Tri-State Water Resource Coalition

Securing Water for Our Future

Conference Presentation
11/18/2010

Water: a Finite Resource in a Growing Region
Distribution of the World's Water

- **Oceans**: 97%
- **Ice caps & Glaciers**: 79%
- **Groundwater**: 20%
- **Lakes**: 52%
- **Water within living organisms**: 1%
- **Rivers**: 1%
- **Water vapor**: 8%
- **Soil moisture**: 38%
- **Accessible surface freshwater**: 1%
- **Freshwater**: 3%

**ALL WATER**
Water: The Indispensable Resource for Today and the Future
The Challenge
The United Nations projects that the human population will **increase from the current 6.8 billion to between 8 billion and 10.5 billion in 2050.**

**Current Population Situation**

It took the human species:
- 300,000 years to reach the **first billion**
- 130 years to add the **second billion**
- 30 years to add the **third billion**
- 15 years to add the **fourth billion**
- 12 years to add the **fifth and sixth billion**

Source: Bixby Center for Population, Health & Sustainability, University of California, Berkeley
2010 = Approximately 300 million
2050 = Approximately 400 million
U.S. Census Bureau 2000 Population by Census Tract

Source: U.S. Census Bureau Census 2000 Summary File 1 population by census tract.
Missouri Population Growth
1990-2000

Source: Missouri Economic Research and Information Center, Missouri Department of Economic Development
How Quickly We Forget…


• Southwest Missouri continues to be the driest part of the state. The April 11, 2006, U.S. Drought Monitor ranks most of southwest Missouri as extreme to severe drought. The current long-term Palmer drought index ranks southwest Missouri as having a moderate drought with adjoining areas in Oklahoma in the extreme drought category.

• On April 17, 2006, Pat Guinan, University of Missouri climatologist stated that “A year-long drought in southwest Missouri has built a precipitation deficit of over 21 inches. At Joplin, Mo., from March 2005 to March 2006, only 28 inches of rain fell compared with normal 49.5 inches, just 56 percent of normal.”

Source: MO DNR Water Resources Ctr.
Drought assessment Committee Meeting
May 2, 2006
Riparian vs. Prior Appropriation

“Reasonable use”
Concerns About Long Term Water Supply

2001 - MDNR presentation in Joplin raised concerns over sustainability of Ozark Aquifer.

2002 – Missouri American Water Company commissioned a study, performed by Wittman Hydro-Planning Associates, to construct a hydro-geologic model of the Ozark Aquifer.
Meeting the Challenge

January, 2003 – Wittman Study results released

…and Tri-State Water Resource Coalition was born.
Tri-State Water Resource Coalition: Leading the Way to a Secure Water Future
Composed of members from Miami, OK and Pittsburg, KS on the west, Lamar on the north to Springfield on the east, and the Arkansas state line on the south.
Membership Includes:

- Cities
- Counties
- Chambers of Commerce
- Investor-owned water providers
- Municipal water providers
- Rural Water Districts
- Tribal Councils
- Colleges and Universities
- Engineering Firms
- Interested Individuals
OFFICERS:

President – Roddy Rogers, City Utilities, Springfield
Vice-President - David Hertzberg, City of Joplin,
Treasurer - Matt Barnhart, Missouri American Water
Secretary - Hal VanDaGriff, Empire District Electric

BOARD OF DIRECTORS:

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EXECUTIVE DIRECTOR:  Gail Melgren
The Research
This study developed a hydro-geologic model of the Ozark Aquifer.

• Additional pumping and water level data is needed to manage the ground water supply.

• The Ozark Aquifer may be unable to satisfy demand, during an extended drought. That limit may come within 10 – 15 years for some parts of the Tri-State Water footprint.

• Ideally, the aquifer should be used as a peaking supply versus a sole source of water supply.

• An additional long term water supply source should be developed.
This study investigated the need for additional water, and potential sources of additional water for the region.

- Rivers and streams do not have sufficient flow to meet long-term demand without the construction of an additional reservoir.

- Ground water (the Ozark Aquifer) is not a strong option due to decreasing levels and potential contamination in some parts of the footprint.

- Additional source options included Grand Lake, Table Rock Lake, Stockton Lake, Truman Lake, a combination of those lakes, or one or more new reservoirs.

- The best opportunities for additional regional water supply were defined as Grand Lake, Table Rock Lake, Stockton Lake, and/or a new reservoir.
Next Steps

2007 – Coalition made application to US Army Corps of Engineers for water from both Stockton and Table Rock Lakes

Congressional re-allocation needed for both reservoirs
Corps of Engineers replied that it could be 5 – 7 years before we would receive an answer (and that could be NO)

December, 2007 – Springfield City Utilities Joined Coalition - Currently has paid for 25,000 acre-feet of storage from Stockton Lake and has a contract for the remaining 25,000 acre-feet to be paid for by 2016. Adequate water supply originally projected through 2040.
Next Steps

2008 – With a moratorium on Oklahoma water in place and a 5 – 7 year waiting period from the USACE, a new reservoir* site screening study was undertaken with $100,000 from the Coalition and $100,000 in matching funds from MDNR.

*It is the position of the Tri-State Water Resource Coalition that a new reservoir may become a necessity at sometime in the future but is not now a priority when our region is surrounded by existing reservoirs. Our preference is to seek already impounded water and build pumping stations and pipelines to supply our water needs.
Although Tri-State Water’s preference is to gain access to already impounded water and build pumping stations and pipelines to supply our regional water needs, one or more new reservoirs may become a necessity at some time in the future. This study identified potential sites for new reservoirs.

• It would not be economically feasible to construct one reservoir to serve the entire region.

• Fourteen potential sites were defined –
  • 10 to supply the western side of Tri-State Water’s footprint, assuming Joplin as a treatment and distribution point and
  • 4 potential sites to supply the eastern side of the footprint, assuming Springfield as a treatment and distribution point.
**Supplemental Reservoir Screening Study (Freese & Nichols) – June, 2010**

*The preferred sites identified in the original reservoir study would not provide economical water for the Pittsburg and Lamar areas so the consultant was asked to further investigate sites which would.*

- Three potential reservoir sites were investigated in more detail (two north of Joplin, between Lamar and Pittsburg, and one south of Joplin – an off-stream reservoir on Shoal Creek) along with the possibility of withdrawal of water from below Stockton Dam.
Supplemental Reservoir Study
Available online as .pdf files

Wittman Hydro Study
Black & Veatch Water Supply Study
Freese & Nichols Reservoir Site Screening
Freese & Nichols Supplemental Reservoir Study
TSWRC Report Summary

www.tristatewater.org
Potential Obstacles to Consider

Project Costs  Regulatory Intervention
Financing     Political Leadership
End-product Price  Regional Participation
**Tri-State Taking Action**

January, 2010

- Strategic plan approved by Board of Directors
Reservoirs

We continue to explore available options for gaining access to water in Table Rock, Stockton and Grand Lakes. We have had productive conversations with the Corps of Engineers in both Little Rock and in Kansas City. Forward steps are being taken to navigate the complex series of requirements to receive water from these lakes.
Upcoming Demand & Population Study

Missouri Department of Natural Resources is partnering with the Corps of Engineers office in Little Rock, Arkansas, to execute a new study to analyze future population and water demand within the Tri-State footprint.
Tri-State Taking Action

Educating Communities About Water Supply

**Tri-State Taking Action**

Building the Tri-State Water Coalition

The Coalition hired its first paid staff, an executive director, Gail Melgren, in June, 2010. Gail has been busy with a wide variety of activities including payroll, insurance, office equipment, financials, memberships, planning for the upcoming water conference, developing a comprehensive communications plan, building relationships with various stakeholders and learning more about the issue of water supply.
Tri-State Taking Action

Preparing for Future Projects

Tri-State Water Resource Coalition was founded in 2003 as a non-profit 501c3 corporation. Plans are unfolding to transition into a JMUC – a Joint Municipal Utility Commission. This commission will afford several important capacities for future projects, including the ability to issue tax-exempt bonds and the right of eminent domain.
Tri-State Taking Action

Developing a Communications Plan

Tri-State Water Resource Coalition plans to communicate water supply issues at the community, regional, state and federal level and is preparing a comprehensive communications plan to educate all stakeholders about water supply issues.
Join our Mission

Tri-State Water Resource Coalition’s mission is to secure adequate, quality water supplies for our region to help support a prosperous future for our communities. We thank those of you already supporting that mission. We invite those of you who are not yet members to join our regional coalition.