0 for existing landscape.

The formula to calculate outdoor water budget is as follows:

$$OWB = \left(\frac{\text{Landscape Area} * ET_0 * ETAF}{1200} \right) * DF_{outdoor}$$

where

- ET_0 is measured in inches of water during the billing period based on daily data acquired from the California Irrigation Management Information System (CIMIS) Station 104, which is the closest station to the City's service area.
- ETAF (% of ET_0) is defined using the updated Landscape Ordinance as shown above.
- Landscape Area (or Irrigable Landscape Area) (in square feet) is the measured irrigable landscape area served by customer's meter.
    - Where the measured irrigable landscape area under normal conditions is:
        - $\text{Landscape Area (sq ft)} = 100\% * (\text{Lot Size - Foot Print - Hardscape})$
    - Where the measured irrigable landscape area under restricted conditions is:
        - $\text{Landscape Area (sq ft)} = 50\% * (\text{Lot Size - Foot Print - Hardscape})$
    - Where the measured irrigable landscape area under severely restricted conditions is:
        - $\text{Landscape Area (sq ft)} = 42\% * (\text{Lot Size - Foot Print - Hardscape})$
- $DF_{outdoor}$ – Outdoor drought factor. The percentage of outdoor water budget allotted during drought conditions. The drought factor subject to the approval of the City Council. The outdoor drought factor is currently set at 100 percent.
- 1200 is the conversion unit from inch*ft^2 to billing unit of hundred cubic feet (ccf).

WATER COMMISSION
INFORMATION REPORT

DATE: 10/28/15

AGENDA OF:	November 13, 2015
TO:	Water Commission
FROM:	Chris Berry, Watershed Compliance Manager Gar Eidam, Chief Ranger
SUBJECT:	Watershed Fire Preparedness Work Update

RECOMMENDATION: Receive information regarding fire preparation work performed at Loch Lomond Recreation Area and Newell Creek watershed lands during the park closure due to drought.

At the Water Commission's October 5, 2015 meeting, a request was made to receive further information regarding fire preparedness at Loch Lomond. Staff will provide a PowerPoint presentation on Loch Lomond and Newell Creek watershed lands and will be available for questions.

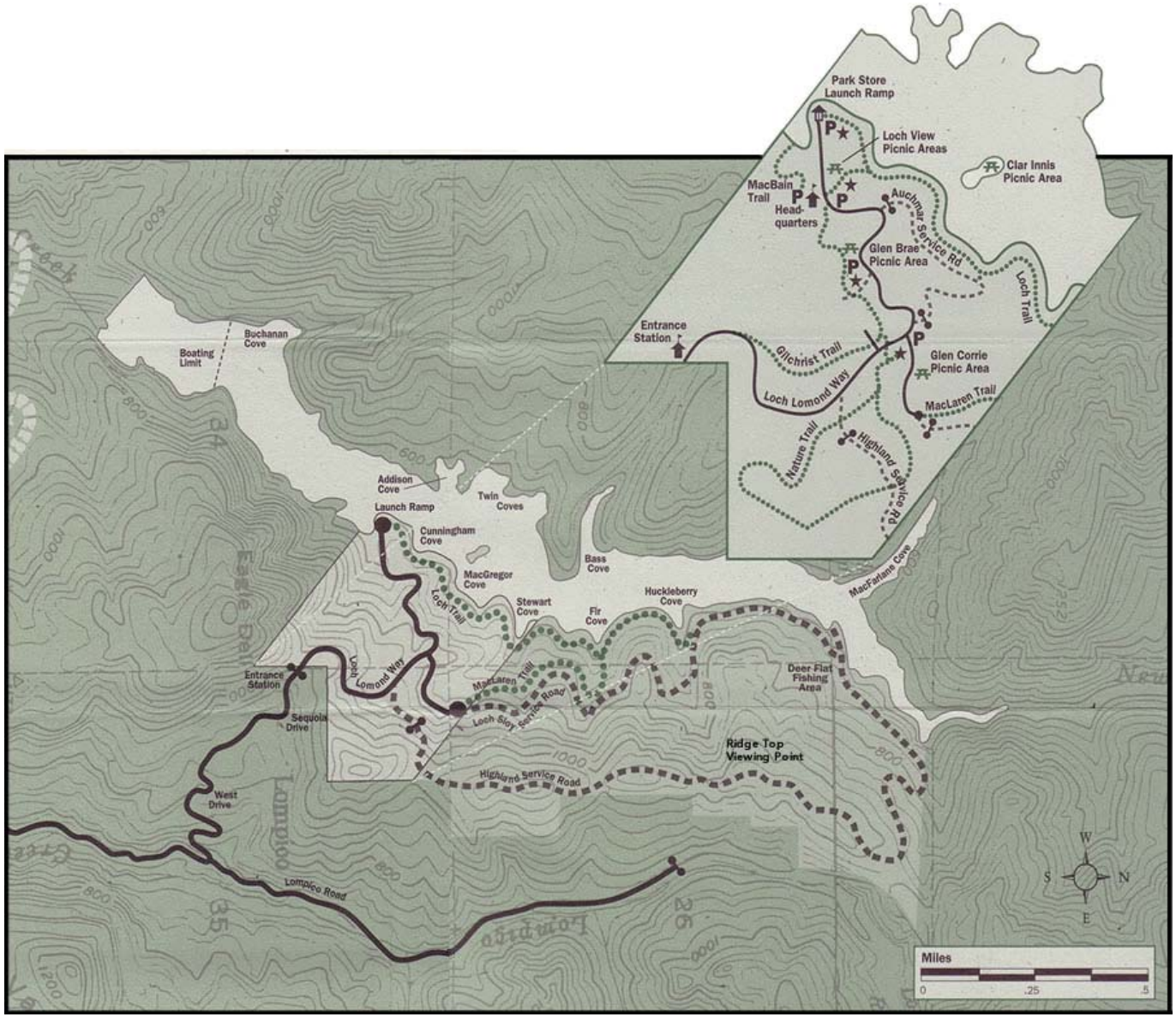
POSSIBLE MOTION: Accept staff's report on fire preparation work performed at Loch Lomond Recreation Area and Newell Creek watershed lands.

Fire Preparedness at Loch Lomond Recreation Area and Newell Creek Watershed Lands -

December 07, 2015

Loch Lomond Recreation Area

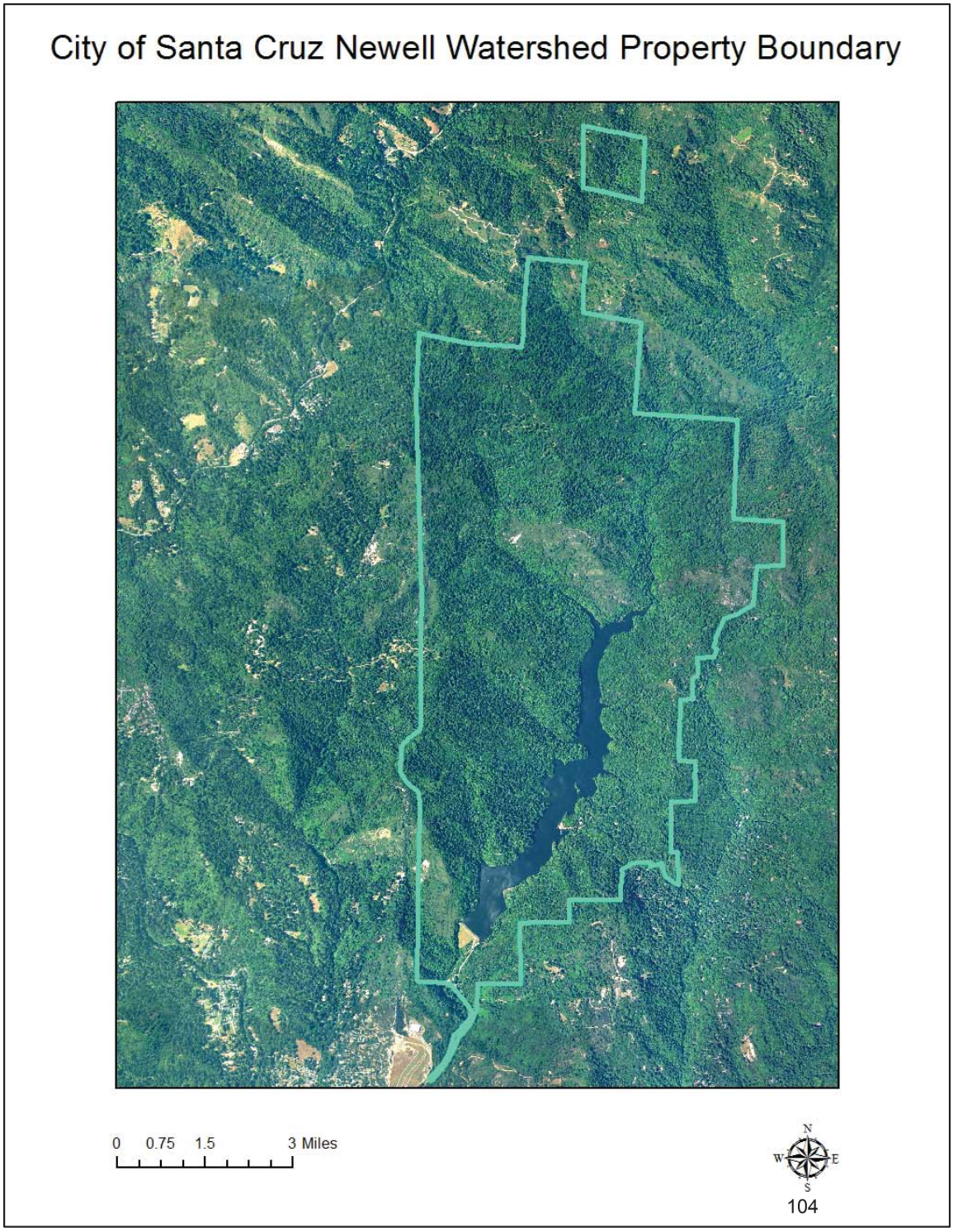
- Though the City has an obligation to manage the property for recreation, “drinking water source protection” is the primary consideration for our operations.



Loch Lomond Recreation Area

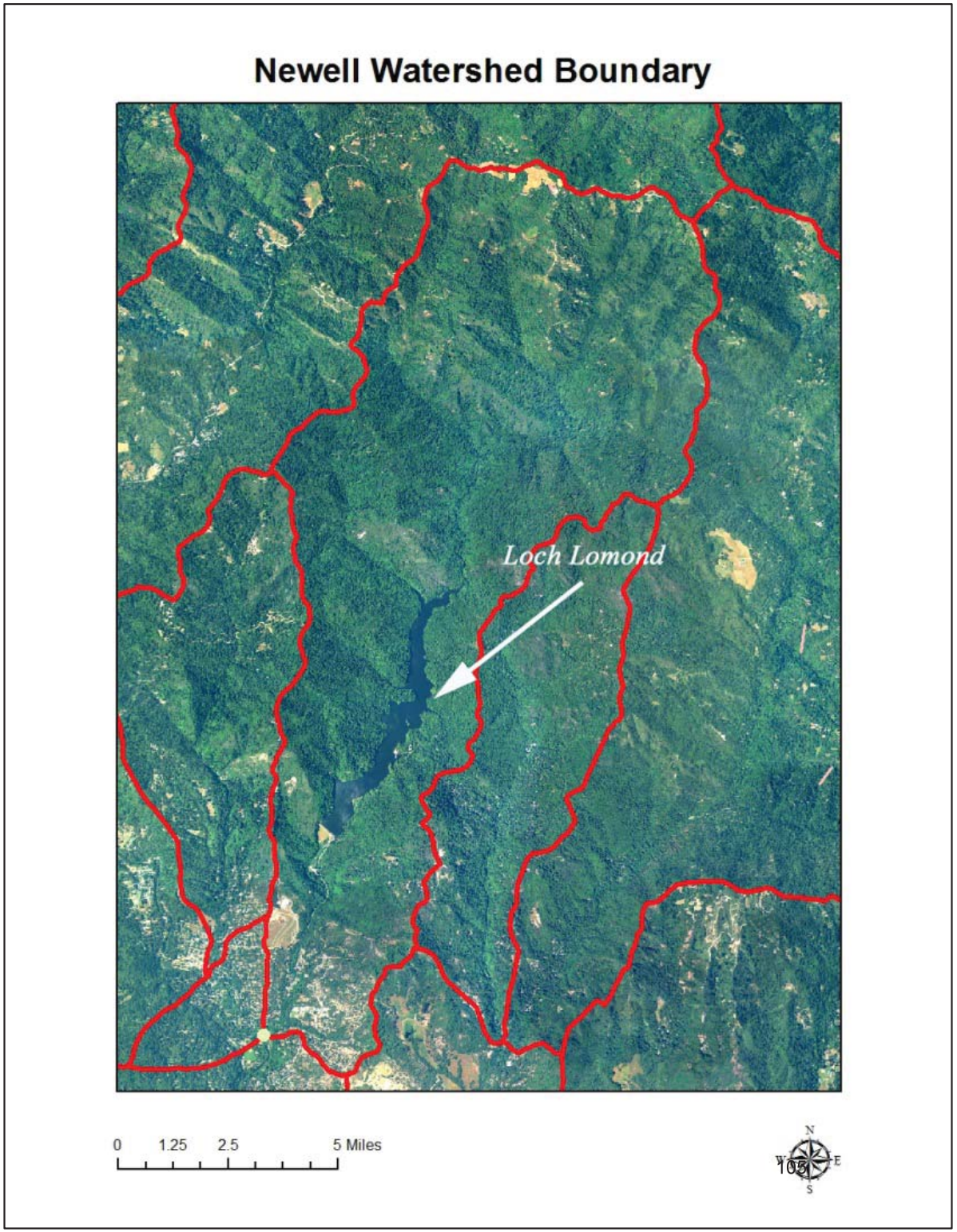
Newell Creek Watershed Property

- The City owns approximately 2,880 acres in the Newell Watershed including the Loch Lomond Recreation Area



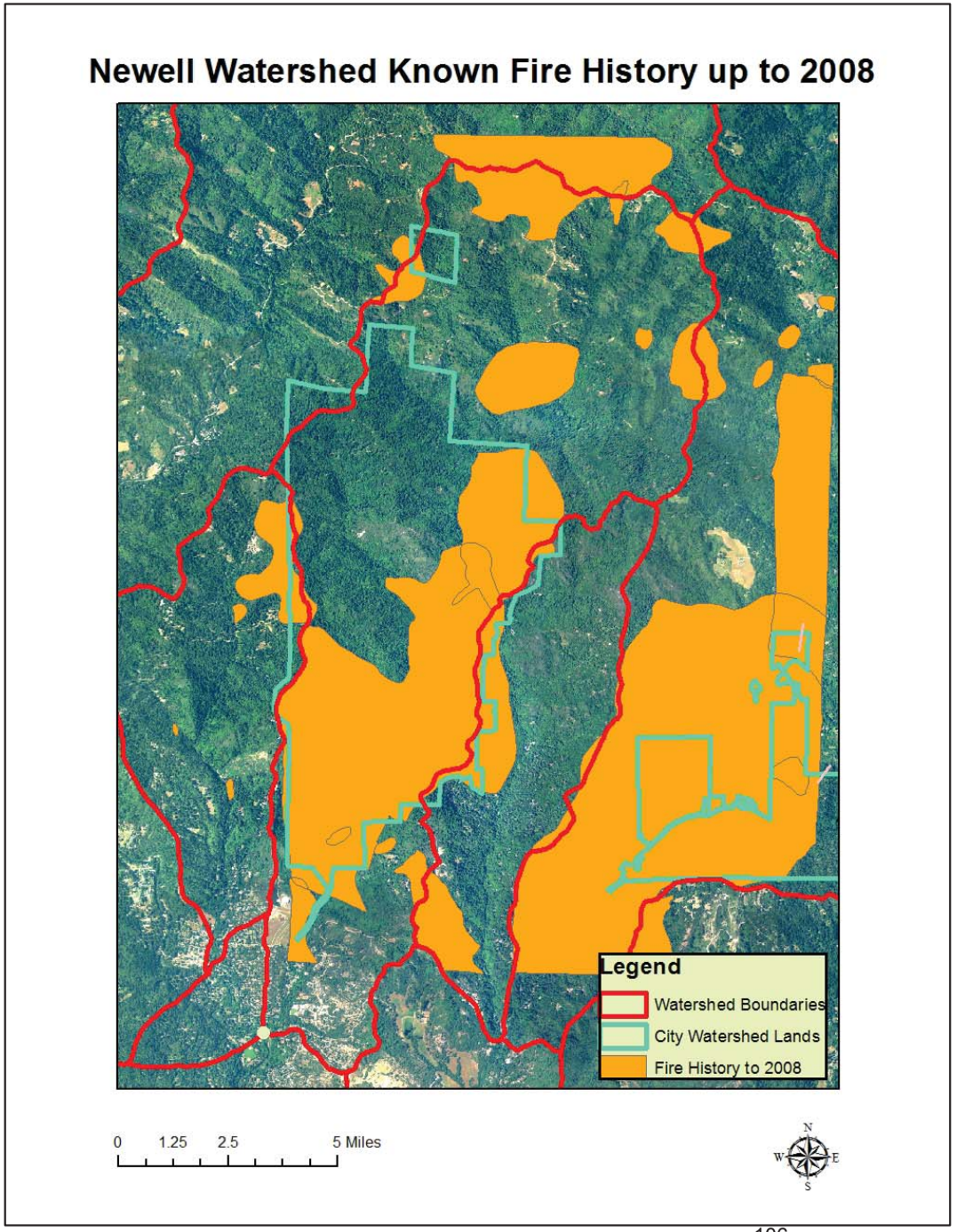
Newell Creek Watershed

- The City owns approximately 50% of the total watershed area
- Upstream land uses include agricultural, timber production, mountain residential
- Downstream land uses are primary rural residential/suburban
- Greatest potential for fire at Loch Lomond from starts outside the property in the rural/urban interface



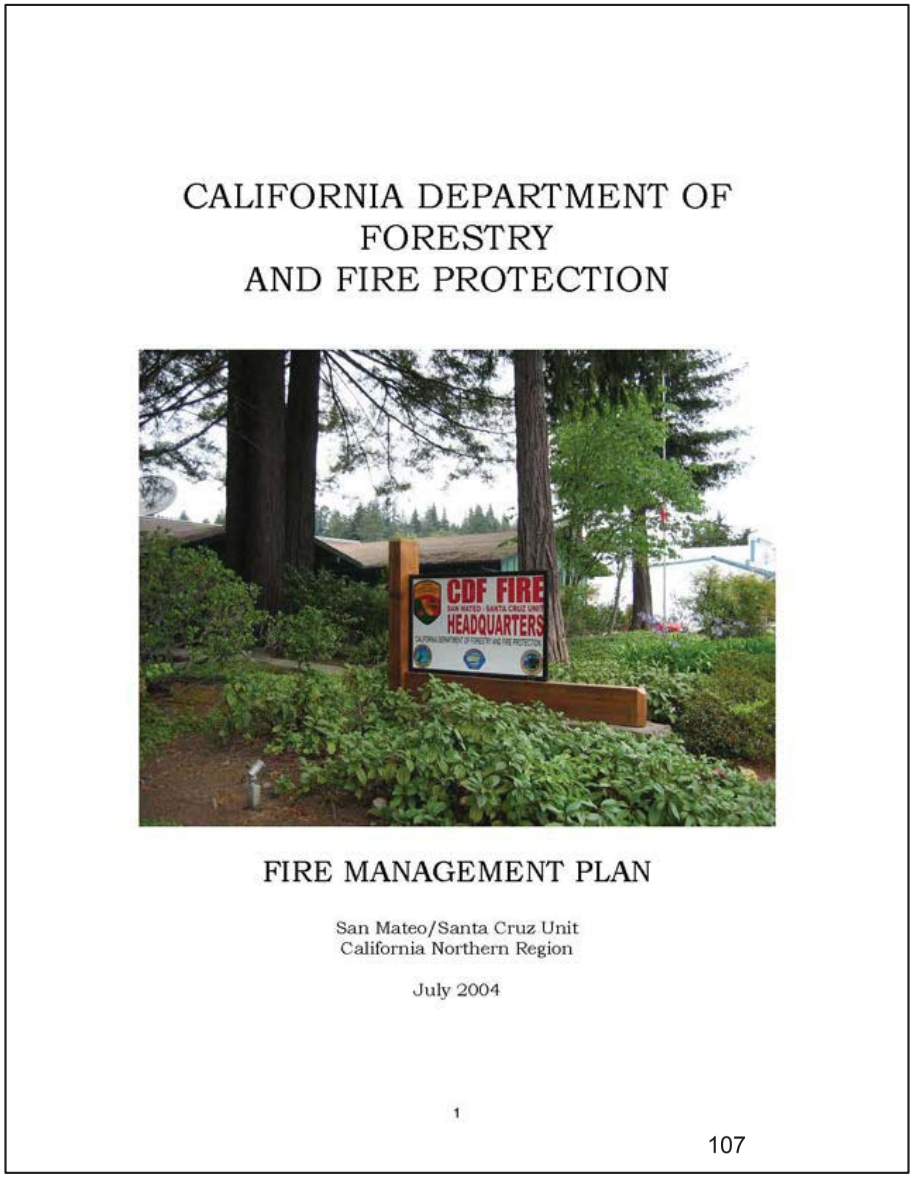
Fire Preparedness - General

- Fire preparedness work is a big component of our operations *every* year – not just in drought conditions.
- During the recent drought-related closure, fire preparedness has taken on increasing importance and was one of the primary drivers for the closure of the recreation area.
- Watershed lands are never open to the public with the exception of staff-led tours.



Historic Fire Preparedness Activities

- Developed fire plan for property
- Loch Lomond season of use
- Drought-related recreation area closures
- Watershed lands prohibition on public use
- Eagle Dell fuel break improvement
- Loch Lomond Way shaded fuel break
- Installed weather station
- Created remote access to weather station for CalFire
- Gate installation/maintenance
- Participated in development of regional fire plans
- Participated in the local Fire Safe Council
- Annual tours of properties with local fire agencies
- Road/trail network design and maintenance
- Increased focus on invasive species/ladder fuel removal along roads
- Eagle Tree Lane bridge improvements
- Outreach to Hollister CalFire airbase regarding importance of Loch Lomond to regional water supply



Recent Fire Preparedness Activities

- Recreation area closure
- Fire agency outreach
- Improved/expanded fuel breaks at Loch Sloy, Highland and Eagle's Roost
- Installed water storage tanks
- Dead and dying wood removal permit
- Expanded water access
- Increased patrols
- Surveillance cameras
- Gate numbering
- Road mile markers
- Trail reflective markings
- Fire map updates
- Helicopter landing development

Fire agency tour of expanded fuel break between upper Lompico and Newell Creek watershed lands

Fire Plan - General

- Protective policies
- Control of activities on the property
- Early fire detection/response
- Communicate with fire agencies
- Facilitate fire agency access to watershed lands
- Coordinate evacuation of recreation area visitors
- Assist other Water Department operations with fire-related issues (monitoring, infrastructure maintenance, etc.)
- Post-fire response (monitoring, trespass control, erosion control, patrol, replanting, etc.)

Weather Station adjacent to the Highland Trail

Future Fire Preparedness Activities

- More of the same…
- Near term - maintenance of effort will become more challenging when recreation area reopens.
- Long term - adding more recreational activities which increase risk of fire, decrease ability to respond to fire or reduce ability to patrol our nearly 4,000 acres of watershed lands is of paramount concern.

Watershed lands trespassers attempting to cut around gate

Questions?