



CITY OF SANTA BARBARA

COUNCIL AGENDA REPORT

AGENDA DATE: April 26, 2016

TO: Mayor and Councilmembers

FROM: Water Resources Division, Public Works Department
Planning Division, Community Development Department

SUBJECT: Amended Stage Three Drought Declaration To 35% Conservation Target

RECOMMENDATION:

That Council adopt, by reading of title only, A Resolution of the Council of the City of Santa Barbara Amending Resolution 15-036 the Stage Three Drought Emergency Declaration to Increase the Reduction From Normal Citywide Water Use From 25 to 35 Percent.

DISCUSSION:

Over the past four years, the City has been taking successive steps in responding to the worst drought on record in Santa Barbara. Currently, the 2016 water year is projected to end in rainfall well below average with virtually no runoff to local reservoirs. The steps taken by the City have been in line with the City's Water Shortage Contingency Plan and the 2011 Long Term Water Supply Plan (LTWSP), which are based on the following principles:

- Most of the City's water supplies depend on rainfall to fill reservoirs.
- Severe drought is an expected part of water supply planning and develops over a number of years.
- A drought might end in a relatively short time, but the lead time needed to ensure an adequate water supply requires an assumption of continuing drought.
- Managing water demands is a critical part of water supply management, including making efficiency improvements during normal times and extraordinary cutbacks during extended dry periods.

As a result of unprecedented drought conditions, Council declared a Stage One, and subsequently a Stage Two Drought Condition on February 11, 2014, and May 20, 2014, respectively. On May 5, 2015, in response to the driest consecutive four-year period on record, Council declared a Stage Three Drought Emergency and increased the

community's water conservation target to 25 percent. On May 12, 2015, Council adopted additional water use regulations.

The City is currently in the midst of the driest consecutive five-year period on record. The 2016 water year is projected to end in rainfall well below average. In accordance with the LTWSP, depleted surface water supplies have been replaced with increased groundwater production, purchases of supplemental water, the reactivation of the Charles E. Meyer Desalination Plant (Desalination Plant) in fall 2016, and extraordinary water conservation from the community.

Water Conservation Target

During the Stage One and Stage Two Drought conditions, the City asked the community for a 20 percent reduction in water use to help stretch available supplies. As in past droughts, the community responded by exceeding the goal, with cumulative water reductions in excess of 20 percent.

When the Stage Three Drought Emergency was declared in May 2015, the City implemented a 25 percent water use reduction. Since that declaration, the community has averaged 34 percent in water conservation.

At this time, a 35 percent water conservation target is required to further stretch remaining groundwater and surface water supplies. Taking such action now will ensure the City has adequate water supplies to meet demands through 2018, and it may delay the decision to expand the Desalination Plant by at least one year.

Water Use Regulations

Drought water use regulations during the Stage Two and Stage Three Drought conditions have generally targeted discretionary outdoor water use and have complied with statewide regulations adopted by the State Water Resources Control Board. The City has successfully curbed inefficient water use through education, rather than by issuance of penalties. Given the community's success in meeting the water conservation target to date, staff is recommending no additional water use regulations at this time.

At the state level, discussions for amending statewide water use regulations will continue throughout April and May 2016. Staff will report to Council any necessary action the City must take to remain in compliance.

Development Restrictions

During a normal year, the City's water demand is 14,600 acre feet per year (AFY). During a drought, the City's targeted water demand is 80 percent of the normal demand, or 11,680 AFY. On average, new development represents approximately 0.35 percent of the City's drought water demand projection, or 28-40 AFY (see Attachment).

Drought-related development restrictions are limitations placed on development projects to reduce anticipated water demand. Potential development restrictions were discussed by Council in October and December 2014, and in detail on April 14, 2015. Staff consulted with the Planning Commission on February 12, 2015, regarding appropriate development restrictions that could be implemented as part of a Stage Three Drought Emergency, including specifically:

- landscape deferral (voluntary and mandatory);
- suspension of building permits for new pools;
- suspension of building permits for projects with net new water use; and
- Zoning Ordinance Amendments to support water conservation.

On April 14 and May 5, 2015, Council considered potential development restrictions and directed staff to include only the state requirements. This decision was made by weighing the small amount of water savings gained by implementing development restrictions against the potentially negative impact on the local economy.

At this time, with the exception of increasing the conservation target to 35 percent, staff does not recommend imposing additional development restrictions for the same reasons previously discussed by Council. Staff will continue to advise Council on the water supply and demand status and will make recommendations regarding changes in water use regulations and development restrictions as appropriate.

Sustainability Impacts

The recommended conservation target of 35 percent is appropriate at this time, given the community's success in reducing demand and the need to further stretch our remaining water supplies. Staff will monitor the cumulative water savings from May through September 2016, and will use the information as a basis for determining whether or not to recommend additional restrictions for Council consideration in October 2016.

The recommended action reflects preliminary Council review and input from March 22, 2016, and ongoing discussions with the City's Board of Water Commissioners. A 35 percent demand reduction, coupled with supplemental water purchases and the reactivation of the Desalination Plant in fall 2016, would ensure that the City has adequate supplies to meet demand through 2018.

ATTACHMENT: Analysis of Water Use for Development

PREPARED BY: Joshua Haggmark, Water Resources Manager/MW/mh
Allison DeBusk, Project Planner

SUBMITTED BY: Rebecca J. Bjork, Public Works Director
George Buell, Community Development Director

APPROVED BY: City Administrator's Office

Analysis of Water Use for Development

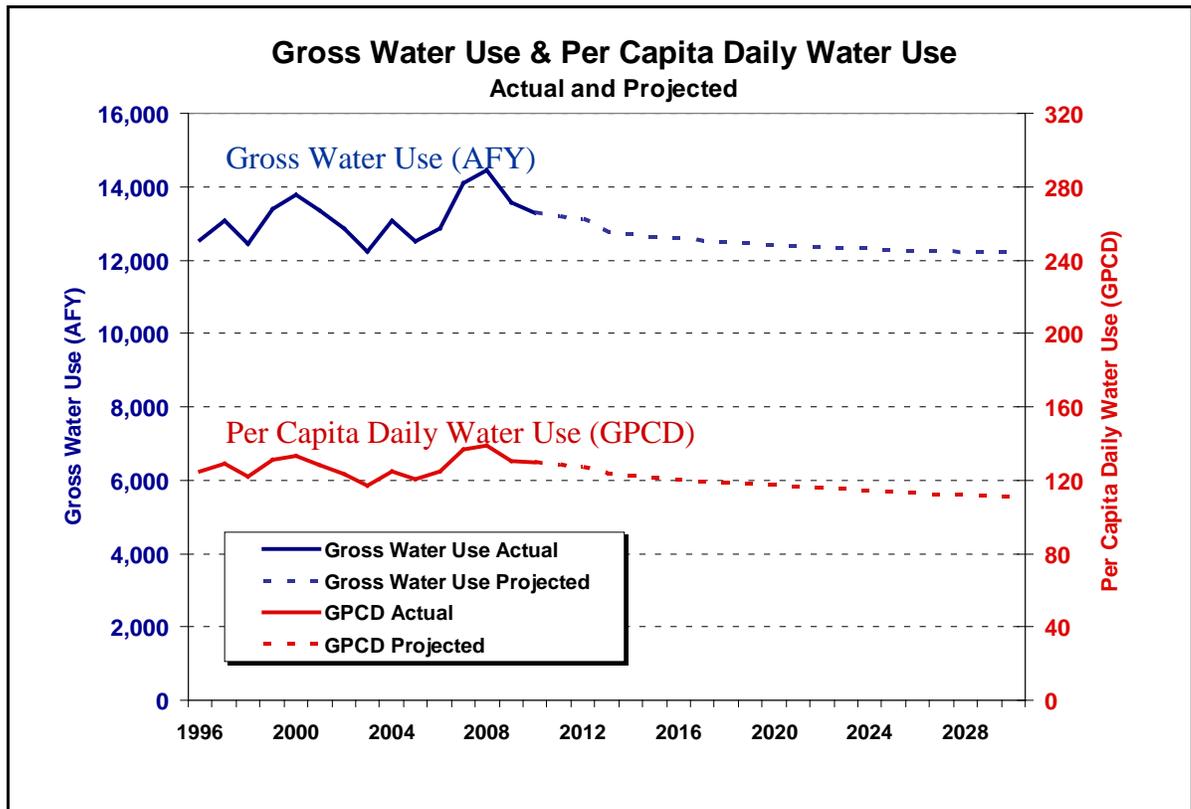
During a normal year, the City's water demand is 14,600 acre feet per year (AFY). Currently, the City is in a Stage Three Drought Condition with projected annual demands of approximately 9,800 AFY (65% of normal potable demand, plus some recycled water use). On average, development represents approximately 0.35% of the City's drought water demand projection, or 28-40 AFY (refer to Table 1 below). This estimate is based on information provided in the General Plan Update Final Environmental Impact Report (FEIR) and City data on development over the last ten years, as described below.

The FEIR prepared for the City's General Plan Update included an assessment of planned growth (assuming 2,800 new residential units and 2 million square feet of nonresidential development) over the 20-year planning period (2010-2030). This additional growth was estimated to increase long-term citywide water demand by a cumulative total of 791 AFY by the year 2030. This breaks down to approximately 40 AFY of new annual water demand, representing 0.41% of the annual drought demand projections.

City staff reviewed completed construction projects in the City from 2004-2013 (as determined by issuance of a certificate of occupancy for each project) and found that an average of 28 AFY of new water demandⁱ went online each year. Although the number varied greatly from one year to another (ranging from 8 to 55 AFY), this time period captured a development boom as well as the recent recession, and should serve as a realistic average in gauging development over the next 5 years. Most recently, for 2014 and 2015, a total of 38.54 and 9.74 AFY respectively, went online based on certificate of occupancy issuance (average of 24 AFY), which is consistent with the average over the previous 10 years. A 28 AFY increase would represent 0.29% of the annual drought demand projections.

Table 1: NET WATER DEMAND FROM DEVELOPMENT		
	Estimated (Per General Plan Update FEIR)	Actual¹ (2004-2013)
Acre Feet Per Year (AFY)	40 AFY	28 AFY
Annual Demand (% of Annual <u>Normal</u> Water Demand (14,600 AFY))	0.27%	0.19%
Annual Demand (% of Annual <u>Drought</u> Water Demand (9,800 AFY))	0.41%	0.29%

While it may seem surprising that development represents such a small portion of the City's water demand, this information is consistent with data from the City's 2011 Long-Term Water Supply Plan (LTWSP). The LTWSP anticipates declining potable water demand due to continuing water conservation measures (including long-term efficiency improvements resulting from measures such as updated plumbing codes and appliance standards) offsetting the effects of development, as illustrated in the following chart from the City's 2010 Urban Water Management Plan update.



During the last prolonged drought event (approximately 1986-1992), significant time and effort was spent to determine, on a case by case basis, if a proposed project could be provided sufficient water supplies without significantly impacting the City's ability to provide adequate supplies to existing users. Two major differences today, in comparison to the last significant drought, are that new projects have substantially lower water use due to required water efficient plumbing fixtures and landscaping, and there are significantly fewer projects in the pipeline (estimated demand of 616 AFY for all pending and approved projects in 1986 vs. 167 AFY currently). Refer to Table 2 for a breakdown of estimated water demand from pending and approved projects. Table 3 identifies the estimated water demand from all projects that have been issued a building permit, but have not received a certificate of occupancy. Additionally, the City's overall water consumption is less now than it was back then (approximately 16,225 AFY in 1986 vs. approximately 14,600 AFY currently (pre-drought)).

Table 2: ESTIMATED WATER DEMAND¹ FROM ALL PENDING AND APPROVED DEVELOPMENT (AFY) (THROUGH 2-29-16)				
PROJECT STATUS	LAND USE			TOTAL
	Residential	Mixed Use	Non-Residential	
Approved (No Building Permit Issued)	54.66	7.65	7.33	69.64
Pending (Not Approved)	13.24	58.95	25.31	97.50
TOTAL	67.90	66.60	32.64	167.14

The numbers identified in Table 2 represent projects in various stages of the process that have been submitted over many years. Some of these projects may never come to fruition, but it represents a worst-case analysis for purposes of context. If all of the projects currently in the pipeline were approved and built in the next year, it would represent 1.7% of the annual drought water demand projection (1.14% of normal year demand).

If the City Council were to restrict issuance of permits for development, it would affect approved and pending projects, which total approximately 167 AFY (Table 2). Table 3 identifies those projects for which a building permit has already been issued. These project approvals, which total approximately 75 AFY, would not be affected by a moratorium on development.

Table 3: ESTIMATED WATER DEMAND¹ FROM ALL DEVELOPMENT CURRENTLY UNDER CONSTRUCTION (AFY) (THROUGH 2-29-16)				
PROJECT STATUS	LAND USE			TOTAL
	Residential	Mixed Use	Non-Residential	
Building Permit Issued	24.0	20.03	31.29	75.32

With regard to those projects in the pipeline (pending and approved) and those for which a building permit has been issued, several of them are Affordable Housing projects. Affordable Housing is a top priority for the City, and the General Plan includes policies supporting affordable housing. Policy LG1 is to “prioritize the use of available resources capacities for additional affordable housing... over all other new development.” Table 4, below, identifies the estimated water use associated with affordable housing projects. If a moratorium on development were imposed, affordable housing may be exempt, so it is important to consider what portion of new water demand is associated with affordable housing.

Table 4: AFFORDABLE HOUSING PROJECTS			
PROJECT STATUS	ADDRESS	DESCRIPTION	ESTIMATED WATER DEMAND¹
Permit Issued	240 W. Alamar	4 moderate income units	0.22 AFY
Permit Issued	1032 E. Mason	6 units for seniors	1.07 AFY
Subtotal			1.29 AFY
On Appeal	251 S. Hope	80 units for low- and very-low income frail elderly	14.4 AFY
Approved	510 N. Salsipuedes	40 units for families	6.4 AFY
Approved	3869 State	58 units for seniors	7.07 AFY
Pending	813 E. Carrillo	17 studios for Veterans	2.3 AFY
Subtotal			30.17 AFY
TOTAL			31.46 AFY

Pending and approved affordable housing projects total 30.17 AFY, which represents 18% of the total pending and approved development.

ⁱ Based on Water Demand Factors from the Water Demand Factor Update Report, City of Santa Barbara, October 2009.



PUBLIC WORKS DEPARTMENT

WATER RESOURCES DIVISION

AMENDED STAGE THREE DROUGHT DECLARATION

City Council
April 26, 2016

Outline

- Drought Condition Recap
- Water Supply Strategy
- Demand Management Strategy
 - Phased Water Use Regulations
 - Water Demand for Development Projects
- Recommendation



DROUGHT CONDITION RECAP

Drought Condition Recap

- State Drought Declaration- Jan 2014
- City Drought Declarations:
 - Stage One- Feb 2014
 - *20% voluntary reduction*
 - Stage Two- May 2014
 - *20% mandatory reduction*
 - Stage Three- May 2015
 - *25% mandatory reduction*

Rain Totals for WY 16

- Rainfall for the Water Year as of 4/25/16:
 - Gibraltar Reservoir 12.97" (51% of normal)
 - Cachuma Reservoir 11.37" (59% of normal)
 - Santa Barbara 11.57" (67% of normal)
- No significant rainfall expected until next winter

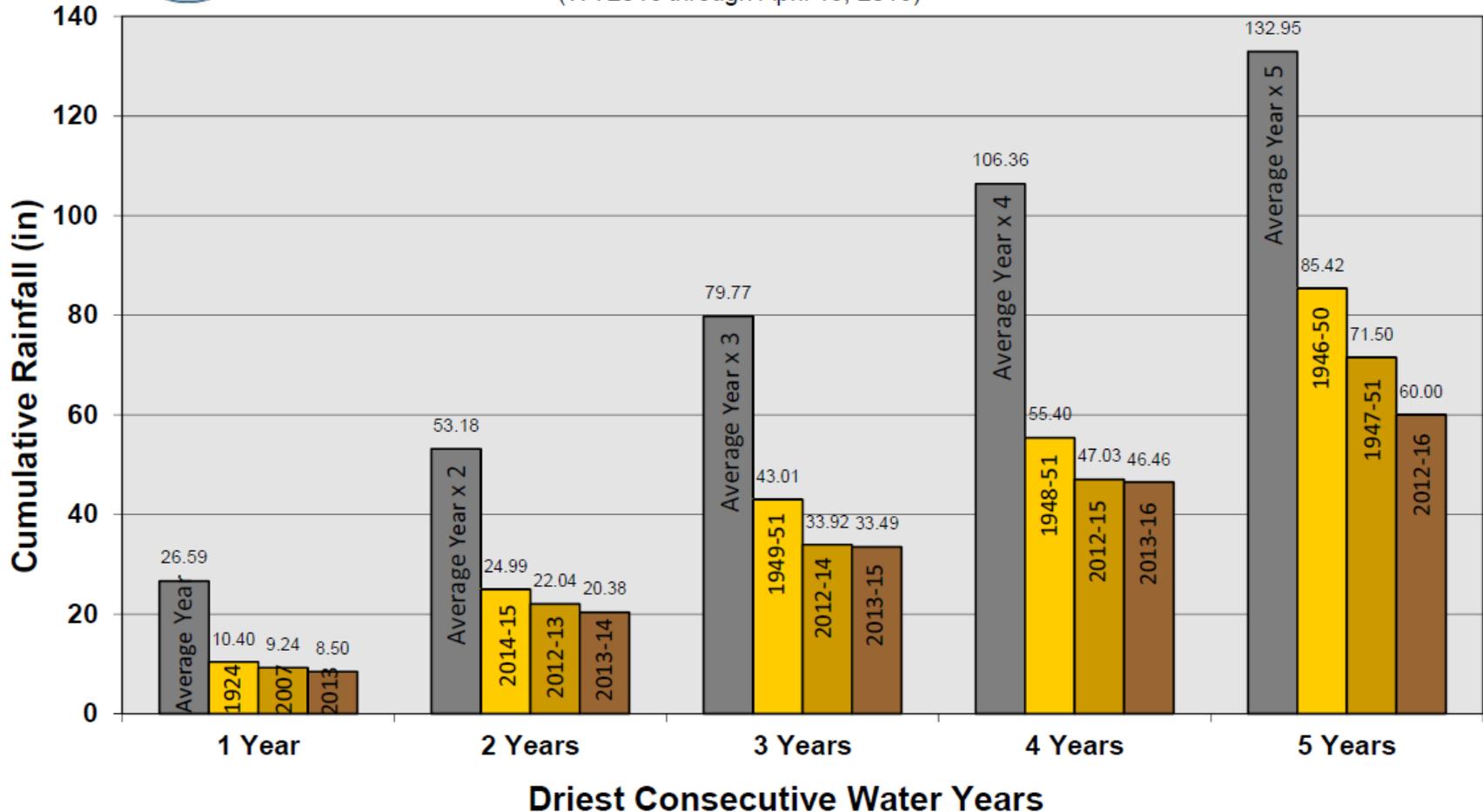






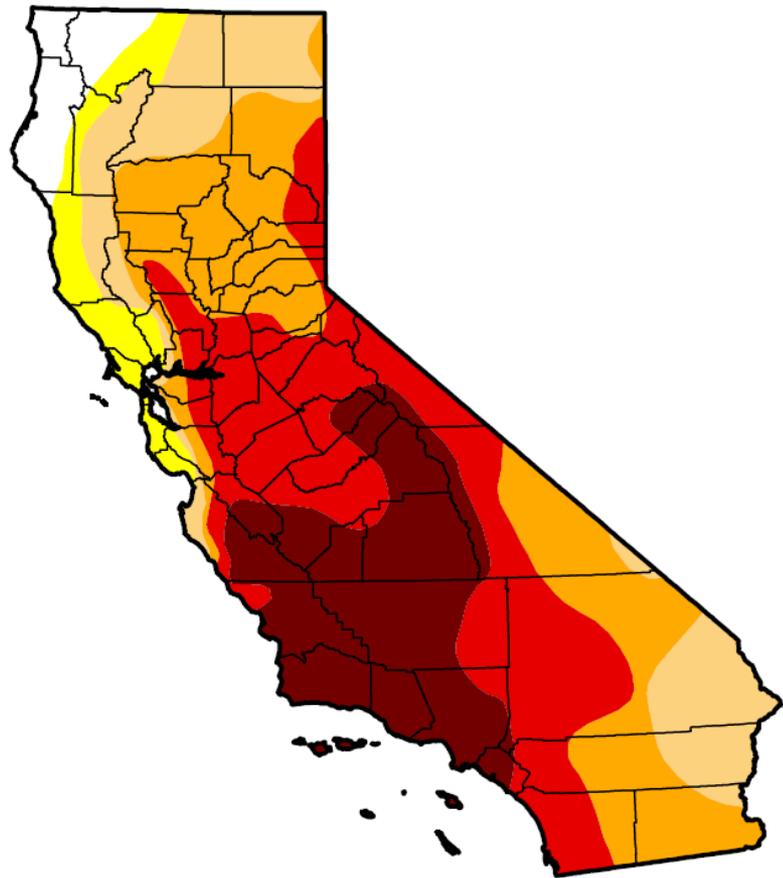
Driest Consecutive Years - Gibraltar 97 Years of Rainfall (1920-2016)

(WY2016 through April 15, 2016)



U.S. Drought Monitor California

April 19, 2016
(Released Thursday, Apr. 21, 2016)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	4.24	95.76	90.09	74.37	49.15	21.04
Last Week <i>4/12/2016</i>	3.55	96.45	90.58	74.37	55.25	31.68
3 Months Ago <i>1/19/2016</i>	0.00	100.00	97.17	86.13	68.15	42.66
Start of Calendar Year <i>12/29/2015</i>	0.00	100.00	97.33	87.55	69.07	44.84
Start of Water Year <i>9/29/2015</i>	0.14	99.86	97.33	92.36	71.08	46.00
One Year Ago <i>4/21/2015</i>	0.14	99.86	98.11	93.44	66.60	46.77

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

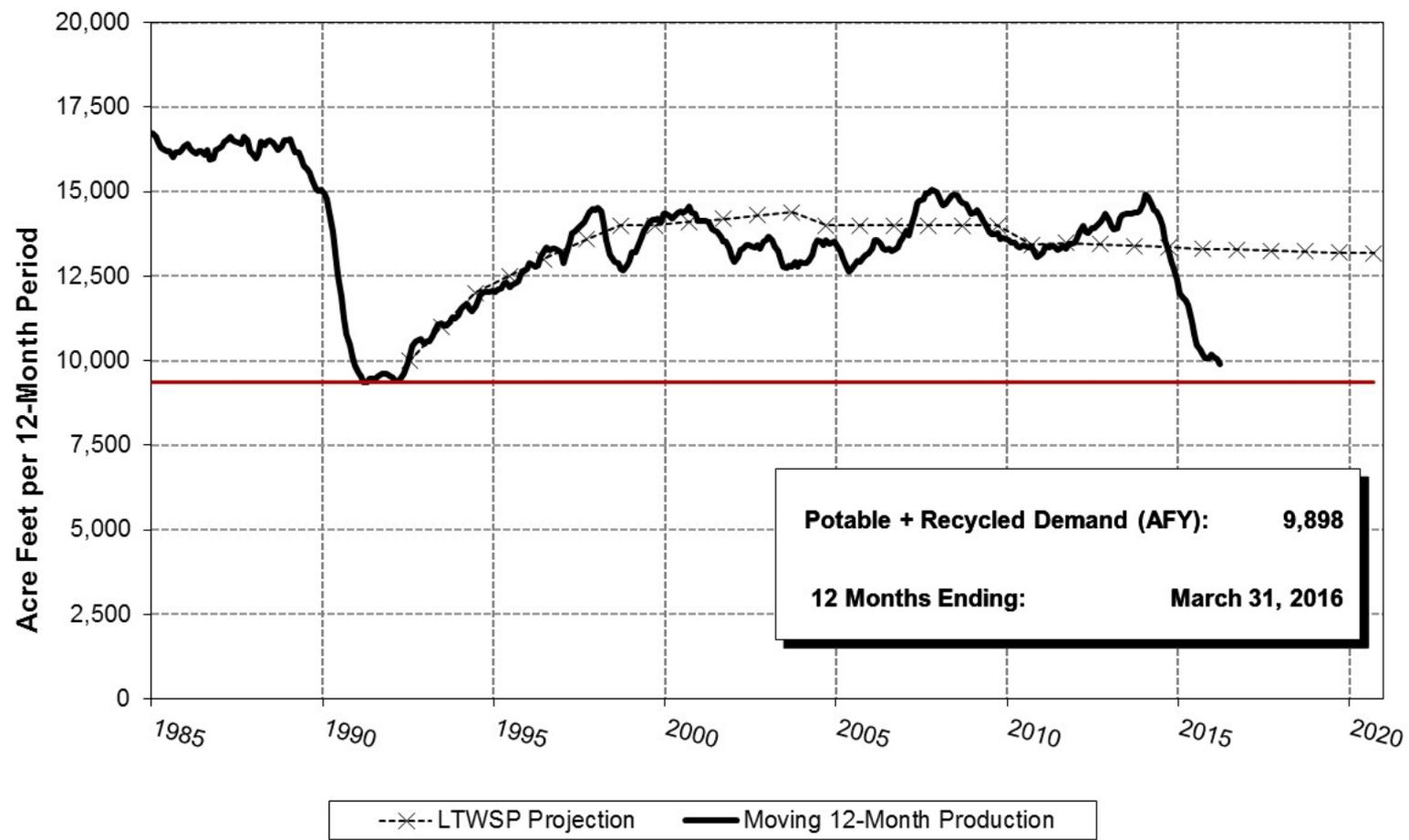
Author:
Richard Tinker
CPC/NOAA/NWS/NCEP



<http://droughtmonitor.unl.edu/>



City of Santa Barbara Water Demand Moving 12-Month Production to Serve Potable + Recycled Systems



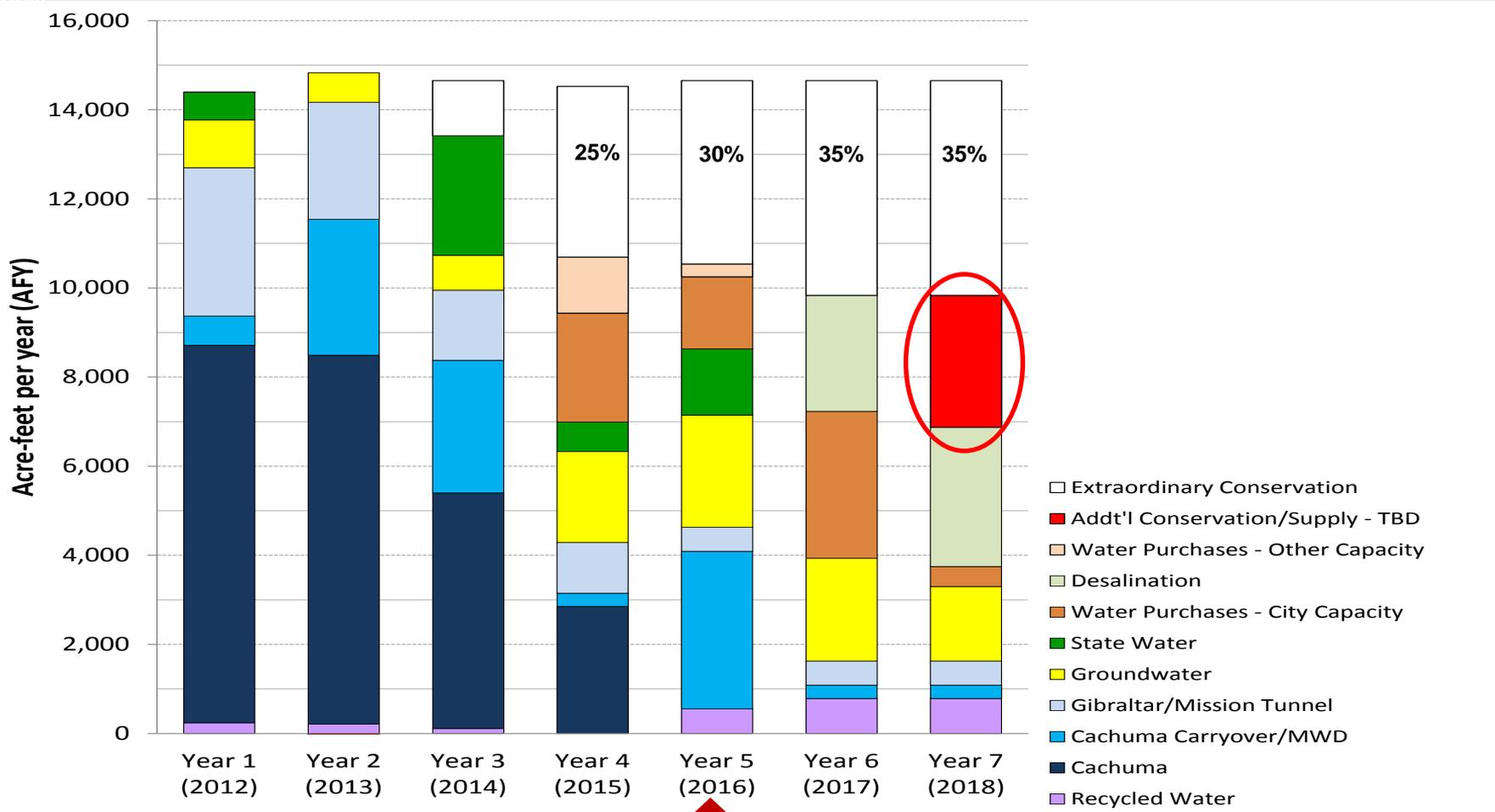
City of Santa Barbara - Public Works Department

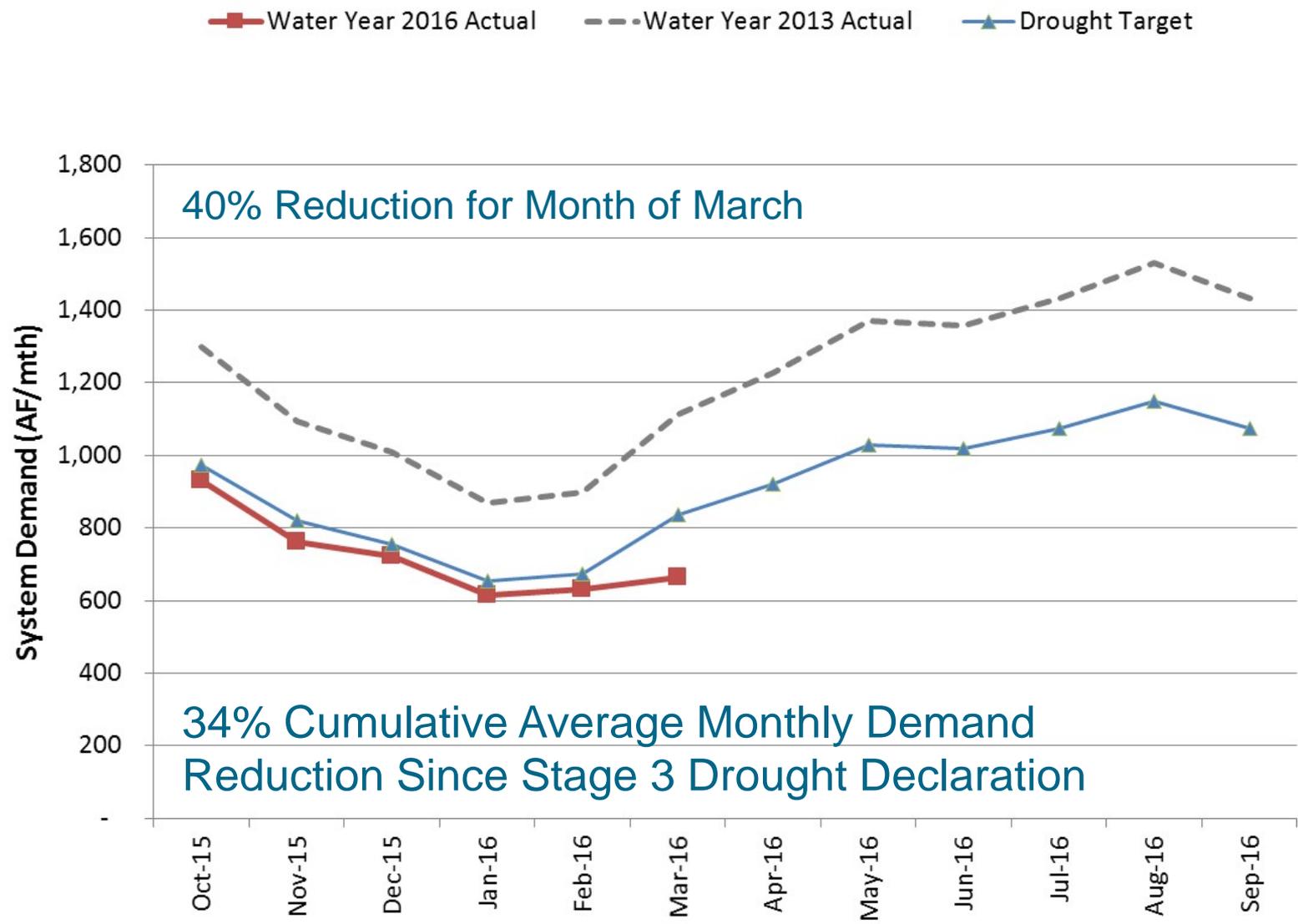


WATER SUPPLY STRATEGY

Projected Supply Strategy

(based on no reservoir inflows, no State Water, 35% conservation in May 2016)





Water Supply Strategy

- Goals
 - Ensure adequate supplies to meet demands through 2018
 - Delay desal expansion decision for City use at least one year
- Tools
 - Supply management - Imported water
 - Demand management - Conservation

Supply Management

- Supplemental Water Purchase:
 - Imported through State Water system
 - *Conveyance limitations*
 - Finalizing water purchase:
 - *Purchase from AVEK (Antelope Valley East Kern) Water Agency*
 - *4,000 AF*
 - *\$250/AF (\$1 million)*
 - *2:1 return water*
 - Return 1 AF for every 2 AF borrowed (approval pending)
 - 10 years to return water
 - *Water available south of the delta in San Luis Reservoir*



DEMAND MANAGEMENT STRATEGY

Demand Management

- Recommended Stage Three Amendment:
 - Increase conservation target to 35%
 - *Match current community conservation efforts*
 - *Represents ~ 5,000 AFY in savings*
 - No additional water use regulations at this time



PHASED WATER USE REGULATIONS- IF NEEDED

What Triggers Additional Regulations?

- Demand reduction target is not met
- Water supply
 - *Interruptions*
 - *Shortages*
 - Conveyance Capacity Limitations
- State regulations:
 - *Current Conservation Standard for the City from the State Board is a 12% reduction from 2013 usage*
 - *Do not foresee additional statewide regulations this spring, staff continues to monitor discussions*

Potential Water Use Regulations

- Phased water use regulations **previously** discussed (increasing in severity):
 - Prohibit watering lawns, with limited exceptions
 - *Rough estimate of savings: 600-1,000 AFY*
 - Prohibit outdoor water use except for hand watering of trees and shrubs only
 - *Rough estimate of savings: 1,200-1,600 AFY*
 - Prohibit outdoor water use
 - *Rough estimate of savings: 1,600-2,000 AFY*



WATER DEMAND FOR DEVELOPMENT PROJECTS



Water Demand From Development

	ESTIMATED (Per General Plan Update Final EIR)	ACTUAL (Average Based On Occupancy Granted 2004-2013)	ACTUAL 2014 (Based On Occupancy Granted 2014)	ACTUAL 2015 (Based On Occupancy Granted 2015)
Acre Feet Per Year (AFY)	40 AFY	28 AFY	38.54 AFY	9.74 AFY
% of Annual <u>Normal</u> Water Demand (14,600 AFY)	0.27%	0.19%	0.26%	0.07%
% of Annual <u>Drought</u> Water Demand (9,800 AFY)	0.41%	0.29%	0.39%	0.10%

Potential Development Restrictions

- Landscape Deferral (Voluntary or Mandatory)
- Suspension of Permits for New Pools
- Suspension of Permits for Projects With Net New Water Use

Landscape Deferral

	Mandatory Landscape Deferral
Estimated Water Savings	4.44 AFY
% of Annual <u>Normal</u> Water Demand (14,600 AFY)	0.03%
% of Annual <u>Drought</u> Water Demand (9,800 AFY)	0.05%

Lots of assumptions/estimates made in getting to these numbers:

- ◆ Estimate is based on 40 AFY of net new development per year.
- ◆ Estimate assumes 50% of water use is for landscaping.
- ◆ Estimate assumes ~23% savings of landscape water demand for not planting “aesthetic” landscaping (represents an 11.5% reduction in overall water use) .
- ◆ Residential projects provide the most opportunity for savings; minimal savings on nonresidential development.



Suspension of Permits for New Pools

City averages 14 new pools per year (based on data from 2010-2014)

	Initial Filling	Annual Operation
Per Pool	0.056 AFY	0.07 AFY
Total Per Year	0.79 AFY	1.01 AFY
Average Total Per Year	1.2 AFY	
% of Annual <u>Normal</u> Water Demand (14,600 AFY)	0.008%	
% of Annual <u>Drought</u> Water Demand (9,800 AFY)	0.01%	

“Pipeline” Projects 2014 and 2015

PROJECT STATUS	LAND USE			TOTAL
	Residential	Mixed-Use	Nonresidential	
APPROVED (no building permit issued)				
2014	29.20 AFY	22.68 AFY	10.90 AFY	62.78 AFY
2015	54.66 AFY	7.65 AFY	7.33 AFY	69.64 AFY
PENDING (not approved)				
2014	42.96 AFY	22.55 AFY	5.19 AFY	70.70 AFY
2015	13.24 AFY	58.95 AFY	25.31 AFY	97.50 AFY
TOTAL				
2014	72.16 AFY	45.23 AFY	16.09 AFY	133.48 AFY
2015	67.90 AFY	66.60 AFY	32.64 AFY	167.14 AFY



Estimated Water Demand from Development Under Construction

PROJECT STATUS	LAND USE			TOTAL
	Residential	Mixed-Use	Nonresidential	
BUILDING PERMIT ISSUED	24.0 AFY	20.03 AFY	31.29 AFY	75.32 AFY



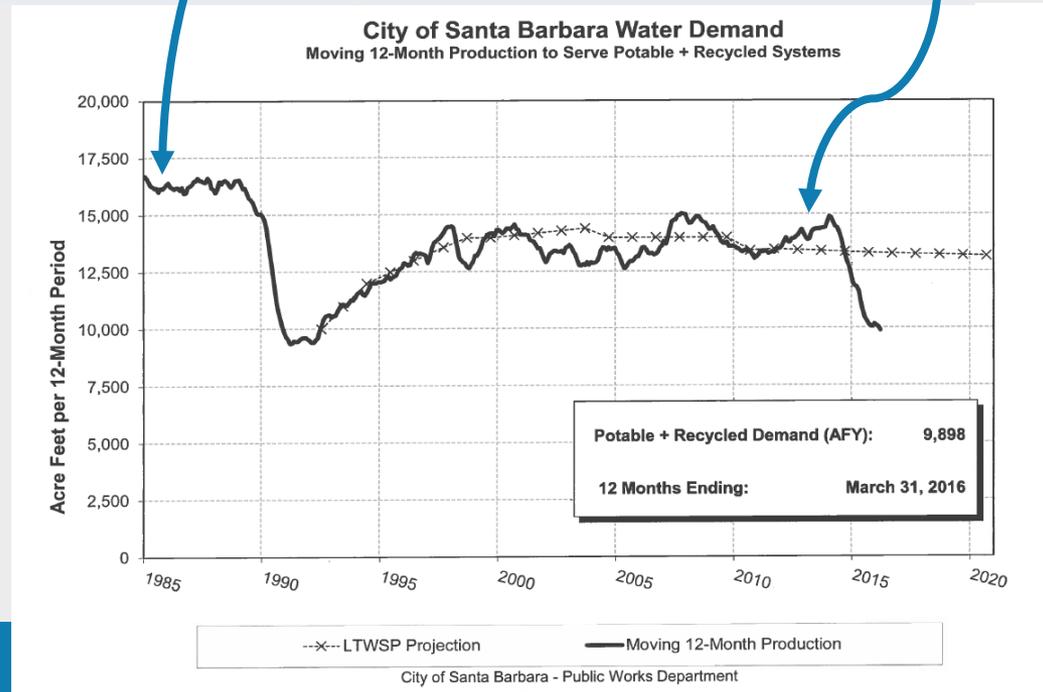
Cumulative Potential Water Demand From All Development

(as of 2-29-16)

PROJECT STATUS	LAND USE			TOTAL
	Residential	Mixed-Use	Nonresidential	
BUILDING PERMIT ISSUED				75.32 AFY
APPROVED (No Building Permit Issued)	54.66 AFY	7.65 AFY	7.33 AFY	69.64 AFY
PENDING (Not Approved)	13.24 AFY	58.95 AFY	25.31 AFY	97.50 AFY
TOTAL				242.46 AFY (~2.5% of annual drought water supply)

Demand From Development

	Pending and Approved Development	City Water Demand
Last Drought (~1986-1992)	616 AFY	16,226 AFY (1986)
Currently	167 AFY	14,600 AFY (pre-drought)





Summary

	Estimated Water Savings	Percent of Annual Drought Water Supply
Voluntary Landscape Deferral	?	?
Mandatory Landscape Deferral	4.4 AFY	0.05%
Suspension of Permits For Pools	1.2 AFY	0.01%
Suspension of Permits For New Development	28 - 40 AFY	0.29 - 0.41%



RECOMMENDATION

Summary

- Our water supply situation has not improved
- Unprecedented drought conditions
- Working to secure & preserve water supplies & promote extraordinary water conservation
- Increase citywide demand reduction target to 35% (matching current community conservation)

Recommendation

- Adopt a Resolution Amending Resolution 15-036, the Stage Three Drought Emergency Declaration, to Increase the Conservation Target from 25 to 35 Percent of 2013 Water Use.

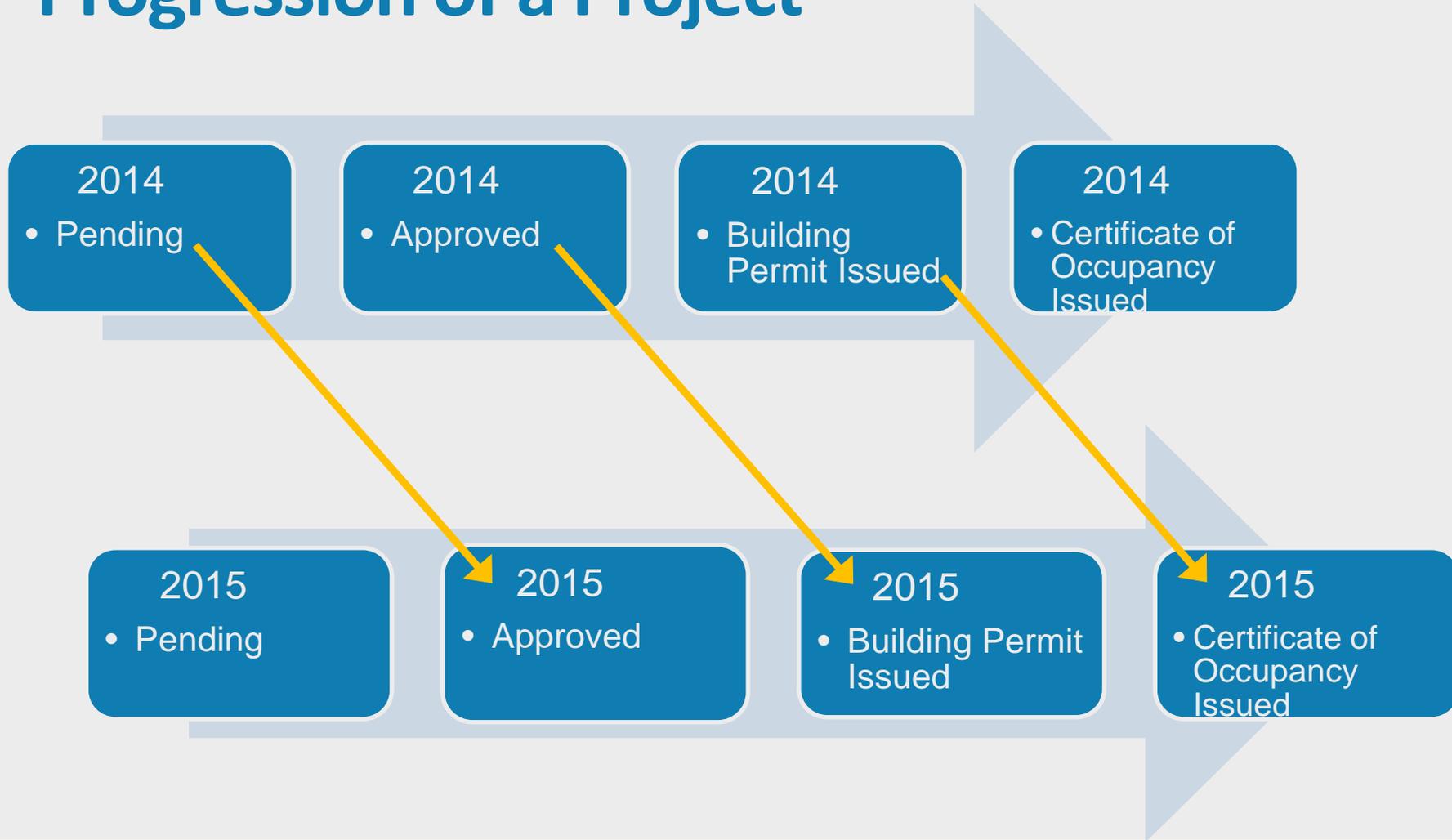
For more information:

www.SantaBarbaraCA.gov/Water

Call: 564-5460



Progression of a Project





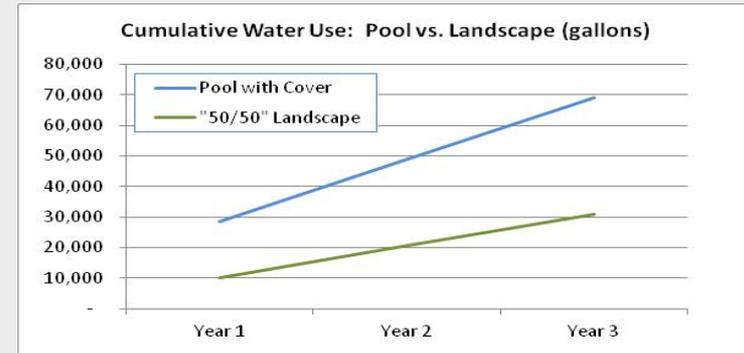
Landscape Deferral Estimates

	TOTAL WATER DEMAND*	LANDSCAPE WATER USE (50% of Total Demand)	LANDSCAPE WATER USE WITH DEFERRAL	WATER SAVINGS
Residential	91.9 AFY	45.95 AFY	31.70 AFY	14.25 AFY
Mixed-Use	86.63 AFY	43.31 AFY	37.24 AFY	6.07 AFY
Nonresidential	63.93 AFY	31.96 AFY	25.88 AFY	6.08 AFY
TOTAL	242.46 AFY	121.22 AFY	94.82 AFY	26.4 AFY (0.18% of Annual Demand)

* Includes all Pending, Approved and Building Permit Issued projects (as of 2-29-16)

Water Use for New Pools

- **CPSA assumptions:**
 - 70% evaporation reduction with pool cover
 - Water use for backwash and salt control apparently not included
- **Staff analysis:**
 - 45% evaporation reduction with pool cover (30% to 60% cited by CUWCC)
 - Includes water for backwashing & salt control
 - Landscape type: 50% turf & 50% water wise plants
 - 25% irrigation reduction per current drought condition
- **Net 3-Year Water Supply Impacts from New Pools**
 - Average new pools/year: 14
 - Net added annual demand: 1.2 AFY (0.01% of annual demand)
 - Net increase in water use over 3 years: 3.5 AF



Demand Management

- Phased drought regulations **previously** discussed:
 - Development restrictions (increasing in severity)
 - *Limits on building permits for new pools*
 - *Voluntary or mandatory deferral of aesthetic landscaping for new projects*
 - *No building permits for projects with net new water use, with exceptions*
 - *No new water meters*

Current Water Use Regulations

- Hoses must be equipped with an automatic shut-off nozzle.
- Automatic irrigation is prohibited between 8:00 am and 6:00 pm, manual irrigation is prohibited between 10:30 am and 4:00 pm.
- No watering during or 48 hrs after rain.
- Swimming pools and spas must be covered when not in use, no draining and refilling by more than 1/3 of pool volume.

Current Water Use Regulations

- Large commercial fountains prohibited.
- Washing of pavement and other hard surfaces is generally prohibited.
- Cars and boats must be washed by hose with shut-off nozzle or at commercial facilities that recycle water.
- Water served on request only. Drought notices in hotels, restaurants, gyms.

Estimated Water Savings for Lawn Watering Ban

- No measurement capability; assumptions made:
 - 50% of water is used outdoors
 - 50% of outdoor water for residential and commercial is used for watering turf ~ 2,600 AFY
 - 65-75% of that has already been reduced during drought
 - Estimated additional savings with lawn watering ban: 600-1,000 AFY
 - Assumes 100% compliance with regulations

Enforcement Approach

- Current enforcement is complaint-driven
- Staff recommends continuing with complaint-driven enforcement as long as conservation target is met

Watering of Turf

- Irrigation of turf prohibited
- Potential Exceptions:
 - By use of non-potable water
 - Irrigation of low water using turf species that was installed prior to 2015
 - Irrigation of turf designed and used for public or institutional outdoor sporting and recreational activities



Watering of Turf

- Potential Exceptions (Cont'd)
 - Commercial event centers that utilize turf for events
 - Multi-family sites that utilize common turf areas for recreation surrounding play structures



Method of Irrigation

- Irrigation of shrubs, trees, groundcover, or other non-turf vegetation only by:
 - Drip irrigation
 - Low precipitation rate nozzles (1 gpm or less or a precipitation rate of 1"/hr or less)
 - Subsurface irrigation system
 - Handheld bucket or hose with shut-off nozzle
- Potential Exceptions:
 - Irrigation by use of non-potable water
 - Designated historic and specimen trees

