

CITY OF SANTA BARBARA WATERFRONT DEPARTMENT

MEMORANDUM

Date: August 21, 2014
To: Harbor Commission
From: Scott Riedman, Waterfront Director
Subject: **Water Conservation**

RECOMMENDATION:

That Harbor Commission receive and review a report on water conservation efforts at the Waterfront.

BACKGROUND:

A Water Wise Survey of the Waterfront was performed in May of 2013 by the Public Works Department's Water Conservation Program. The purpose of the survey was to identify ways in which the Waterfront could reduce water usage and save money on its water and sewer bills. City Council declared a Stage One drought on February 11, 2014 and then a Stage Two drought on May 20, 2014. Council adopted Extraordinary Drought Regulations along with the Stage Two drought declaration requiring City water users to reduce water use by 20%.

Waterfront staff began implementation of the Water Wise Survey recommendations in April. Water conservation measures completed by staff include:

1. Adjust flush valve toilets to proper flow rate
2. Install lavatory aerators
3. Replace showerheads
4. Repair leaking pressure assisted toilets
5. Repair leaking showerheads and diverter valves
6. Install hose end shut off nozzles

Preliminary water usage results indicate that some Waterfront facilities are meeting the required 20% reduction, some facilities have significant reduction but haven't met the requirement, and some facilities have shown an increase in water usage.

WATERFRONT FACILITY TYPES:

Water usage is best tracked for three main types of Facilities: *Marinas, Landscaping, and Public Restrooms*. Of the 26 water meters billed to the Waterfront Department, most are associated with one of these facility types. Most of the meters have been assigned a base allotment of water based on historic use and/or the size of a facility. The unit of measure for a base allotment is Hundred Cubic Feet (1 HCF = 748 gallons). The base allotment for all of the water meters combined is 832 HCF per month. The

Waterfront has nine recycled water meters serving landscaped areas and some restrooms. There is no base allotment assigned to recycled water meters but the average monthly use in 2013 was 422 HCF.

Marinas

The four marinas in the harbor use the majority of water at the Waterfront. Marina One uses the most water with a base allotment of 249 HCF. All four marinas have restrooms with showers with the exception of Marina Four that has no showers but is available to the public which puts a tremendous demand on water usage. The base allotment for all the marinas is 545 HCF or approximately 43% of all the water used at the Waterfront.

The majority of staff's water conservation efforts have focused on the marinas. One of the Council's drought regulations was the prohibition of washing vessels without an automatic shut off nozzle. The City's Water Resources Division provided 1,200 automatic shut off nozzles. Staff attached nozzles to every hose in the marinas that did not have one. A total of 674 nozzles have been distributed to date (58% of all slips). In addition to the water conservation measures listed above, signage was placed on the marina gates and in the restrooms informing slipholders of the Stage Two drought declaration and the need to significantly reduce water usage.

Landscaping

Significant landscaping is found throughout the Waterfront. The Parks and Recreation Department (Parks) provides landscape maintenance for the Waterfront. Emphasis has been to maintain healthy and aesthetically pleasing landscaping in the vicinity of the Harbor Commercial area, Sea Landing, and all of the parking lots. Waterfront and Parks staff worked together to identify areas within the Waterfront most suitable for reduction in irrigation to meet the desired 20% reduction.

In general, water conservation measures associated with landscaping involves reducing the number of days irrigation is turned on. Most irrigation controllers were programmed to reduce irrigation by 25%. This allows the vegetation to remain alive although somewhat stressed as indicated by lawn areas that aren't as green as normal. To date there have been no reductions in landscape irrigation by the Breakwater Restaurant and Waterfront Center in an effort to maintain the aesthetics of the most visited area at the harbor. Irrigation has not yet been reduced for the new landscaping recently installed along the Sea Landing pedestrian walkway. The new landscaping in this area has become established and will likely have its irrigation reduced in the near future.

Public Restrooms

The Waterfront maintains eight public restrooms at the harbor and three at Stearns Wharf. Staff implemented the majority of the recommended water conservation measures at each public restroom. Nevertheless, the majority of the public restrooms do not have fixtures such as dual flush valves or waterless urinals to reduce water use. Water conservation efforts focused on fixing leaks, adjusting valves, and installing

faucet aerators which make the most efficient use of existing fixtures. Replacing fixtures with more water efficient devices is normally done in conjunction with capital improvements similar to what was recently done at the 119 Building restroom, located below Brophy Brothers Restaurant.

The Waterfront also provides free outdoor showers at two locations, Leadbetter Beach and Sea Landing. The showers have timers on them to limit the amount of water used. In general, the showers are used by people that engage in recreational activities such as ocean swimming, kayaking, and paddling outrigger canoes. There has been a significant increase in use by the city's transient population these past few years since the showers are free, easily accessible, and available 24 hours a day.

WATER CONSERVATION RESULTS:

Water use data is somewhat limited since staff began implementing water conservation efforts in April. Water meter readings from May, June, and July have shown some trends for the three different Facility Types at the Waterfront. The number of days in each billing cycle varies from month to month and year to year. For the sake of determining the percent reduction, water use was calculated on an HCF/day basis which provides a more accurate comparison of water use from one year to the next.

Marinas

The majority of the recommended water conservation measures were implemented at each marina, including the restrooms. July and August results indicate that we are on target to maintain a reduction of at least 20% as required by the Stage Two drought declaration and corresponding regulations for Marinas 1, 2, and 3. Marina 4 water use reduction is approximately 10% most likely due the restroom's availability to the public.

Landscaping

Landscape irrigation was reduced immediately after the Stage 1 drought declaration. Since May, water usage has been reduced 20% - 30% for most irrigation. Recycled water is used for landscape irrigation where possible. This water source is often comingled with restrooms making it difficult to isolate landscape irrigation from water use in restrooms (recycled water can be used in urinals and toilets). Nevertheless, where irrigation controllers are dedicated to landscaping only, irrigation has been reduced ensuring that a reduction of at least 20% can be achieved.

Public Restrooms

Water conservation measures were implemented at each public restroom to the extent feasible. Unfortunately there has been limited reduction in water usage at some of these facilities. Results vary from month to month but in general there has been limited reduction or an increase in water usage at public restrooms that receive the most

visitors such as the restrooms on Stearns Wharf, Garden Street (Visitors Center), and Leadbetter Beach.

SUMMARY:

As of the July billing, water usage at the Waterfront has been reduced by approximately 15% overall. Water usage at the marinas and landscape irrigation has been reduced by over 20% in general. There has been limited reduction in water usage at several of the public restrooms.

Several issues have the potential to impact water usage at the Waterfront. For example, the USS Reagan took on 78,000 gallons (104 HCF) during their visit essentially doubling the amount of water provided through the meter that serves the City Pier, Ice House, and Fuel Dock during that billing cycle. The following month, a water leak was detected on the Cabrillo Landing docks. The leak went undetected for over a day (many water lines on docks are under water and therefore detecting leaks can be difficult). The leak was fixed but also doubled the amount of water provided through the meter that serves the Waterfront Center common area, Cabrillo Landing, and surrounding irrigation.

Perhaps the most significant change in water usage comes as a result of increased visitation at the Waterfront. Examples of increased visitation include; visiting boaters up 18%, parking revenues on Stearns Wharf up 8%, and restaurant sales throughout the Waterfront up 10%. The lack of reduction in water usage in many of the public restrooms is most likely attributable to this increased visitation.

In an effort to achieve at least a 20% reduction at the Waterfront overall, additional water conservation measures will be implemented. Waterfront staff will work with Parks to identify areas where landscape irrigation can be reduced. Staff will inspect the public restrooms and make the necessary adjustments to ensure the proper flow rates. Additional signage will also be installed at the public restrooms in an effort to persuade visitors to conserve water. Staff will continue to monitor water usage throughout the Waterfront and implement additional water conservation measures as necessary.

Attachment: 2013 – 2014 Water Usage Comparison Spreadsheet

Prepared by: Karl Treiberg, Waterfront Facilities Manager

Description	Base Allotment (HCF)	April 2013 (HCF) 32 days		April 2014 (HCF) 32 days		% Increase/Decrease	May 2013 (HCF) 30 days		May 2014 (HCF) 29 days		% Increase/Decrease	June 2013 (HCF) 29 days		June 2014 (HCF) 31 days		% Increase/Decrease	July 2013 (HCF) 29 days		July 2014 (HCF) 31 days		% Increase/Decrease	August 2013 (HCF) 32 days		August 2014 (HCF) 29 days		% Increase/Decrease
		HCF/Day	HCF/Day	HCF/Day	HCF/Day		HCF/Day	HCF/Day	HCF/Day	HCF/Day		HCF/Day	HCF/Day	HCF/Day	HCF/Day		HCF/Day	HCF/Day	HCF/Day	HCF/Day		HCF/Day	HCF/Day	HCF/Day		
Marina 1 - Rstrms (401 Shoreline)	249	205	6.4	246	7.7	20.0%	291	9.7	251	8.7	-10.8%	311	10.7	305	9.8	-8.3%	384	13.2	297	9.6	-27.6%	396	12.4	244	8.4	-32.0%
M4 / Galley / S.B.Boat Rental / Boat Wash (401 Shoreline)	120	127	4.0	121	3.8	-4.7%	159	5.3	117	4.0	-23.9%	146	5.0	143	4.6	-8.4%	168	5.8	164	5.3	-8.7%	192	6.0	156	5.4	-10.3%
Marina 2 Docks / Rstrms	110	108	3.4	108	3.4	0.0%	138	4.6	84	2.9	-37.0%	126	4.3	90	2.9	-33.2%	131	4.5	102	3.3	-27.2%	125	3.9	81	2.8	-28.5%
City Pier/Fuel Dock/Ice House (401 Shoreline)	93	79	2.5	70	2.2	-11.4%	143	4.8	56	1.9	-59.5%	97	3.3	204	6.6	96.7%	122	4.2	88	2.8	-32.5%	120	3.8			
M3 Irrigation/Drinking Fnt/Rstrms (401 Shoreline)	66	102	3.2	72	2.3	-29.4%	79	2.6	73	2.5	-4.4%	76	2.6	71	2.3	-12.6%	98	3.4	80	2.6	-23.6%	96	3.0	70	2.4	-19.5%
Waterfront Ctr. - CAM (113 Harbor Way)	56	65	2.0	64	2.0	-1.5%	74	2.5	57	2.0	-20.3%	67	2.3	51	1.6	-28.8%	58	2.0	91	2.9	46.8%	66	2.1			
Char West Restrooms (221 Stearns Wharf)	43	57	1.8	94	2.9	64.9%	46	1.5	88	3.0	97.9%	58	2.0	86	2.8	38.7%	98	3.4	73	2.4	-30.3%	121	3.8			
Irrigation - Breakwater (401 Shoreline) What does this serve?	32	50	1.6	20	0.6	-60.0%	61	2.0	45	1.6	-23.7%	78	2.7	72	2.3	-13.6%	58	2.0	62	2.0	0.0%	108	3.4			
Leadbetter Restrooms? (803 Shoreline Drive)	18	14	0.4	22	0.7	57.1%	18	0.6	24	0.8	37.9%	30	1.0	35	1.1	9.1%	42	1.4	50	1.6	11.4%	41	1.3			
Brophy Bros/Rstrms (119 Harbor Way)	16	0	0.0	33	1.0		0	0.0	30	1.0		10	0.3	33	1.1	208.7%	46	1.6	38	1.2	-22.7%	47	1.5			
Dolphin Fnt / Restrooms (1 State Street)	7	11	0.3	13	0.4	18.2%	8	0.3	7	0.2	-9.5%	8	0.3	7	0.2	-18.1%	7	0.2	8	0.3	6.9%	11	0.3			
Sea Landing - Irrigation/ Drinking Ftn>Showers? (301 W. Cabrillo)	7	4	0.1	7	0.2	75.0%	12	0.4	7	0.2	-39.7%	15	0.5	9	0.3	-43.9%	19	0.7	16	0.5	-21.2%	15	0.5			
Sea Center - Restrooms (211 Stearns Wharf)	5	4	0.1	4	0.1	0.0%	6	0.2	4	0.1	-31.0%	5	0.2	4	0.1	-25.2%	5	0.2	4	0.1	-25.2%	7	0.2			
Garden Street - Restroom (11 Garden Street)	3	3	0.1	5	0.2	66.7%	3	0.1	7	0.2	141.4%	5	0.2	7	0.2	31.0%	5	0.2	8	0.3	49.7%	7	0.2			
Maint. Shop/OTA? (117C Harbor Way)	3	3	0.1	3	0.1	0.0%	3	0.1	3	0.1	3.4%	2	0.1	4	0.1	87.1%	2	0.1	3	0.1	40.3%	3	0.1			
Old Wharf Building (217 Stearns Wharf)	3	1	0.0	2	0.1	100.0%	2	0.1	2	0.1	3.4%	7	0.2	1	0.0	-86.6%	1	0.0	2	0.1	87.1%	2	0.1			
Maint. Yard (116 Harbor Way) 2" Connection?	1	1	0.0	1	0.0	0.0%	1	0.0	1	0.0	3.4%	0	0.0	1	0.0		1	0.0	1	0.0	-6.5%	1	0.0			

Irrigation - M2 (401 Shoreline)	None	142	4.4	4	0.1	-97.2%	232	7.7	89	3.1	-60.3%	216	7.4	142	4.6	-38.5%	182	6.3	153	4.9	-21.4%	265	8.3			
Irrigation (11 Garden Street)	None	68	2.1	82	2.6	20.6%	79	2.6	NDA			82	2.8	86	2.8	-1.9%	99	3.4	97	3.1	-8.3%	119	3.7			
Restrooms (1 State St.)	None	66	2.1	88	2.8	33.3%	82	2.7	93	3.2	17.3%	98	3.4	109	3.5	4.0%	131	4.5	137	4.4	-2.2%	177	5.5	74	2.6	-53.9%
irrigation - Harbor Main Lot? (501 Shoreline)	None	19	0.6	55	1.7	189.5%	41	1.4	18	0.6	-54.6%	63	2.2	47	1.5	-30.2%	42	1.4	34	1.1	-24.3%	49	1.5			
Irrigation - Leadbetter (801 Shoreline)	None	24	0.8	38	1.2	58.3%	30	1.0	35	1.2	20.7%	40	1.4	46	1.5	7.6%	43	1.5	57	1.8	24.0%	50	1.6			
Admin Office (132A Harbor Way)	None	5	0.2	5	0.2	0.0%	6	0.2	5	0.2	-13.8%	6	0.2	5	0.2	-22.0%	5	0.2	6	0.2	12.3%	6	0.2			
? (803 Shoreline) What does this serve?	None	0	0.0	1	0.0		1	0.0	1	0.0	3.4%	0	0.0	1	0.0		0	0.0	1	0.0		0	0.0			
City Offices (219F Stearns Wharf)	None	0	0.0	1	0.0		0	0.0	1	0.0		0	0.0	1	0.0		0	0.0	1	0.0		0	0.0			
NOAA (113 Harbor Way)	None	0	0.0	1	0.0		0	0.0	1	0.0		0	0.0	1	0.0		0	0.0	1	0.0		0	0.0			

TOTALS		324		275			471		154			505		438			502		487			666				
		1482	36.2	1435	36.3	0.2%	1986	50.5	1253	37.9	-25.0%	2051	53.3	1999	50.4	-5.5%	2249	60.2	2061	50.8	-15.7%	2690	25.3	625	19.0	-24.8%

NDA = NO DATA AVAILABLE

Do multi-tenant buildings have separate water meters for each unit?

ATTACHMENT