

City of Austin Drought Response Measures

Commercial Conservation Technical Workshop

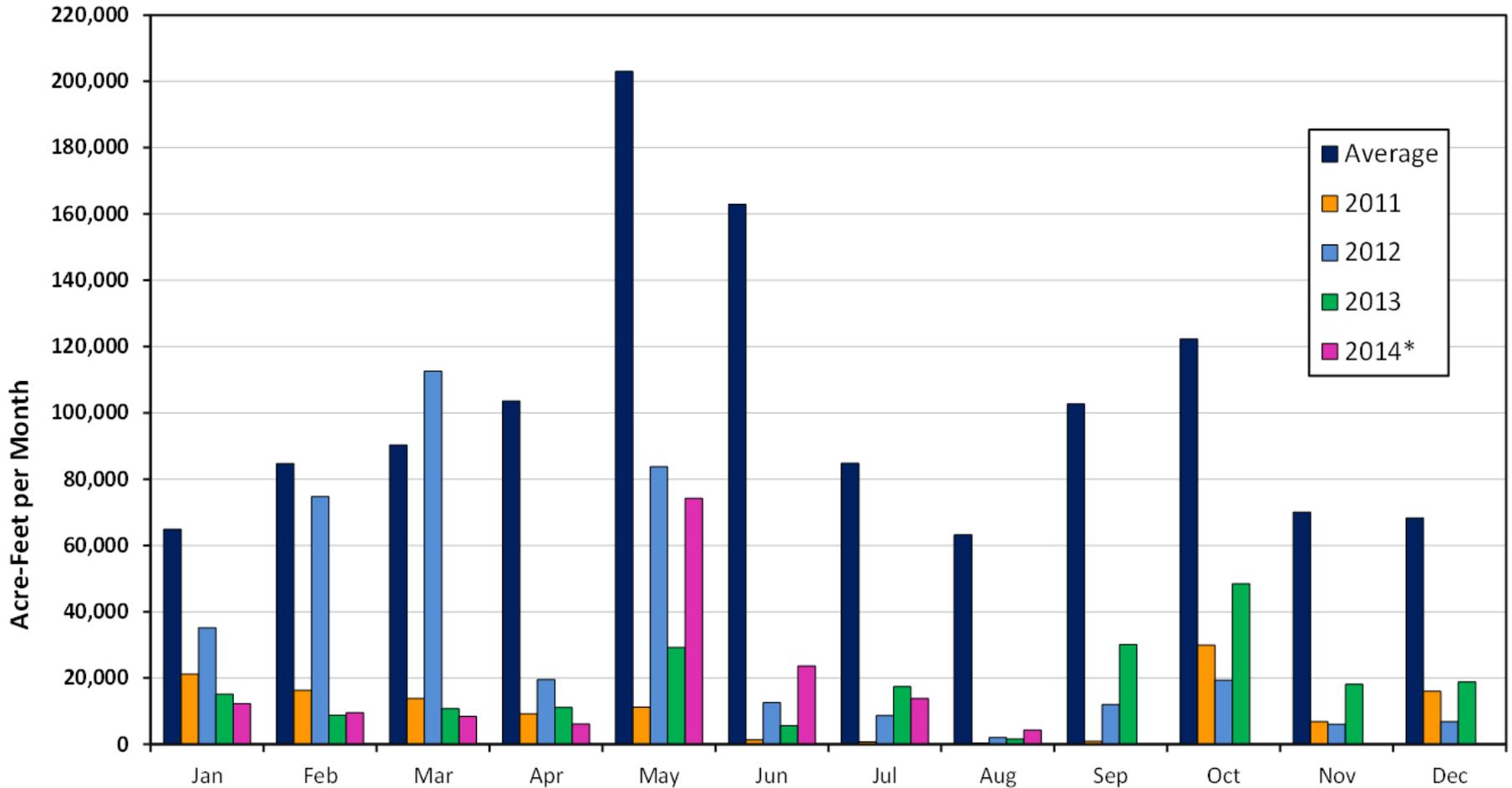
September 24, 2011

Mark Jordan
Austin Water
Conservation Program Coordinator

Low lake levels expected to continue....



Inflows to Lakes Buchanan and Travis



Calendar Year Totals, ac-ft

Average: 1,230,284
 2011: 127,802
 2012: 393,163
 2013: 215,138

Jan.-Aug. Totals, ac-ft

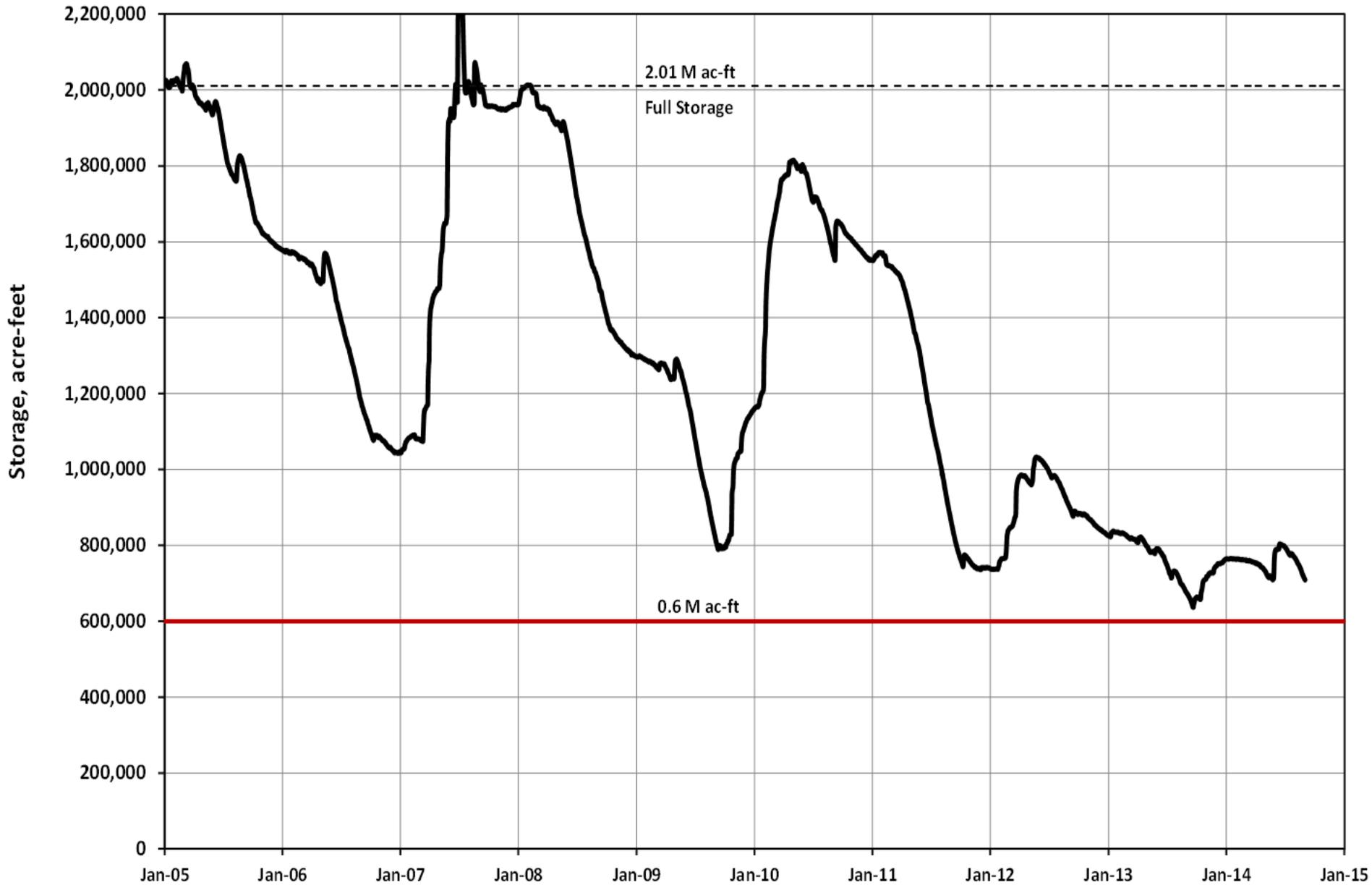
Average: 857,226
 2011: 74,110
 2012: 348,924
 2013: 99,666
 2014: 152,345

Monthly averages correspond to the historical period of record, 1942 through present.

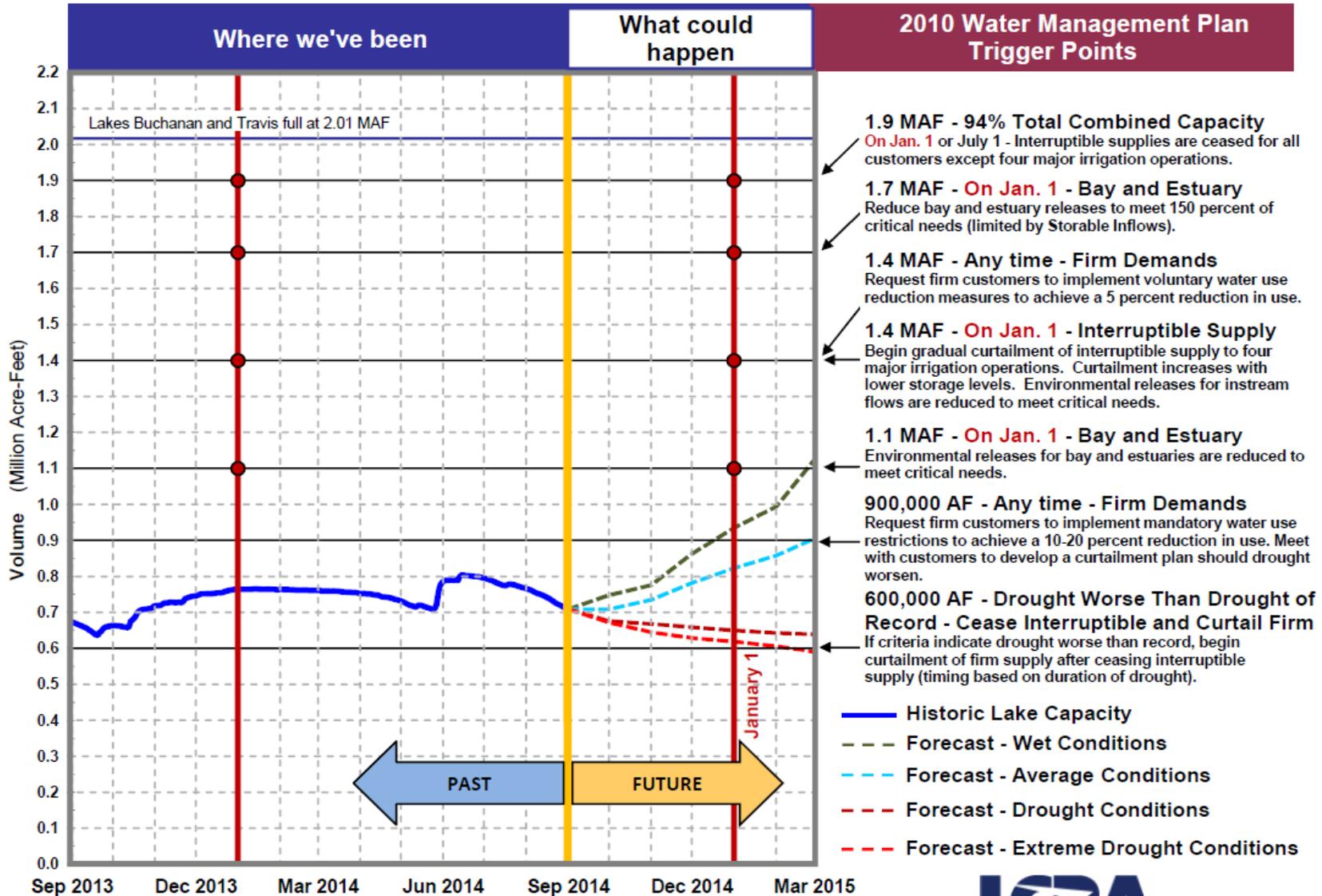
*Inflow data for 2014 are preliminary and subject to revision.

Combined Storage of Lakes Buchanan and Travis

January 1, 2005 through September 1, 2014



Highland Lakes Storage *



Note: MAF equals 1 Million Acre-Feet
One Acre-Foot (a-f) equals 325,851 gallons.

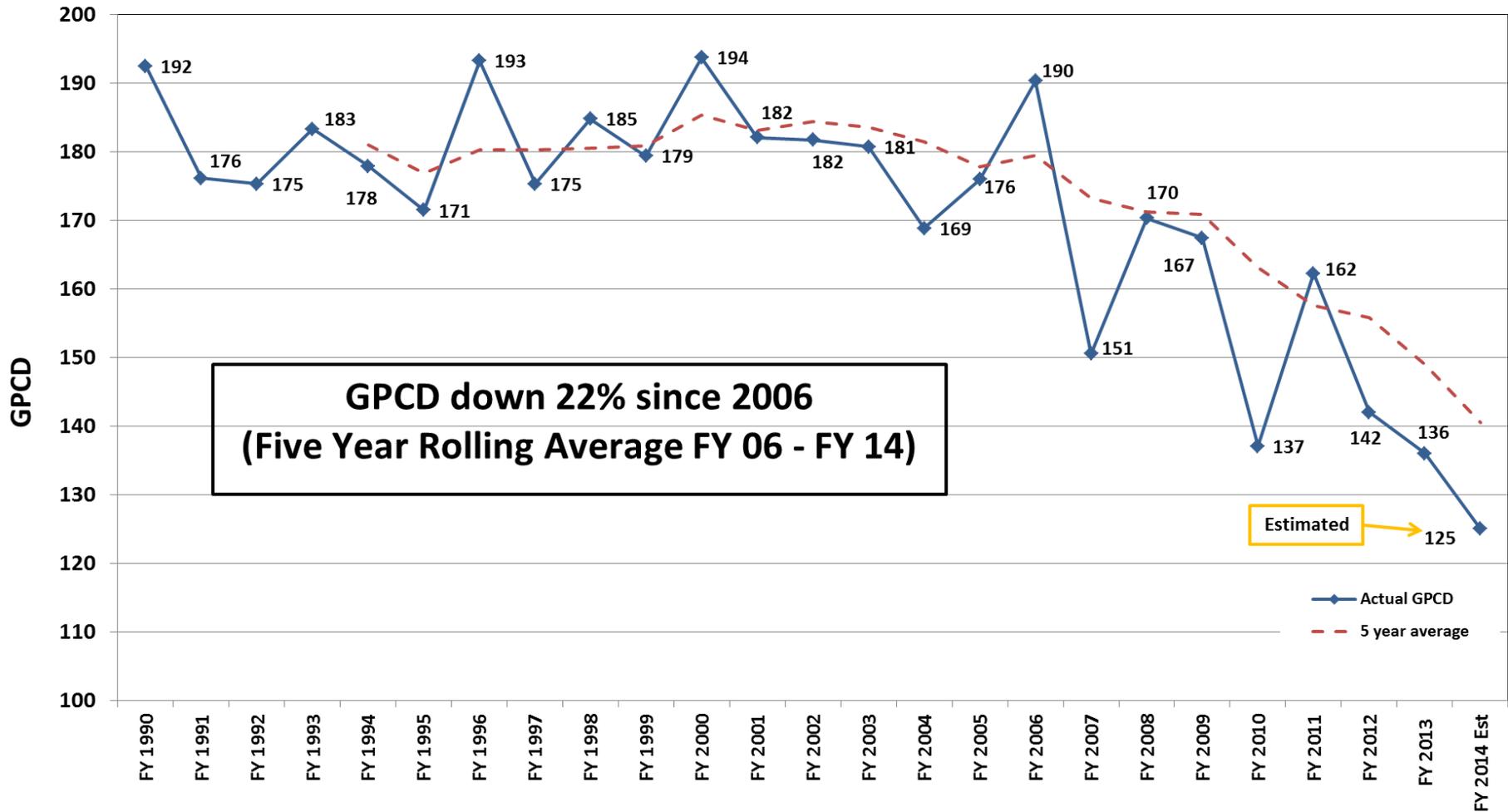
Date: September 2, 2014



* Based on emergency drought relief measures affirmed by TCEQ on Feb. 26, April 30, June 4, and August 6, 2014 suspending releases of interruptible stored water for customers in the Gulf Coast, Lakeside and Pierce Ranch irrigation operations through the end of the irrigation season.

GPCD from 1990 to 2014

GPCD from 1990 to 2014 Estimate



Drought Prompts Code Changes

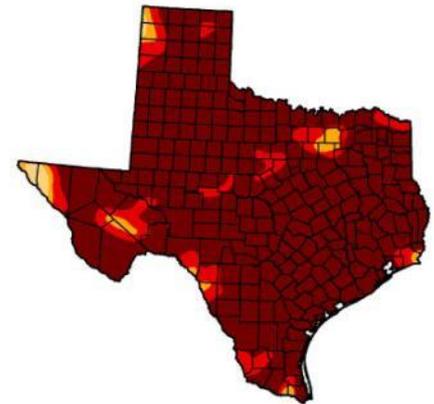
- Record low inflows to Highland Lakes in 2011
- Once/week watering creating pressure on distribution system
- Potential for pro-rata curtailment
- Stage 3 would virtually eliminate outdoor watering
- Public calls for earlier drought response

U.S. Drought Monitor Texas

October 4, 2011
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	99.16	96.99	87.99
Last Week (09/27/2011 map)	0.00	100.00	100.00	99.16	96.65	85.75
3 Months Ago (07/05/2011 map)	2.41	97.59	95.73	94.39	90.21	71.30
Start of Calendar Year (12/28/2010 map)	7.89	92.11	69.43	37.46	9.59	0.00
Start of Water Year (09/27/2011 map)	0.00	100.00	100.00	99.16	96.65	85.75
One Year Ago (09/28/2010 map)	75.57	24.43	2.43	0.99	0.00	0.00

Intensity:



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

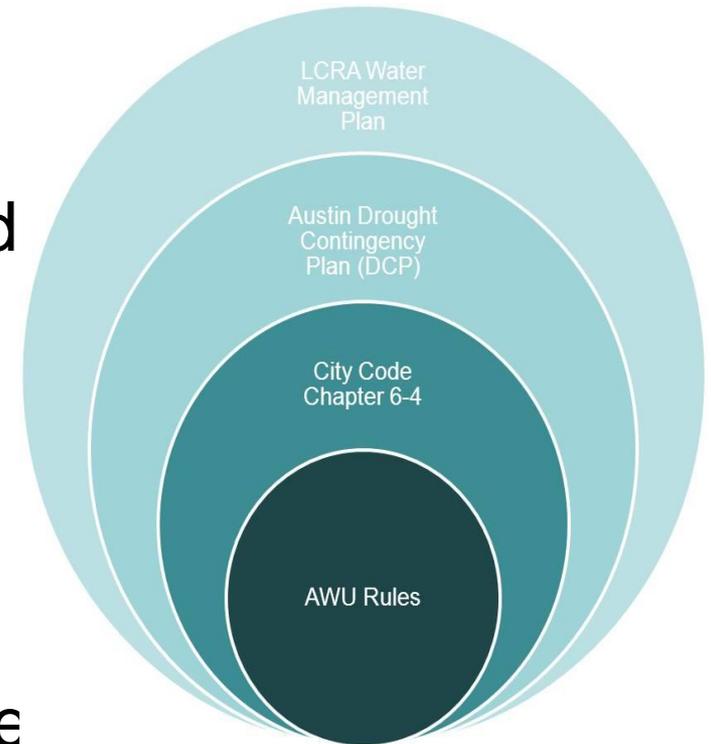


Released Thursday, October 6, 2011

<http://droughtmonitor.unl.edu>

Reasons for the Update

- Impact of drought
- Long-term drought not addressed
- Mandatory irrigation evaluations
- Administrative enforcement
- Code consistency
- Drought Contingency Plan update



Major Changes

- General Regulations always in effect
 - Water waste prohibited, commercial irrigation evaluation & car wash certification required, hotel towel/linen program, water on request in restaurants
- 5 Conservation Stages (one always in effect based on storage/demand)
 - Conservation Stage (Above 1.4 MAF)
 - Two days per week outdoor irrigation (30 hours/week max)
 - Drought Stage 1 (Trigger of 1.4 MAF)
 - Two days per week outdoor irrigation (20 hours/week max auto)
 - Home car washing only on designated outdoor water use day
 - Drought Stage 2 (Trigger of 900K ac ft)
 - One day per week outdoor irrigation (10 hours/week max auto)
 - Home and Charity car washing prohibited
 - Drought Stage 3 (Trigger of 600K ac ft)
 - One day per week outdoor irrigation (6 hours/ week max)
 - Drought Stage 4 – Catastrophic
 - Outdoor water use for health and safety reasons only
- Enforcement
 - Removed from the Municipal Court and moved to fines on water bills
 - Customer/AWU retains option to pursue in court

Exemptions for drip irrigation, gardening and tree watering through Stage 3

Austin is in Drought Response Stage 2

STAGE
WATER
CONSERVATION

STAGE 1
WATER
RESTRICTIONS

STAGE 2
WATER
RESTRICTIONS

STAGE 3
WATER
RESTRICTIONS

STAGE 4
EMERGENCY
RESPONSE

NOW

One Day Per Week

Find your watering day at WaterWiseAustin.org



Stage 2 remains in place



- Combined storage currently at 705,000 AF (35%)
- Stage 2 (1 day per week watering) in effect since September 4, 2012
- Stage 3 trigger possible early next year if severe drought conditions persist

Stage 2 - 1 Day Per Week Schedule

RESIDENTIAL		COMMERCIAL		PUBLIC SCHOOLS	
Hose-End Sprinklers BEFORE 10 AM or AFTER 7 PM	Automatic Irrigation BEFORE 5 AM or AFTER 7 PM	Hose-End Sprinklers BEFORE 10 AM or AFTER 7 PM	Automatic Irrigation BEFORE 5 AM or AFTER 7 PM	Hose-End Sprinklers BEFORE 10 AM or AFTER 7 PM	Automatic Irrigation BEFORE 5 AM or AFTER 7 PM
Even Address Sunday	Even Address Thursday	Even Address Tuesday		Monday	
Odd Address Saturday	Odd Address Wednesday	Odd Address Friday			

STAGE 2 WATER RESTRICTIONS

One Day Per Week Watering

Stage 3 Possible



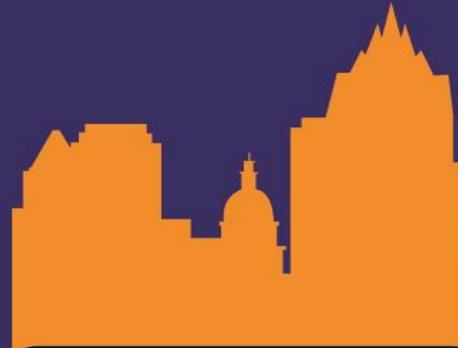
- Combined storage at 600,000 AF (28%)
- 1 day per week watering with reduced hours
- Reduced hours for patio misters, splash pads
- Filling of spas prohibited
- Increase in fine amounts
- Other measures as necessary

Stage 3



RESIDENTIAL

Hose-End Sprinklers 7 AM - 10 AM or 7 PM - 10 PM	Automatic Irrigation 12 AM - 6 AM
Even Address Sunday	Even Address Thursday
Odd Address Saturday	Odd Address Wednesday



COMMERCIAL

Hose-End Sprinklers 7 AM - 10 AM or 7 PM - 10 PM	Automatic Irrigation 12 AM - 6 AM
Even Addresses Tuesday	
Odd Addresses Friday	



PUBLIC SCHOOLS

Hose-End Sprinklers 7 AM - 10 AM or 7 PM - 10 PM	Automatic Irrigation 12 AM - 6 AM
Monday	

STAGE 3 WATER RESTRICTIONS

Emergency Stage 4 Measures

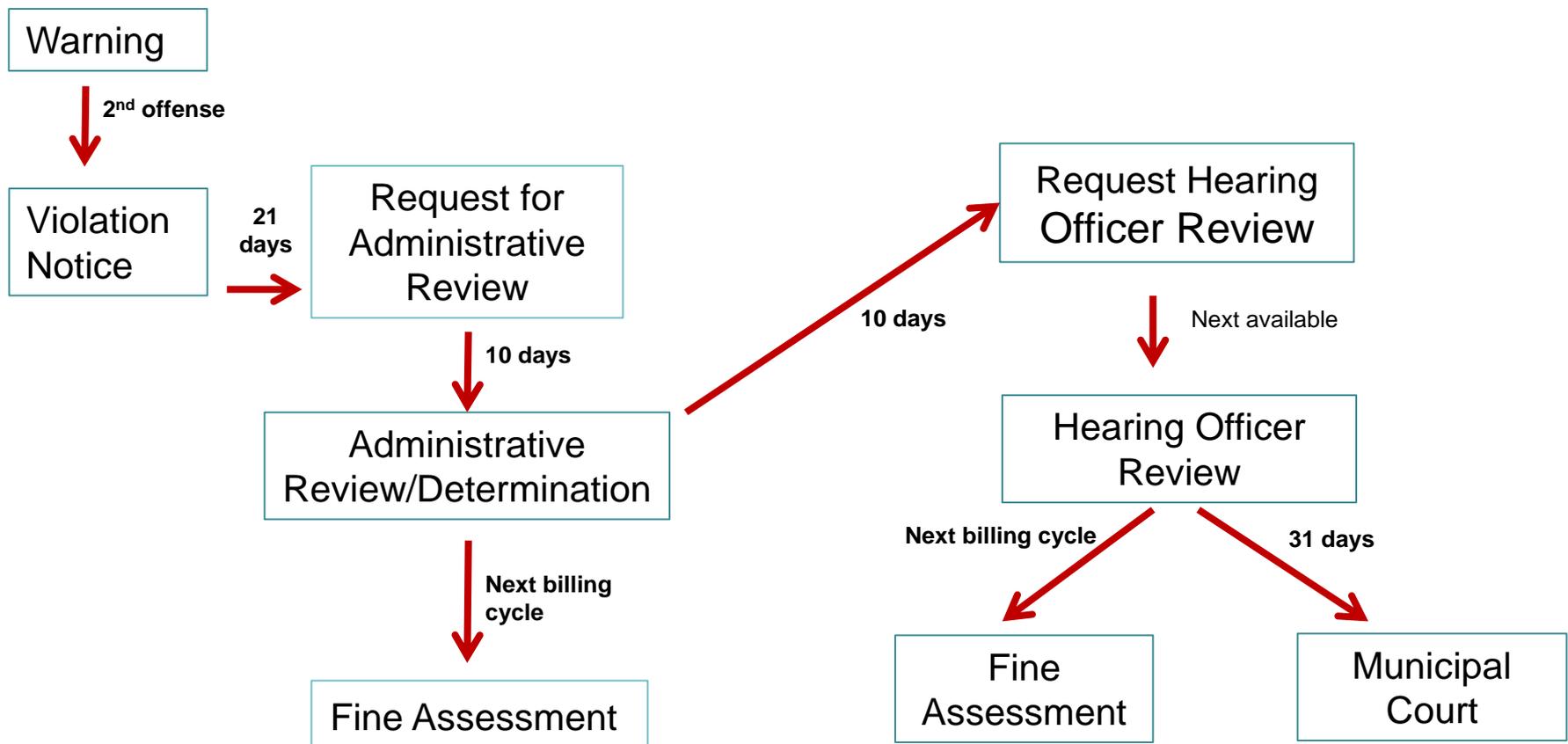
- No outdoor irrigation, no system testing or repair
- No vehicle washing
- No fountains, splash pads, misters
- No water use to repair or operate pools, spas, fountains
- No washing of outdoor surfaces
- Athletic fields for health/safety; variances possible for foundation, tree disease treatment, pest control
- Increase in violation fine amounts



Fines for Violations (Residential/Commercial)

	1 st	2 nd	3 rd	4 th
Stage 2	\$75 / \$200	\$150 / \$400	\$300 / \$500	\$500
Stage 3	\$150 / \$300	\$300 / \$500	\$450 / \$500	\$500
Stage 4	\$500 / \$2000	\$750 / \$2000	\$1250 / \$2000	\$2000

Administrative Enforcement



Drought Response Activities

- June 6, 2014: staff memo Drought Response Strategies Including Alternative Water Source Options submitted to council
- July 10, 2014: AWRPTF report submitted to council
- Sept 23: AWRPTF chair to brief council on AWRPTF report
- Sept 25: staff to submit plan, schedule, budget and stakeholder process for implementation of key AWRPTF recommendations to council

Staff June 6, 2014 Memo

- Demand side strategies
 - Stage 3 interim and Stage 4 restrictions
 - Decentralized and auxiliary water options
 - Strengthen rapid leak response and repair
 - Encourage transition to drought tolerant landscapes

Staff Memo (con't)

- Supply side strategies
 - Expand reclaimed water system
 - LCRA WMP revisions and emergency orders
 - River/reservoir system operational changes
 - Water supply augmentation and new supply options

Supply strategies

- Short and mid-term strategies
 - Longhorn Dam gate/operational changes;
 - Use water stored in Lake Walter Long (Decker Power Plant);
 - Lower Lake Austin during nonpeak recreational times of the year to create storage to capture and use runoff
 - Capture local inflows in Lady Bird Lake and pump to Ulrich WTP
 - Indirect potable reuse of reclaimed water through discharge to Lady Bird Lake and pumping to Ulrich WTP
- Additional studies needed
 - Reclaimed water alluvial infiltration and reuse
 - Aquifer Storage and Recovery (ASR)
 - Brackish groundwater desalination
 - Capture LBL springflows

Austin Water Resources Planning Task Force (AWRPTF)

- Examine and make recommendations regarding alternative water supplies including, but not be limited to:
 - conservation, reuse, regional transmission systems and partnerships, groundwater, aquifer storage, other potential regional sources
- Make recommendations to council consistent with Imagine Austin Plan

AWRPTF Recommendations

- Protect and optimize water from Colorado River Basin through conservation
- Focus on local opportunities for reusing rainwater capture & infiltration
- Initiate an integrated water resources plan to evaluate options for improving the reliability of our water supplies

AWRPTF Report

- Demand management strategies
 - Interim Stage 3 and 4 drought measures
 - Toilet-replacement program for MF and Commercial facilities
 - Require capture of AC condensate for cooling towers in new facilities
 - Eliminate impediments for gray-water systems
 - Discourage in-ground irrigation systems in new residential and commercial developments
 - Enhance efforts to fix leaky utility pipes
 - Independent assessment of conservation programs
- Included water supply strategies in staff memo



Questions?

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