Water Challenges for Utilities and Customers

Thursday, July 17, 2008

Dalton Utilities
Dalton Utilities – What Are We?

ELECTRIC
- 273.63 MW peak demand
- GENERATION: Part owner of 2 nuclear and 2 fossil-fired generating plants
- TRANSMISSION: One of four joint owners of the Georgia Integrated Transmission System - 369.5 miles (46, 115, and 230kV) transmission
- DISTRIBUTION: Nine substations with a total 544 MVA, 12kV distribution system and 196.7 miles of 12 kV distribution

NATURAL GAS
- 2nd largest LDC in Georgia
- SOURCES OF SUPPLY - Southern Natural Gas & East Tennessee Natural Gas
  - Total Contracted pipeline capacity = 35,026 dth/day
  - Storage capacity = 897,274 decatherms
- DISTRIBUTION - Serving customers in Floyd, Gordon and Whitfield counties:
  - 29 miles of transmission main; 269 miles distribution system
  - 87% consumed by local industry

TELECOMMUNICATIONS
- Only 100% fiber optic system in the state of Georgia
- Offer high speed connectivity to industrial, commercial and residential customers
- Provides broadband, high-speed internet, voice and cable television including HD and VOD
Dalton Utilities – What Are We?

**WATER**
- 64.6 MGD daily max permitted withdrawal & 66 MGD treatment capacity
- Sources: Conasauga River, Coahulla Creek, Mill Creek, Freeman Springs
- Additional Water Sources
- Three water treatment plants
- Drought Contingency Storage – 2.69 billion gallons in 4 reservoirs
- Average Daily Usage – 33.24 MGD (87% Industrial)

**WASTEWATER**
- Sewer use rules regulates influent loading & sets pretreatment limits for industrial customers
- 66 MGD daily max permitted treatment capacity
- Three updated treatment plants & Equalization Basin
- Land Application System: 9,200 acre forested system
- Water Reuse (13 MGD combined cycle electric generating plant)
- Compost 100% of solids for beneficial reuse
Industrial Customers...

• Industrial water use is 49% of our overall consumption

• Industry Proactive in Conservation
  ➢ DU-initiated Water Reuse Partnership between major carpet manufacturers and PPAD for over 10 years
  ➢ Reduction in Industrial water volume:
    ➢ 1997 – 6.3 billion gallons or 17 MGD
    VS
    ➢ 2007 – 5.0 billion gallons or 13.8 MGD
  ➢ 150% Reduction in water used to produce square yard of carpet
    ➢ 1983 – 21.26 gallons per square yd
    ➢ 2007 – 8.25 gallons per square yd
  ➢ Voluntary operational water reduction during drought
    ➢ Industry assists Utility in getting water conservation info out to their employees with bilingual communications
    ➢ Internal audits
    ➢ Scheduled shifts (production / cleaning)
    ➢ No unnecessary cleaning of equipment
    ➢ Grey water reuse (internally and externally)
    ➢ Deferred orders to facilities not located in drought-affected areas
    ➢ Have plans ready to implement if need to curtail water usage
Conservation....Innovation...Initiatives

From 1997-2007, $546 million in overall system improvements. Over 52% of that total ($285 million) directed to water and wastewater.

$153 million in water system improvements:

- 1997: River Road reservoir
- 1998-2006: Whitfield County countywide water expansion project
- 1998–present: Water Rehabilitation projects
- 1999-2000: Murray County Water Project
- 2000: Emergency generation at water plants
- 2000-08: Fish & Mussel surveys in Conasauga
- 2001: Dalton Utilities begins receiving water from Eastside Utilities (TN River)
- 2002: Eastside Utilities is granted an Interbasin Transfer Permit to sell water to Dalton Utilities (for use in Conasauga River basin).
- 2002: Purchase of Whitfield County water & sewer assets
- 2003-04: Equalization Basin at Riverbend Wastewater Treatment
- 2007: Water system Model
- 2007: Eastside Utilities (TN River) connection upgrades & connection to City of Calhoun water
- 2007-08: Mill Creek Water Plant Upgrades
Conservation....Innovation...Initiatives

$132 million in wastewater system:
- 1997-2000: Land Application System upgrades & rebuild
- 1997-2000: Sludge Handling Facility
- 1998-2000: Loopers Bend 19 MGD wastewater treatment plant built
- 1998-present: Sewage Collection System Rehabilitation
- 1998-2000: Biosolids Field Remediation
- 2000-2002: Riverbend wastewater plant renovation/expansion
- 2001-2002: Duke/KGen power plant constructed on Dalton Utilities LAS
- 2003: Watershed Assessment
- 2003-04: Equalization Basin at Riverbend plant
- 2004: Timber Harvesting
- 2004: Nitrate Remediation
- 2005: Effluent Pump Station & Raw Pump Station overhaul
- 2005: Composting facility
- 2006: LAS expansion property purchase
- 2008: Aerobic Digester
- 2007-08: Mill Creek Wastewater Plant
- 2007-08: Mill Creek force main & influent/effluent force main
Conservation....Innovation...Initiatives

• Four drought contingency reservoirs
  ➢ Storage capacity of 2.69 billion gallons (± 60 days usage)
  ➢ Capital cost – $28.2MM

• Eastside Utilities/Tennessee River

• Last 10 years, increased # of water customers from 27,000 to 39,924
  – growth of 47.9% - but only increased water usage by 1.7%.

• Continuing upgrades to distribution system have resulted in
  annual savings of 700 million gallons of previously
  unaccounted for water.

• Beneficial reuse of wastewater
  ➢ KGen
  ➢ Composting
Conservation Education…

• Created drought management plan for DU in 1998.
  ➢ 1 MGD saved during 5-year drought 1998-2002
• Began working with County Extension Agent to create educational literature.
• Leader in conservation education in NW Georgia.
  ➢ Website
  ➢ 24-hour drought hotline
  ➢ Radio & tv commercials
  ➢ Newspaper ads, bill stuffers, flyers
  ➢ Billboards
  ➢ Bilingual materials
  ➢ Working with local nurseries cooperatively to educate local citizens
• One of six pilot communities in State’s waterSmart program
Let’s be Smarter About our Water

Don’t water in the heat of the day
You will only lose water to evaporation. The best time to water is in the early morning, between 4 to 10 a.m.

Mulch!
Using mulch on the roots of plants and trees helps the soil retain water.

Water only once a week
When it hasn’t rained, a deep soaking every week will provide your plants with plenty of moisture.

Soak - don’t sprinkle
When you water, aim the nozzle at the base of plants so more water will reach the roots.

Turn off sprinkler systems when it rains
Install an inexpensive rain sensor shut-off switch.

Top 5 tips to help conserve water outdoors

1. Water Once a Week.
   And if it rains that week, don’t water! Watering less frequently encourages a deeper root system that better tolerates drought.

2. Prioritize Watering.
   When water is scarce, water valuable or irreplaceable trees and shrubs first.

3. Mulch!
   Edibles such as strawberries and blueberries deplete moisture and keeps weeds under control, so plants don’t have to compete with them for water.

4. Recycle!
   You’d be amazed how much water can be collected from air conditioner drips or a rain barrel under a downspout.

5. Don’t Stress Your Plants!
   Don’t fertilize when you can’t water it in. Raise mower blades height to keep grass healthier.

For more information on drought tolerant plants and how to care for your lawn and garden during dry weather, please consult the gardening experts at this location.

Dalton Utilities
24-hour drought hotline 706-529-1231
www.ConserveWaterGeorgia.net

Dalton Utilities
For the latest weather conditions, visit our website or call our customer service line 706-963-5231
Challenges...

• **Water production has fixed costs**
  - Fixed expenses of treatment relatively unchanged when treated volumes decrease
  - Decrease in volume due to drought/conservation results in fixed expenses per gallon increase

• **Find environmentally-sound, economically-viable methods to support quality economic growth**

• **Innovative Solutions**
  - Reasonable proven conservation effort
  - Augment supply from elsewhere
    - Tennessee River
    - Desalinization
  - Additional Drought Protection Storage
  - Aquifer storage and recovery systems