

# Amarillo Copes With Ongoing Drought Conditions

**Presented by:** Emmett A. Autrey  
Director of Utilities  
City of Amarillo



**To:** Red River Authority  
Basin Advisory Committee meeting

**At:** Ambassador Hotel  
Amarillo  
March 19, 2013

# Amarillo Copes With Ongoing Drought Conditions



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## Amarillo's Pre-drought Water sources

1. Southwest well-fields
2. Carson county well-fields
3. CRMWA
  - 3.1 Lake Meredith
  - 3.2 Roberts County



# Every Drop Counts.

City of Amarillo • [www.amarillo.gov](http://www.amarillo.gov)

# Amarillo's Pre-drought Water Supply

## Amarillo's **pre-drought** Water Production Capacity:

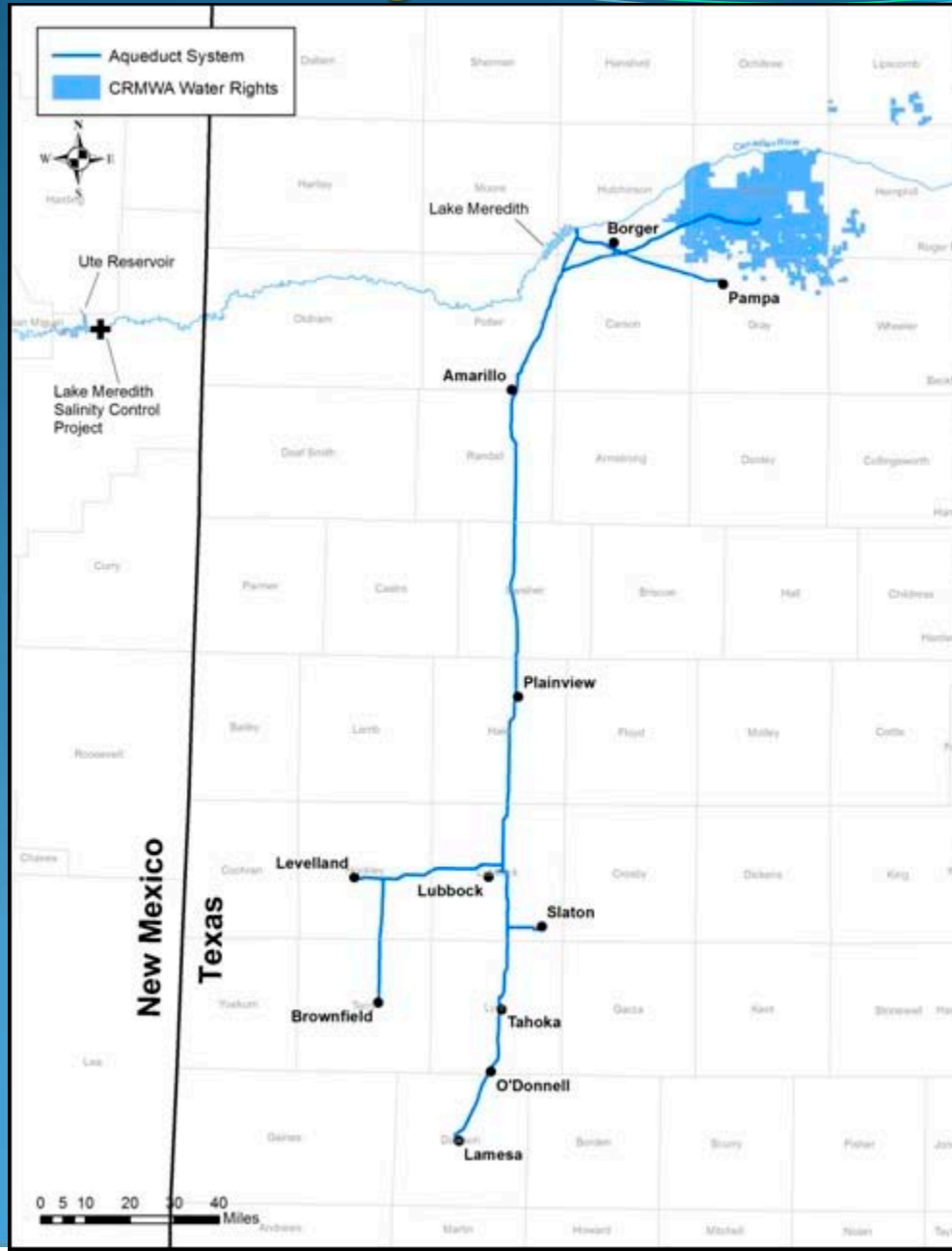
CRMWA Roberts County allocation	26.4	MGD
Carson County wellfield	35	MGD
SW wellfields (Some Dockum)	<u>10</u>	<u>MGD</u>
Total Groundwater	71.4	MGD
Lake Meredith allocation	<b>was</b> 27.3	MGD

Amarillo's **500 MG balancing Reservoir** can supply an additional 15 MGD for up to 30 days for summer peak demands, providing a pre-drought short-term maximum capacity of 113.7 MGD – WITH Lake Meredith.

**NOTE: Last summer, we reached an all-time peak day demand of 92 MGD. Do you see the problem? What if a major supply fails?**



# CRMWA System Overview





**Lake Meredith in the Good Times  
Normal Amarillo allocation was 27.3 MGD**



**500 Million Gallon Reservoir, at 34<sup>th</sup> & Eastern  
Holds CRMWA water for use during high demand season.**



# Water Production Dept. (52200)



**Carson County Well-field: 35 MGD**

**One of the 40 wells in the Carson Co. well field  
Average production is about 0.9 MGD per well**





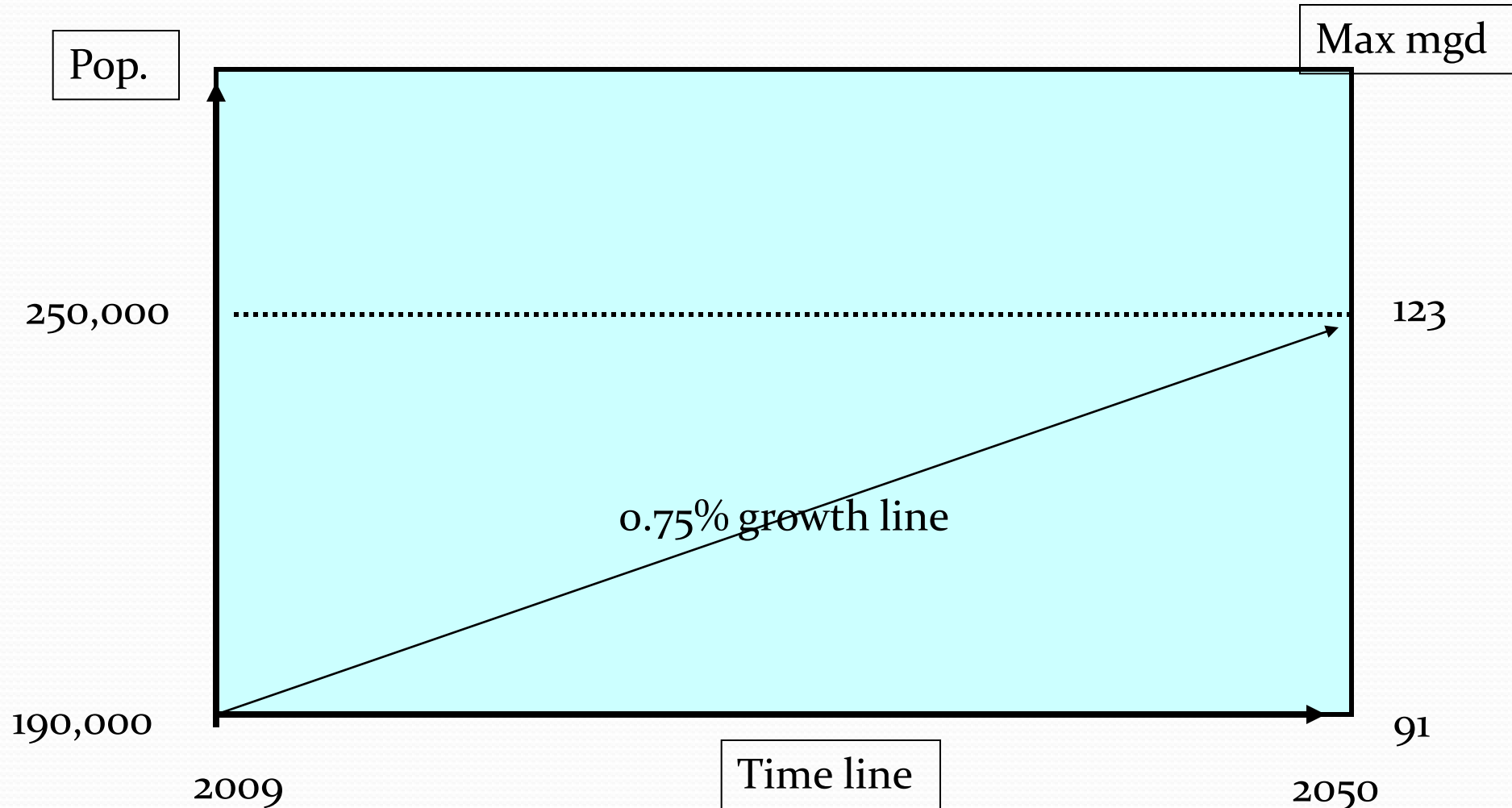
**“City Lake” pump station: placed  
in service in 1927 and still running!  
SW wells = 10 MGD Capacity**

**What we do in our spare time – fix “minor” leaks.  
Carson Co. 45-inch Transmission Line blow-out ...  
08-21-2011**



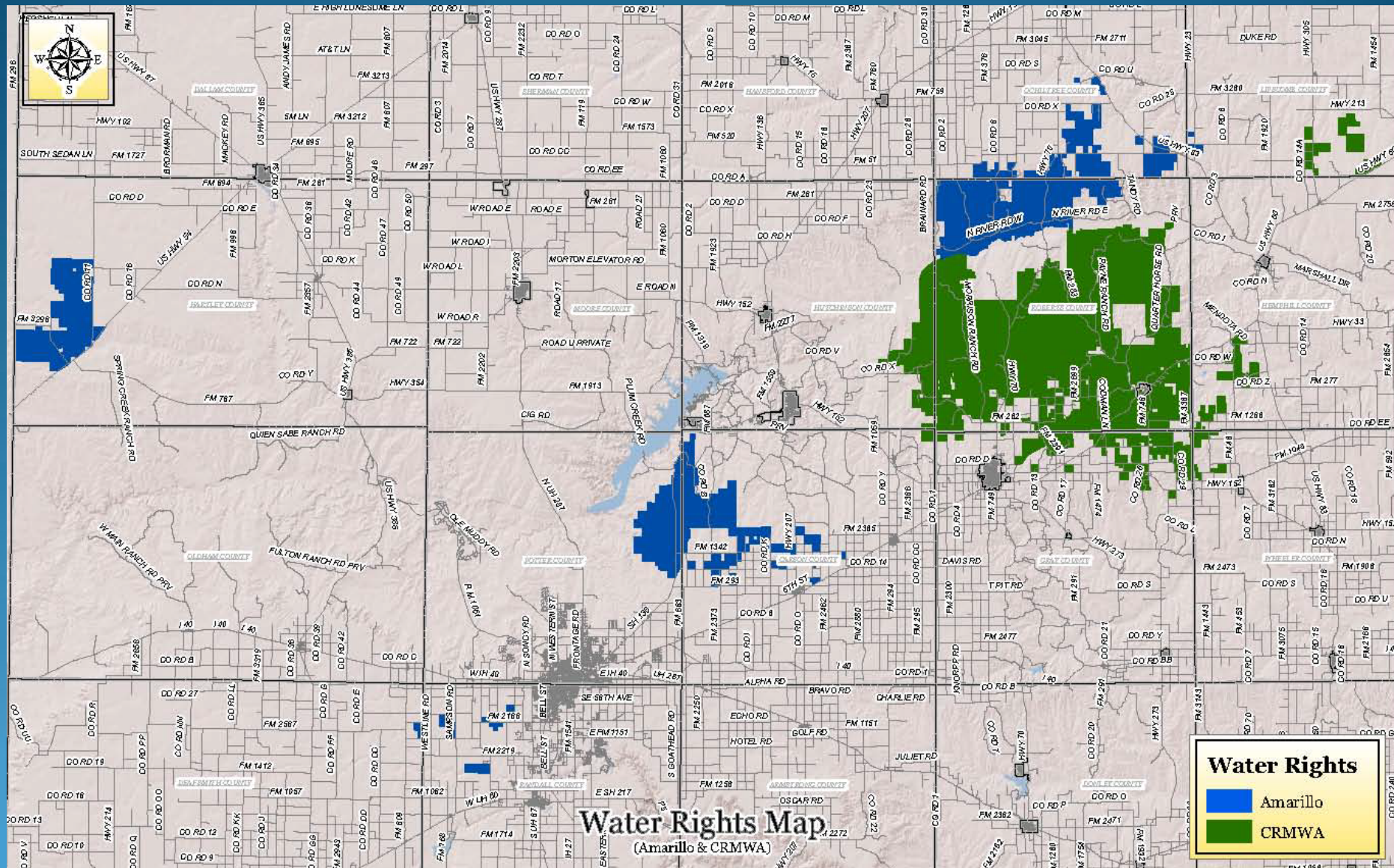
# What the Future Holds?

## The Growth Factor



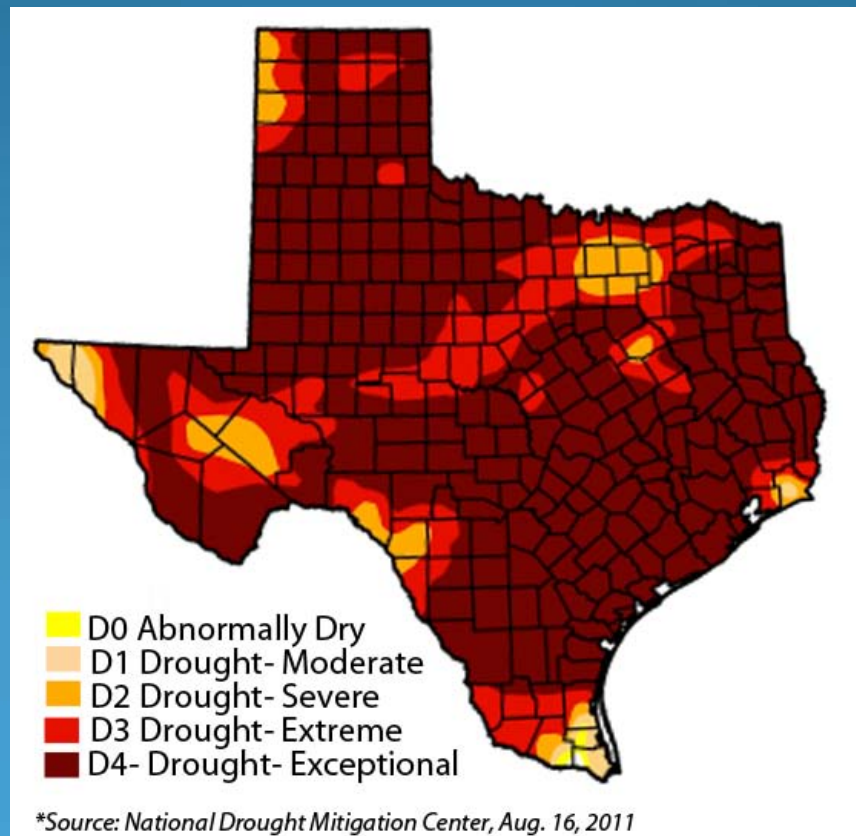


# Amarillo and CRMWA Water Rights Current & Future supplies



# Amarillo Copes With Ongoing Drought Conditions

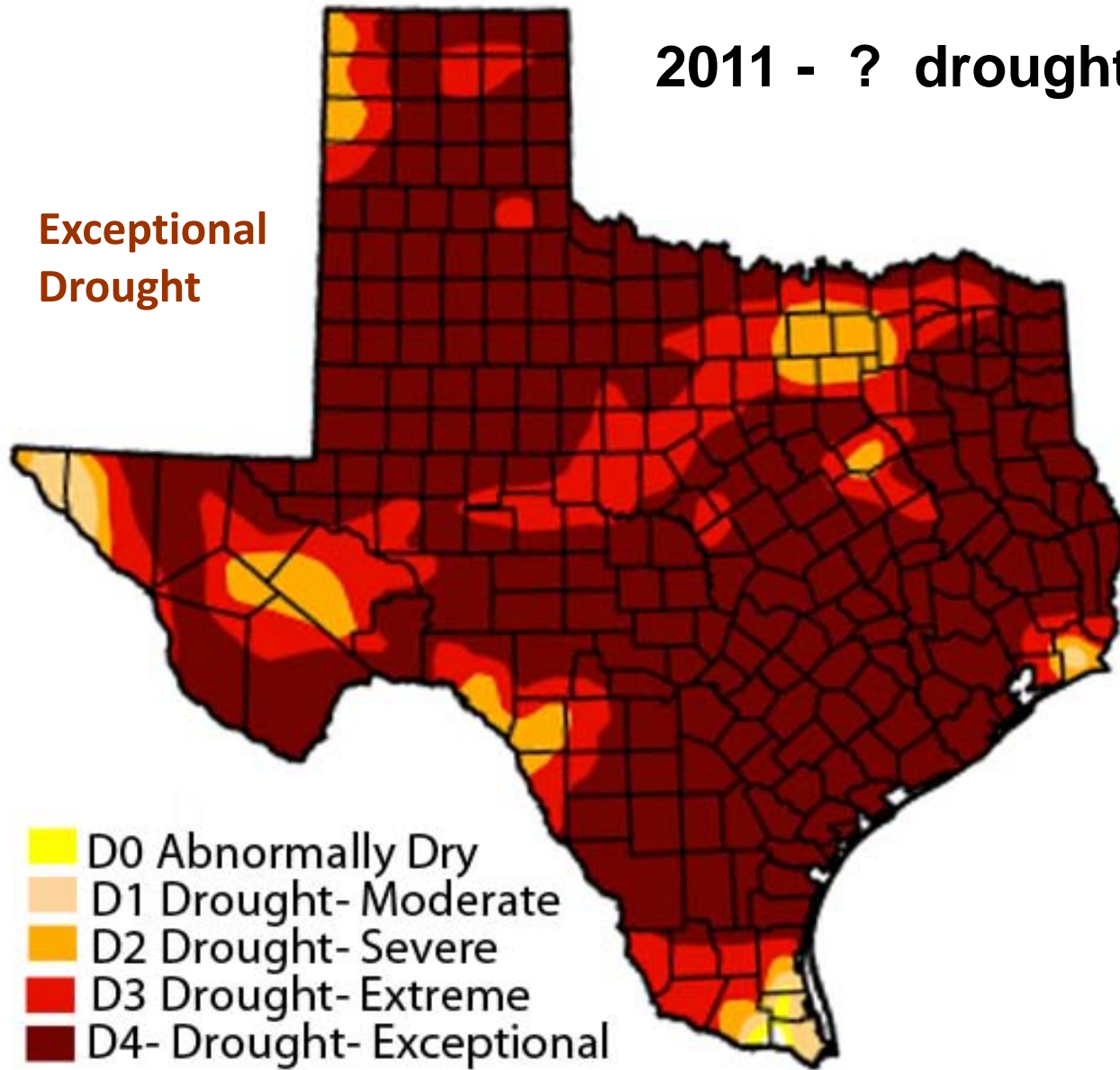
## Then Came 2011 !!





2011 - ? drought

Exceptional  
Drought



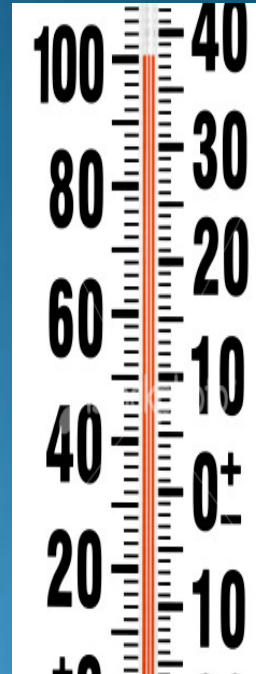
*\*Source: National Drought Mitigation Center, Aug. 16, 2011*



# 2011 – A Year to Remember & For Learning

## The historic 1-year “Drought of Record”

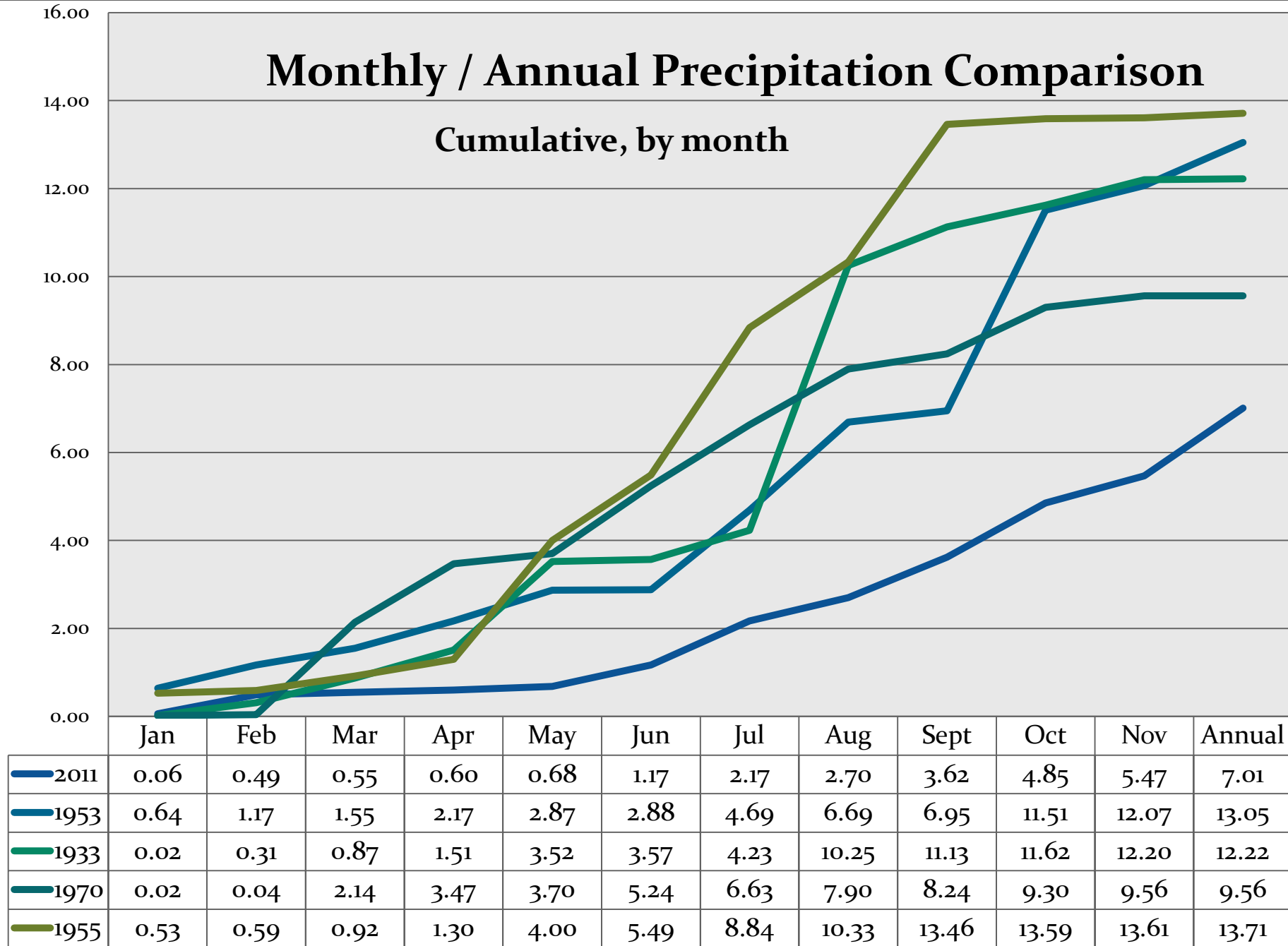
- 50 days above 100 degrees F.
  - *previous record = 26 days*
- Historic high temperature 111 degrees F.
  - *previous record = 109 degrees F.*
- Only 7 inches of precipitation
  - *previous record = 9.56 inches*
- Water consumption jumped to 18.385 billion gallons
  - *Normal annual consumption is about 16 billion gallons*



# Monthly / Annual Precipitation Comparison

Cumulative, by month

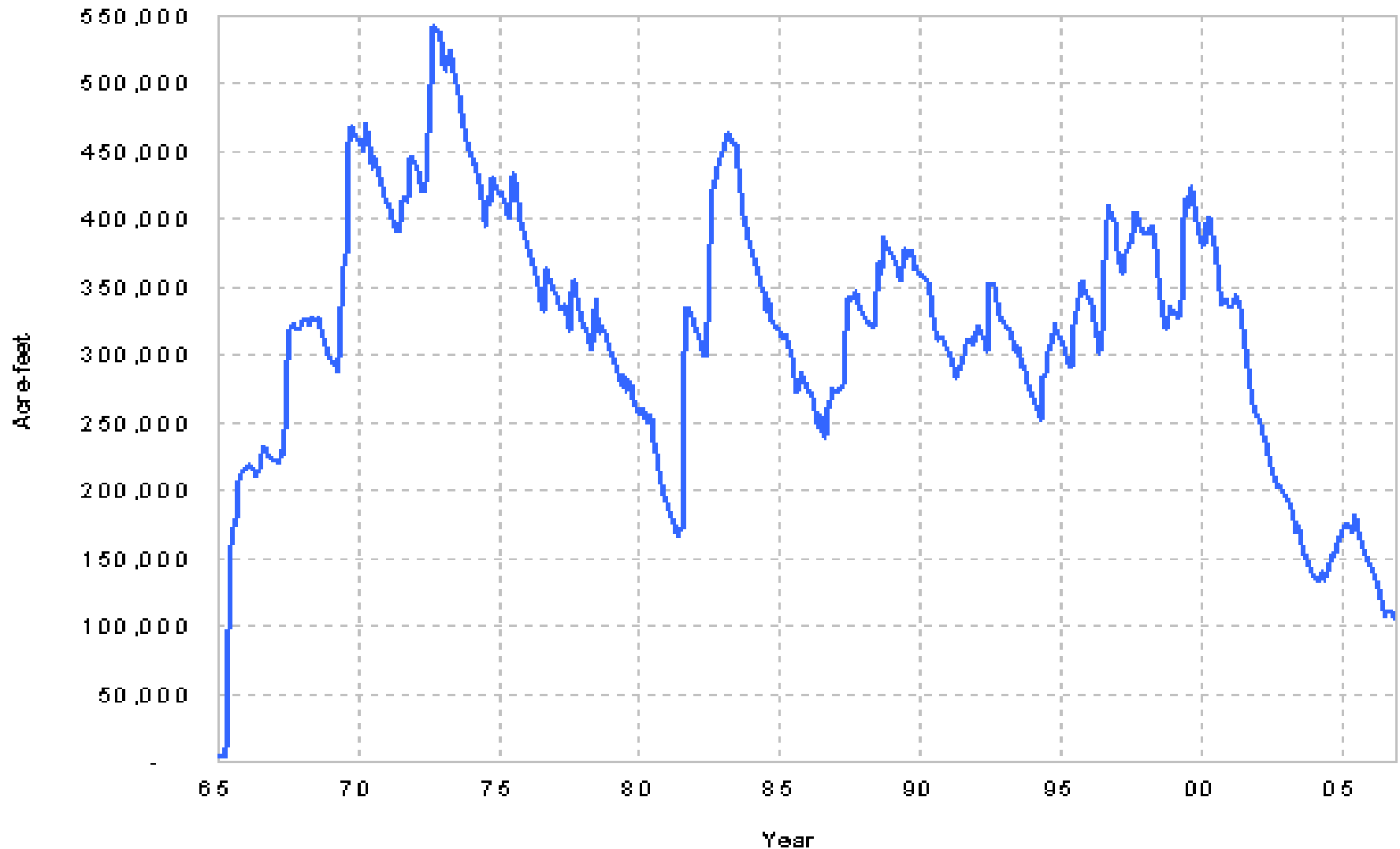
Rainfall (inches)



# History of Lake Meredith contents – To 2007

## LAKE MEREDITH

Total Storage





# CRMWA-Lake Meredith - 2011

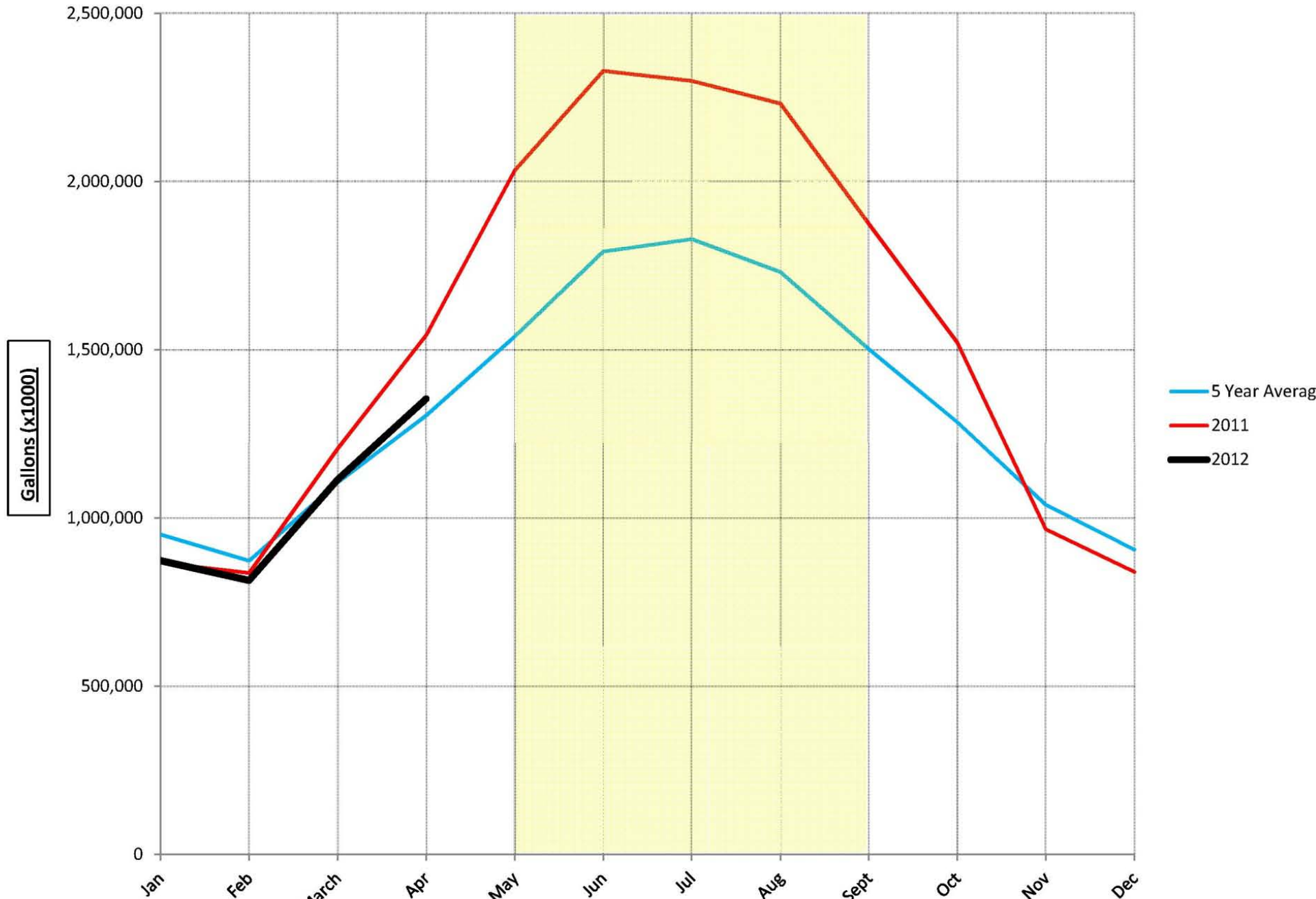
## Water Dropped Below Base of Intake



Lake contained less than 4% of  
capacity

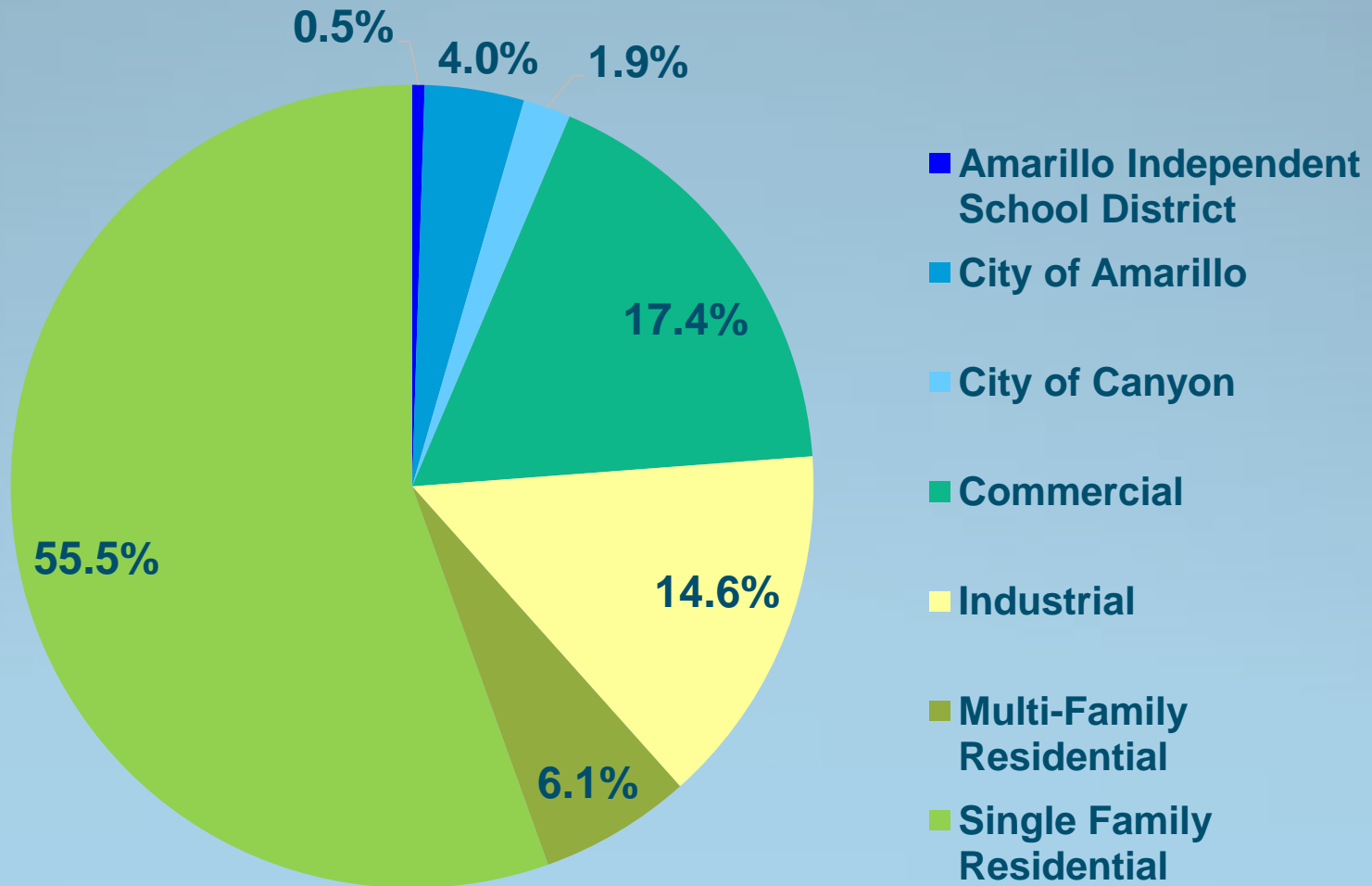
Emergency Pumps in place

## Monthly Water Production (2006 to Current)



# Amarillo Copes With the Ongoing Drought

Water Use Categories – 2011 by Customer Category





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## A new source needed:

1. Potter County well-field was a 2030 project in the Texas Water Plan.
2. Amarillo petitioned Region A to move it up to a 2010 project...this was in late 2007.
3. Region A recommended approval...
4. TWDB approved the 2010 project...
5. TWDB funding received in 2009 and 2010...
6. Total funding was over \$ 86 million...
7. Project actually began in early 2010...
8. Substantial completion in late Summer of 2011...
9. Project final anticipated this month.
10. Due to very low bids, money left over is being used for a transmission pipeline needed to move the new water to distant points of need.



# Well No. 501 - Potter County Well Field



**Water Sources & Pumping capacity  
Increased by 20 Million Gallons per day  
\$86 Million Capital Project**

# Potter Co. Pump Station

## Potter Co. Well – Field Project

### First new well field since 1956





# Potter County Pump Station Pump Bay Commissioned in Late 2011



**Under Construction**

# **Amarillo's Potter Co. Well-field Project 48-Inch Pipe at Ameron Factory Phoenix, Arizona**





# 48-Inch Transmission Pipeline

## Passing by CRMWA Forebay # 4 & Surge Tower



# Amarillo's Current Production Capacity

CRMWA Roberts County	26.4	MGD
Carson County wellfield	35	MGD
Potter County wellfield (09-2011)	21	MGD
SW wellfields (Some Dockum)	<u>10</u>	<u>MGD</u>
Total Groundwater	92.4	MGD
Lake Meredith (was 27.3 MGD)	0	MGD

**NOTE: Last summer, we reached an all-time peak day demand of 92 MGD.**

Amarillo's 500 MG balancing Reservoir can supply an additional 15 MGD for up to 30 days for summer peak demands, yielding a short-term capacity of 107.4 MGD. **With Lake Meredith restored, the sum will be 134.7 MGD**

# Amarillo Copes With Ongoing Drought Conditions

## A Multi-faceted Water Conservation Emphasis

Conservation is “Another Source”



Water conservation logo



# Amarillo Copes With Ongoing Drought Conditions

## Conservation Program Approach – A “work in progress”

1. The conservation Team: it's make-up.
2. Water Rate increases have a reduction effect...  
Rates still much lower than the state average.
3. Work with the media to increase conservation awareness.
4. Give presentations to civic organizations.
5. Set up/operate booths for several venues...hand out “promo items”
  - 5.1 Civic Center activities.
  - 5.2 “High Noon on the Square”
  - 5.3 “Star-light theater”.
  - 5.4 “Outdoor Watering” presentations @ libraries.
6. Working on a conservation-friendly landscape ordinance.
7. Rebate programs: Rain-freeze, Rain Harvesting & Lawn Sprinkler “Tune-ups”.
8. Every Drop counts website @ <http://water.amarillo.gov>

# City of Amarillo Water Conservation Emphasis

## *“Every Drop Counts” 2013*



Curious how every drop counts...you pay for every drop, whether you use water wisely or waste it! Water is a precious resource in the Texas Panhandle. Do at least one thing a day to save water. Even if the savings are small, every drop counts.

Visit <http://water.amarillo.gov> for more information.

# TOP-10 Round Table 2012

WELCOME: Sharon Oxendale  
Chief Operating Officer



INTRODUCTIONS: Emmett Autrey





# Reclaimed Water

Another Conservation Approach

Another water “source”



**Reclaimed Water Pumps.  
Hollywood Rd. WWTP  
Pumping to Excel Energy power plants**

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**Reclaimed Water used: 13-15 MGD**



## The City of Amarillo





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What else does the future hold?

We still have 2 billion gallons per year of unused effluent...How about indirect or direct re-use?

**Thank you !**  
**Any Questions?**

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