Drought & LCRA Water Partnership Update Briefing

Austin City Council Meeting
October 3, 2013
Water Supply Status
2013 likely to be 2nd lowest inflow year

<table>
<thead>
<tr>
<th>Rank</th>
<th>Year</th>
<th>Annual Total (in acre-feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2011</td>
<td>127,802</td>
</tr>
<tr>
<td>2</td>
<td>2008</td>
<td>284,462</td>
</tr>
<tr>
<td>3</td>
<td>2006</td>
<td>285,229</td>
</tr>
<tr>
<td>4</td>
<td>1963</td>
<td>392,589</td>
</tr>
<tr>
<td>5</td>
<td>2012</td>
<td>393,426</td>
</tr>
<tr>
<td>6</td>
<td>1983</td>
<td>433,312</td>
</tr>
<tr>
<td>7</td>
<td>1999</td>
<td>448,162</td>
</tr>
<tr>
<td>8</td>
<td>2009</td>
<td>499,732</td>
</tr>
<tr>
<td>9</td>
<td>1950</td>
<td>501,926</td>
</tr>
<tr>
<td>10</td>
<td>1967</td>
<td>503,572</td>
</tr>
<tr>
<td>Average</td>
<td>1942 – 2012</td>
<td>1,244,586</td>
</tr>
</tbody>
</table>
Cost of Firm Water vs. Interruptible Stored Water:

$6.50 per acre-foot

$151.00 per acre-foot

- **Austin Water Utility Stored Water**
- **Interruptible Agricultural Stored Water**

<table>
<thead>
<tr>
<th>Year</th>
<th>Firm Water Released (acre-feet)</th>
<th>Interruptible Water Released (acre-feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>0</td>
<td>356,814</td>
</tr>
<tr>
<td>2009</td>
<td>0</td>
<td>319,506</td>
</tr>
<tr>
<td>2010</td>
<td>0</td>
<td>176,731</td>
</tr>
<tr>
<td>2011</td>
<td>0</td>
<td>236,463</td>
</tr>
<tr>
<td>2012</td>
<td>0</td>
<td>236,463</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1,355,219</td>
</tr>
</tbody>
</table>
15 YEARs of stored water released for Austin Municipal:
428,841 acre-feet

1 YEAR of stored water released for Downstream Agriculture:
433,251 acre-feet
Highland Lakes Storage

Where we’ve been
- Lakes Buchanan and Travis full at 2.01 MAF

What could happen
- 1.9 MAF - 94% Total Combined Capacity
  - On Jan. 1 or July 1 - Interruption supplies are ceased for all customers except four major irrigation operations.

- 1.7 MAF - On Jan. 1 - Bay and Estuary
  - Reduce bay and estuary releases to meet 150 percent of critical needs (limited by Storable Inflows).

- 1.4 MAF - Any time - Firm Demands
  - Request firm customers to implement voluntary water use reduction measures to achieve a 5 percent reduction in use.

- 1.4 MAF - On Jan. 1 - Interruptible Supply
  - Begin gradual curtailment of interruptible supply to four major irrigation operations. Curtailment increases with lower storage levels. Environmental releases for instream flows are reduced to meet critical needs.

- 1.1 MAF - On Jan. 1 - Bay and Estuary
  - Environmental releases for bay and estuaries are reduced to meet critical needs.

2010 Water Management Plan Trigger Points
- 900,000 AF - Any time - Firm Demands
  - Request firm customers to implement mandatory water use restrictions to achieve a 10-20 percent reduction in use. Meet with customers to develop a curtailment plan should drought worsen.

- 600,000 AF - Drought Worse than Drought of Record - Cease Interruptible and Curtail Firm
  - If criteria indicate drought worse than record, begin curtailment of firm supply after ceasing interruptible supply (timing based on duration of drought).

Historic Lake Capacity
- Forecast - Wet Conditions
- Forecast - Average Conditions
- Forecast - Drought Conditions
- Forecast - Extreme Drought Conditions

Note: MAF equals One Million Acre-Feet
One Acre-Foot (AF) equals 325,851 gallons.
Date: September 1, 2013

* Projections take into account emergency drought relief measures affirmed by TCEQ on February 13, 2013.
Combined Storage Extreme Drought Scenario 1

FOR ILLUSTRATION PURPOSES - SUBJECT TO CHANGE

Does not include stored water releases for STP or senior run-of-river pass-through flows

Demands (Out)
- Evap
- Env
- Ag stored water demand plus losses
- Other firm demand
- COA Demand

Flows (In)
- Inflows (gaged)

Combined Storage
- DWDOR Storage Trigger

Annual Volume (in 1000 AF)

Current 60-Mo. Avg.

Like 2011
3-year avg '08, 11, 12 (lowest in last 5 years)

2013 2014 2015 2016 2017 2018
Combined Storage Extreme Drought Scenario 2

FOR ILLUSTRATION PURPOSES - SUBJECT TO CHANGE

Does not include stored water releases for STP or senior run-of-river pass through flows

DWDOR Storage Trigger

Demands (Out)
- Evap
- Env
- Ag stored water demand plus losses
- Other firm demand
- COA Demand

Flows (In)
- Like 2011
- 3-year avg '08, 11, 12 (lowest in last 5 years)

Combined Storage
- Combined Storage

Annual Volume (in 1000 AF)

Combined Storage Volume (in 1000 AF)
Drought Response Strategies
Drought Response

• Strategy 1: Austin Demand-Side Management

  ➢ Required 20% Pro-rata curtailment at 600K acre/feet of combined storage
    ➢ Austin already meets 20% goal but will implement Stage 3 restrictions when storage falls below 600K
    ➢ AE has approved pro-rata curtailment plans for Decker Power Station and Fayette Power Project
  ➢ Plan for additional water restrictions beyond Stage 3
    ➢ Enhanced Stage 3 (example – only outdoor hand watering)
    ➢ Stage 4 (No outdoor watering)
Drought Response

• Strategy 2: Protect Colorado River System Firm Water Interests
  
  ➢ Emergency Orders to continue cut offs of interruptible (rice farming) water throughout the duration of the drought
  
  ➢ Long term revisions to LCRA’s Water Management Plan (WMP) to reduce firm water risks
  
  ➢ Drought response is a key focus of COA/LCRA Water Partnership for 2012 and 2013
Drought Response

• Strategy 3: Investigate, evaluate and prioritize demands that can be met with alternative water sources:
  - Groundwater
  - Reclaimed water
  - Other sources
Drought Communication Plan

Marketing/Advertising
- Direct Mailer
- Austin Water Conservation Drought website
- Willie Nelson radio and TV ads
- Other advertising: Print, buses...
- Business & Restaurant outreach

Media Relations
- Meet with Media Managers
- Social Media

Public Involvement/Education
- Continue providing information about the drought and the move to Stage 3 through various community and business outlets
- City of Austin employee education: Drought and water conservation information to all employees. Emails to the workforce, City Source, internal departmental newsletters.
Conclusion

• Current drought is on a path to be worse than the 1950s drought of record

• Spring of 2014 key decision making point
  - Need for additional restrictions beyond Stage 3
  - Drought rate strategy

• Next Council Update – First Quarter 2014
  - Utility planning for regular Board & Commission updates
Questions?