Parker City Council

- Historical Water Delivery
- Lake Levels
- Water Supply Projects
- Water Conservation
- Water Contracts
Historical Water Deliveries
Historical Water Deliveries

- 1973 – 1988 delivery to Parker through a contract with Pecan Orchard WSC

- 1988 POWSC assigned all it rights to Parker
Lake Elevations
# NTMWD Reservoir Elevations

**(July 30, 2014)**

<table>
<thead>
<tr>
<th>Reservoir</th>
<th>Conservation Pool Elevation</th>
<th>Current Elevation</th>
<th>Down</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lavon</strong>&lt;br&gt;30%</td>
<td>492.0’&lt;br&gt;(Last full on 5–14–12)</td>
<td>480.69'</td>
<td>–11.31'</td>
</tr>
<tr>
<td><strong>Chapman</strong>&lt;br&gt;15%</td>
<td>440.0’&lt;br&gt;(Last full on 4–14–10)</td>
<td>431.41’</td>
<td>–8.59'</td>
</tr>
<tr>
<td><strong>Tawakoni</strong>&lt;br&gt;8%</td>
<td>437.5’</td>
<td>428.00'</td>
<td>–9.50'</td>
</tr>
<tr>
<td><strong>Texoma</strong>&lt;br&gt;28%</td>
<td>617.0’</td>
<td>612.01'</td>
<td>–4.99’</td>
</tr>
</tbody>
</table>
Lake Level Modeling with Planned Measures

Statistics and Shortages for Planned Measures

- **Begin Dallas WTPs 3&4**
- **Texoma WTPs 1&2**
- **Top of Conservation Pool**

Elevation in Lake Lavon:
- **495**
- **490**
- **485**
- **480**
- **475**
- **470**
- **465**

- **Stage 3 Trigger**
- **Stage 4 Trigger**
- **Very Dry (4.5%)**
- **Normal-Dry (25%)**
- **Wet (50%)**
- **Dry (20%)**

Legend:
- **Minimum**
- **Historical Elevation**
- **Minimum (Historical Flows)**
- **5th Percentile**
- **25th Percentile**
- **Median**
Water Supply Update
Near-Term Water Supply Plans

- Dallas Interim Purchase
- Lake Texoma Supply
- Dredging Lavon and Chapman
- Main Stem Pump Station
- Lake Texoma Desalination WTP
Projected NTMWD Demands and Supplies without Short-Term Supply 2017-2020

Short-Term Supply Need 25 to 45 MGD - Dry Year
Dallas Contract Extension
Dallas Raw Water Supply

- Executed three year contract with Dallas in May 2013
- Up 60 MGD
- Supplied from:
  - LRH
  - Tawakoni
  - Lake Fork
- Using existing NTMWD infrastructure to deliver
  - Tawakoni WTP
  - Tawakoni pipeline to Lavon
  - Reuse pipeline to Lavon
Dallas Raw Water Supply

- Extend interim purchase from Dallas until 2020
  - Dallas staff has concerns
  - Continued reliance on Dallas partnership
  - Cost at least $10 million per year
Lake Texoma Pipeline Project Update
Summary

- Balancing Reservoir – Complete
- Pipeline – Complete
- Plant Connections/Blending – 100% Complete

In service:
- WTP III/IV – May 2014
- WTP I/II – June 2014
- Currently using approx. 60 MGD
## Overall Project Cost Summary

<table>
<thead>
<tr>
<th>Item</th>
<th>Budget (Million)</th>
<th>Current (Million)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CMAR/Construction</strong> (Guaranteed Maximum Price set at Jan. 2013 Board mtg)</td>
<td>$282</td>
<td>$280</td>
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<tr>
<td>Engineering</td>
<td>$17</td>
<td>$17</td>
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<td>Land</td>
<td>$11</td>
<td>$9</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$310</strong></td>
<td><strong>$306 +/-</strong></td>
</tr>
</tbody>
</table>
Intake Dredging Projects
Lake Chapman

Access to 420:
240,000 Ac-Ft
94.5 MGD Yield

Current Silt Barrier – 420’

Current Lake Level – Approx. 428’

Post-dredging Pumping Limit – 415.5’

Post-dredging Channel Bottom – 412’

Lake Normal Pool – 440’

Conservation Pool

Sediment Pool

Additional 33,000 Ac-Ft
8.5 MGD Additional Yield

Remaining 37,000 Ac-Ft
0 MGD Remaining Yield

Conservation Pool

Sediment Pool

Access to 420:
240,000 Ac-Ft
94.5 MGD Yield

Additional 33,000 Ac-Ft
8.5 MGD Additional Yield

Remaining 37,000 Ac-Ft
0 MGD Remaining Yield
Lake Jim Chapman Project Status

- **Schedule:**
  - Contract time bid: 140 days
  - Completion: July 2014

- **Cost:**
  - $1.8 Million
Lake Lavon

RWPS 3
Lake Normal Pool – 492’

- Current Lake Level – Approx. 480’
- Current RWPS 3 Pumping Limit – 471’
- Post-dredging RWPS 3 Pumping Limit – 467’
- Remaining 64,129 Ac-Ft

Current Pumping Limits: 311,220 Ac-Ft
Access to Elevations (Post-Dredging): +34,011 Ac-Ft

RWPS 2
Lake Normal Pool – 492’

- Current Lake Level – Approx. 480’
- Current RWPS 2 Pumping Limit – 468’
- Post-dredging RWPS 2 Pumping Limit – 462.5’
- Remaining 34,599 Ac-Ft

Current Pumping Limits: 337,438 Ac-Ft
Access to Elevations (Post-Dredging): +37,323 Ac-Ft

Note: Max. Pumping Elevation Limit is Approx. 2’ Above Channel Bottom
Lake Lavon Project Status

- Final Engineering Tasks:
  - Permitting
  - Acquire Disposal Site
  - Construction Documents
  - Bid and Construction Phase

- Schedule:
  - Bid: Sept. 2014
  - Completion: May 2015
Main Stem Pump Station & Pipeline
Main Stem Pump Station & Pipeline

- New 100 MGD Pump Station on Main Stem Trinity River
- 17 M of 72”Pipeline
- Existing Conveyance Pump Station Expansion
- $95 million cost
- 2 to 2.5 year schedule
Texoma Desalination WTP
Desalination Plant Using Texoma Water

Option 2

- 11 m 84” pipeline parallel to existing Texoma pipeline
- 18 M 24” brine disposal pipeline
- Treated water & brine disposal PS at Sherman
- Texoma Pump Station Improvements
- 40 M 60/72” treated water pipeline – Leonard to McKinney
- $582 million cost
- 3 year schedule
Longer Term Water Supply Projects
Lower Bois d’Arc Creek Reservoir

Two Major Permits Required

- CWA Section 404
  USACE
- Water Rights
  TCEQ
# Current Cost Estimates*

<table>
<thead>
<tr>
<th>Project Component</th>
<th>Cost Estimate</th>
<th>Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reservoir (Land, Dam, Intake, PS, Conflicts, Permitting, Mitigation)</td>
<td>$ 413.0 M</td>
<td>$104.2 M</td>
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<tr>
<td>Terminal Storage</td>
<td>$30.7 M</td>
<td>$.2 M</td>
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<tr>
<td>90-Inch Pipeline**</td>
<td>$183.2 M</td>
<td>$4.4 M</td>
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</tbody>
</table>

January 2014 cost estimates

**Entire cost of Final Pipeline Alignment, Pump Station and Intake and Terminal Storage Location study included in 90-Inch Pipeline expenditures figure
# Lower Bois d’Arc Creek Reservoir Project Timeline

## MORE LIKELY SCHEDULE

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<td>Project Assessment</td>
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<td>Full Operation</td>
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</tbody>
</table>

- Phase I (Project Assessment)
- Phase II (Permit Applications)
- Phase III (Additional Permitting)
- Phase IV (Design)
- Phase V (Construction)
- Other Key Activities
## 2012 State Water Plan for NTMWD

<table>
<thead>
<tr>
<th>Water Management Strategy</th>
<th>Supply (Ac Ft/Yr)</th>
<th>Online (Year)</th>
<th>NTMWD Share of Capital Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Bois d’Arc Creek Reservoir</td>
<td>123,000</td>
<td>2020</td>
<td>$615,498,000</td>
</tr>
<tr>
<td>Additional Lake Texoma</td>
<td>113,000</td>
<td>2025</td>
<td>$152,900,000</td>
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<tr>
<td>Marvin Nichols Reservoir</td>
<td>174,840</td>
<td>2030</td>
<td>$830,894,000</td>
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<tr>
<td>Toledo Bend Reservoir</td>
<td>200,000</td>
<td>2060</td>
<td>$1,239,763,000</td>
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</tbody>
</table>
Ozone Update
Ozone Completion Schedule

- North Ozone Facilities
  - WTP IV Contact Basins  September 2013
  - WTP III Contact Basins  February 2014

- South Ozone Facilities
  - WTP II – North Contact Basin  May 2014
  - WTP II – South Contact Basin  June 2014
  - WTP I Contact Basin  June 2014

- All water is now ozonated
- Largest in the world for water treatment!
The Importance of Conservation and the Efficient use of Water
The Importance Conservation and the Efficient use of Water

- Conservation and Efficiency Reduces Demand
  - Delays Capital Improvements
  - Saves money
  - Avoids running out of water during times of drought

- Conservation and Efficiency is REQUIRED in Permitting New Supplies
GALLON PER CAPITA PER DAY

(GPCD = TOTAL water used / population)
GALLON PER CAPITA PER DAY

- State’s Goal of 140 GPCD
  - Entities should implement strategies to reduce by 1 gpcd each year until 140 is achieved

  - **Achieved through: (not exclusive to:**
    - Increasing block rates
    - Water Conservation Plans strategies / enforcement
    - Water Accountability and Loss Control – water loss audits
    - Implementation of Best Management Practices
    - Water Conserving landscape ordinances
Parker GPCD with Member City

5-Year Running Average
Municipal GPCD for NTMWD Member Cities

Total Per Capita Water Use (gpcd)


Allen Farmersville Forney Frisco Garland Mesquite McKinney Plano Princeton Richardson Rockwall Royse City Wylie NTMWD 140 gpcd Parker

Legend:
- Allen
- Farmersville
- Forney
- Frisco
- Garland
- Mesquite
- McKinney
- Plano
- Princeton
- Richardson
- Rockwall
- Royse City
- Wylie
- NTMWD
- 140 gpcd
- Parker
Wholesale Water Rate
Wholesale Water Rate

Contracts
- Finance the development of projects needed to provide its services
- Require the water provider to receive sufficient revenues from the cities it serves to pay the debt service and operation and maintenance costs of the provider’s system
- Minimums assure bondholders that water providers will generate sufficient revenues to satisfy their financial commitments
- Budget is proportioned based on each city’s minimum annual demand
Should a city consume a greater volume of water than its minimum annual demand, the excess water is purchased at the variable cost for electrical power and chemicals required to produce the additional volume of water.

Should a city consume less than its minimum annual demand, the Board of Directors generally rebates back to the city the variable cost of operations (power and chemicals) that were budgeted but not incurred.
Potential Modifications To Water Rebate Policy

- Item on Board agenda July 24, 2014
- Recommendation to not implement change for FY14
- NTMWD will develop a conservation policy for FY15 related to meeting goals & adoption of NTMWD water management strategies
QUESTIONS