A Long Road
• INTRO

• WHERE ARE WE GOING?

• HOW DID WE GET HERE? (OPTIONS)

• STUDIES—MEETING THE CHALLENGE

• COSTS

• STRATEGIC AND ORGANIZATIONAL GROUNDWORK

• IMPLEMENTATION CONSIDERATIONS

• CONCLUSION
WHERE ARE WE GOING?
ALLOCATION OF STORAGE SPACE FOR USES

- Flood Control
- Usable Storage
- Hydropower
REALLOCATION OF STORAGE SPACE FOR DRINKING WATER
HOW DID WE GET HERE?

GENESIS

In the beginning---
WHPA

Final Report
Source of Supply Investigation
for Joplin, Missouri

Jack Wittman, Ph.D. CGWP     Vic Kelson, Ph.D. CGWP
Theresa Wilson

11th February 2003
GROUNDWATER LEVEL DECLINE FROM PREDEVELOPMENT TO 2006-2007

- Little or no change
- Less than 100 feet
- 100 to 199.9 feet
- 200 to 299.9 feet
- 300 feet or more
STATE OF MISSOURI

Matt Blunt
Secretary of State
CERTIFICATE OF INCORPORATION
MISSOURI NONPROFIT

WHEREAS, duplicate originals of Articles of Incorporation of

Tri-State Water Resource Coalition
N00546098

have been received and filed in the Office of the Secretary of State, which Articles, in all respects, comply with the requirements of Missouri Nonprofit Corporation Law;

NOW, THEREFORE, I, MATT BLUNT, Secretary of State of the State of Missouri, do by virtue of the authority vested in me by law, do hereby certify and declare this entity a body corporate, duly organized this date and that it is entitled to all rights and privileges granted corporations organized under the Missouri Nonprofit Corporation Law.

IN TESTIMONY WHEREOF, I have set my hand and imprinted the GREAT SEAL of the State of Missouri, on this, the 25th day of September, 2003.

Matt Blunt
Secretary of State
How are we going to meet this challenge? (i.e. what are the possible solutions?)
Conservation
Existing Water
New Water
US Army Corps of Engineers –
Little Rock District

Tri-state
water resource coalition

Water Supply Study

September 2006

Prepared by
BLACK & VEATCH

B&V Project No. 41395
Several options

1) Groundwater
2) Grand Lake-Oklahoma
3) Beaver Lake –Arkansas
4) Table Rock Lake
5) Stockton Lake
6) Pomme De Terre Lake
7) Truman Lake
8) New reservoir sites
Figure 6-1
2007

Regulate Water

Misouri Department of Natural Resources

Partnership

Have water

Tri-State Water Resource Coalition

Need Water
Coalition continues to look for water

— By Wally Kennedy
w.kennedy@joplinglobe.com

The Tri-State Water Resource Coalition is looking at two ways to make more water available to communities and water users in the region.

"The coalition wants to seek an adequate water supply for the area on two fronts," said Robert Nichols, chairman of the coalition. "We want an interim supply and a permanent supply."

The coalition, which met Wednesday morning in the basement of Joplin's City Hall, has approached City Utilities in Springfield about available water in Stockton Lake, and the Beaver (Ark.) Water District about available water in Beaver Lake.

"The water from Beaver Lake would serve the western part of our area. The water from City Utilities would serve the eastern part," said Nichols. "This could help us for five to 10 years while we seek a permanent, long-term solution."

The Missouri Department of Natural Resources has set aside $50,000 for the coalition to use to hire a consultant to help with the effort to create interim supplies of water.

The coalition also has applied for available storage water in Stockton and Table Rock lakes, but it could be seven to 10 years before the U.S. Army Corps of Engineers can tell the coalition whether its application has been accepted. The group has applied for 50,000-acre-feet of storage in both lakes.

The long-term solution, the group has decided, is a new reservoir in the region. Nichols said reservoir studies done locally in the 1960s and 1970s will be revisited. Those proposals looked at reservoirs on Center Creek, near Prosperity, and on Shoal Creek, near Sylva.

The coalition, he said, will update those studies first before looking at other possible sites, including an off-channel reservoir on the Spring River.

The coalition raised approximately $75,000 from its members when it formed to help fund an initial study of available water sources in the region. The group will go back to its members to seek more money to fund additional studies.

Members of the coalition are water users, both private and public, in Jasper, Newton and McDonald counties, and parts of Lawrence, Barton and Barry counties in Missouri. The group also has members from Cherokee and Crawford counties in Kansas, and tribal nations and Ottawa County in Oklahoma.

A new water supply capable of providing an additional 66 million gallons per day is needed to meet the demand in 2050. By comparison, the city of Joplin uses approximately 11 million gallons of water per day.

Estimated growth
REQUEST TO BE INCLUDED IN RESERVOIR STUDY
May 2008

Name of Utility: CITY UTILITIES OF SED
Street Address: 1521 W. CAHOUN
City, State, Zip: SEDALIA, MO 65301

☐ Not interest in participating in the Study at this time
☐ Would like to be included in the Study

If you wish to be included in the Study, please answer the following inquiries.

<table>
<thead>
<tr>
<th>Population</th>
<th>Total Water Produced-MG</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>2.65 Billion</td>
</tr>
<tr>
<td>1960</td>
<td>2.96 Billion</td>
</tr>
<tr>
<td>1970</td>
<td>4.4 Billion</td>
</tr>
<tr>
<td>1980</td>
<td>6.35 Billion</td>
</tr>
<tr>
<td>1990</td>
<td>8.77 Billion</td>
</tr>
<tr>
<td>2000</td>
<td>11.33 Billion</td>
</tr>
</tbody>
</table>

- What is the current water production capabilities? 63.3 million gallons per day
- Estimated 200 population 21,500 City 37,500 Region
- Estimated 200 population 29,000 City 73,000 Region
- Estimated total (annual) additional water requirement in 2030 0 million gallons (region)
- Estimated total (annual) additional water requirement in 2060 2,000 million gallons (region)
- Estimated peak day requirement from new source in 2030 30 million gallons per day
- Estimated peak day requirement from new source in 2060 149 million gallons per day
- Who should the Coalition contact as the study progresses?

Name: [Redacted]
Phone No: [Redacted]
Email: [Redacted]

Please return this survey to: Robert L. Nichols, President Tri-State Water Resource Coalition 1 S. Main Suite 102 Webb City, MO 64870

Note: We will real additional storage capacity in 2005 based on projected usage.

One South Main Suite 102 Webb City, MO 64870
(417) 673-7151 (417) 673-5308 FAX
bniichols66@shiglobal.net
2007 – Coalition made application to US Army Corps of Engineers for reallocation of water storage from both Stockton and Table Rock Lakes

REQUEST TO THE
LITTLE ROCK DISTRICT
CORPS OF ENGINEERS

CONCERNING WATER STORAGE
IN
TABLE ROCKE LAKE, MISSOURI

OCTOBER 23, 2008
Could take 7 years to get an answer (we’re at 9)

---And---

What if the (COE) answer is no?
WATER SUPPLY RESERVOIR SCREENING STUDY

CITY OF MONETT AND MISSOURI DEPARTMENT OF NATURAL RESOURCES
In Conjunction with Tri-State Coalition

July 2009
MEMORANDUM

TO: Tri-State Coalition
FROM: Freese and Nichols, Inc.
SUBJECT: Supplement Reservoir Screening Study
DATE: July 23, 2010

Introduction and Summary

The goal of this study was to supplement information developed in an earlier study performed for the City of Monett in May 2008. The earlier study focused mainly on meeting water demands for the entire Tri-State Coalition service area, focusing on east and west regions, which were centered in Joplin and Springfield. This study focuses on meeting the water needs of some of the smaller demand centers within the area. This study involves a conceptual overview and screening study of Sites 1 and 2 (see earlier study), withdrawal of water from below Stockton Dam, and an off-channel reservoir on Shoal Creek (Site 12).

The screening process began with three potential dam sites, Dams 1 and 2 (see previous study) and Dam 12, shown on the attached Figure A-1. Sites 1 (at a capacity of 35 mgd), 2, and 12 are off-channel reservoirs pulling water from the Spring River and Shoal Creek. Site 1 is an on-channel reservoir at a capacity of 10 mgd because the reservoir fills with runoff from its drainage area, and no pumping from the river is required to supplement the reservoir's supply. Four alternatives to serve the Pittsburg, Lamar, Empire District Electric Corporation, and the rural water districts from Sites 1 and 2 were investigated (See Figures A-2 through A-5). This investigation was expanded to also include Missouri American Water Company (Joplin area). Alternatives for serving the Pittsburg, Lamar, Empire District Electric Company, and the rural water districts using Stockton hydropower releases were also investigated (See Figure A-7). This alternative was expanded to include serving City Utilities (Springfield area). Serving only City Utilities using Stockton hydropower releases was also investigated. Serving the Joplin area with an off-channel reservoir (Dam 12) was also considered (See Figure A-6).

For each of the potential sites, available hydrologic, geologic, environmental, and soils information was reviewed in order to approximate the viability of the sites for dam construction (see earlier study for information on Sites 1 and 2). Then, a conceptual level estimate of the construction and total project costs for each of the potential reservoirs, including transmission costs, was developed. No treatment costs were considered. This memo documents the approach taken in the initial portions of the screening process and summarizes the results and conclusions reached. For additional information on assumptions made during the screening and cost estimating processes, see the earlier screening study completed in July 2009.

Reservoir Yield Calculations

A daily model using historical flow records from the available USGS stream flow gauges was developed and used to determine the approximate annual firm yield of each potential reservoir. The firm yield is defined as the average constant flow rate that, over the historical period, had the reservoir been in place, could have been withdrawn without emptying the reservoir. Each site was reviewed using available flow data to estimate the historical flow at the site. For the off-channel reservoirs, flows in the contributing area and on the main stem from which water would be pumped were estimated. The diversion pumping rate is the rate at which water
Supplemental Reservoir Study
The FUTURE of our Regional Water Supply
Tri-State Memorandum of Agreement Between Missouri, Oklahoma and Kansas
Regarding Cooperation on Water Quality and Water Quantity Issues in the States' Shared Water Resources

PURPOSE
This Memorandum of Agreement ("MOA") is entered into by and between the Governor of Missouri, the Governor of Oklahoma and the Governor of Kansas for the purpose of enhancing and promoting cooperation among the state agencies which address water quality and water quantity issues involving surface and ground water resources in the three states. These shared water resources are important economically and environmentally to Missouri, Oklahoma and Kansas. As this region continues to grow and develop, we must act collectively to ensure that we maintain our abundant supply of water and protect and improve our historically high quality waters, which have long characterized the region. This MOA is intended to formalize the resolve of the three states to cooperate in addressing these water issues of common concern. The shared water resources covered by this MOA are... (yet to be defined).

RESOLUTION
WHEREAS the Governors of the states of Missouri, Oklahoma and Kansas have pledged their support to protect the environment and economic welfare of the shared water resources for the benefit of the citizens of their states; and

WHEREAS the relevant agencies of the three states have pledged to cooperate in an effort to protect water quality and quantity and ensure the use of the shared water resources for the economic benefit of the three states; and

WHEREAS the three states have mutual concerns and responsibilities for the stewardship of their shared water resources,

NOW, THEREFORE, to enhance and promote cooperation in the management of water quality and water quantity between the states, the Governor of Missouri, the Governor of Oklahoma and the Governor of Kansas do hereby agree jointly and cooperatively to direct their respective natural resource agencies, the Missouri Department of Natural Resources (MDNR), the Oklahoma Water Resource Board (OWRB) and the Kansas Water Office (KWO) to:

1. Work together to develop a common hydrologic definition of the shared water resources and implement coordinated plans to protect and improve water quality, water quantity and the quality of life;

2. Work together to develop, implement, and share tri-state monitoring and modeling of water quality and water quantity in the shared water resource;
October 7, 2011

RODDY ROGERS
CITY UTILITIES OF SPRINGFIELD
PO BOX 551
SPRINGFIELD, MO 65801

RE: Future water demand

Dear Water Provider:

The Missouri Department of Natural Resources (MDNR) in partnership with the United States Army Corps of Engineers (USACE) – Little Rock District has initiated a study to evaluate the long-term water supply needs of southwestern Missouri. The purpose of this study is to establish the baseline of current water use and to model future water demand to the year 2060. As you are likely aware, much of the region has experienced significant population growth during the past several decades and continued growth is predicted. Results generated by this study will help direct water supply planning efforts currently taking place in the region.

Complete and accurate data is critical for developing a meaningful water demand forecast, therefore, I am writing to ask for your assistance with the study. During the coming weeks you will receive a request for information from Mr. Russ Wallace with the USACE. We are seeking to collect information such as the quantity of water produced, type of water use (municipal, industrial, etc.), the number of connections, rate structures, active conservation practices and several additional variables. This data will be combined with 2010 census data and historical climatic data to develop a water demand forecast using the IWR – MAIN (Municipal and Industrial Needs) model. The model will forecast changes in water demand (representing a deficit or surplus versus capacity) over time for the region. We anticipate completing the study and publishing the results during the summer of 2012.

Please feel free to contact me at any time if you have questions regarding this study. I can be reached at (573) 751-1134. Thank you for your participation and interest in southwest Missouri’s water future.

Sincerely,

DEPARTMENT OF NATURAL RESOURCES

Ryan P. Mueller, P.E.
Director, Water Resources Center
2012

How much do we Need?
2013

How much do we have?

Gap analysis

Southwest Missouri Water Resource Study – Phase II
Regional Supply Availability (2010-2060)

August 2013 Preliminary Draft Report
2014

REALLOCATION STUDY
Form a Joint Municipal Utility Commission (JMUC)

Legally established a Joint Municipal Utility Commission (JMUC), an entity that can implement a significant water project including acquiring land on behalf of the public health and safety and issuing tax exempt bonds.

THE SOUTHWEST MISSOURI JOINT MUNICIPAL WATER UTILITY COMMISSION

BYLAWS
Approved 11/25/14

ARTICLE I

COMMISSION, OFFICES, RECORDS, SEAL

Section 1.1. The Commission. The Southwest Missouri Joint Municipal Water Utility Commission is a commission that is organized under the Missouri Joint Municipal Utility Commission Act, Sections 393.700 to 393.770 R.S.Mo. (the "Act"), and is established pursuant to its Joint Contract dated March 21, 2012 (the "Joint Contract"); this Commission has members as provided in Article III below.

Section 1.2. Principal Office. The principal office and location of this Commission shall be at such place as may be designated from time to time by the Board of Directors.

Section 1.3. Records. This Commission shall keep as permanent records minutes of all meetings of its members and Board of Directors, and a record of all actions taken by committees of the Board of Directors. This Commission shall maintain appropriate accounting records. Records shall be maintained in accord with the Missouri Open Meetings and Records Act (Sunshine Law) section 610.010 R.S.Mo., ETSEQ. The board will establish by resolution an open act meetings and records policy and appoint a custodian of records in accord with the Sunshine Law.

This Commission or its agent shall maintain a record of its members in a form that permits preparation of a list of the names and addresses of all members, in alphabetical order. This Commission shall maintain its records in written form or in another form capable of conversion into written form within a reasonable time.

Without limiting the records required to be kept pursuant to this Section 1.3, this Commission shall keep a copy of the following records at its principal office:

(a) The Joint Contract and all amendments thereto currently in effect;

(b) its bylaws or restated bylaws and all amendments thereto currently in effect;

(c) resolutions adopted by its Board of Directors relating to the characteristics, qualifications, rights, limitations and obligations of members or any class of members;
2014

How will we fill the gaps?

Southwest Missouri Water Resource Study – Phase III
Appendix A - Scope of Work

December 2014 - Version 1.0
2015-Continue Reallocation Study
FINAL REPORT

Preliminary

FINAL

Integrated Storage Reallocation Report and Environmental Assessment for Stockton Lake, Missouri

Prepared by Planning Division
August 1993
CONTRACT FOR WATER STORAGE SPACE

PERPETUAL SPECIFIED YIELD

TRACK IT LUMP SUM OR ANNUAL INSTALLMENTS

SHARE OPERATING COSTS

WATER STORAGE CONTRACT BETWEEN THE UNITED STATES OF AMERICA AND THE BOARD OF PUBLIC UTILITIES OF THE CITY OF SPRINGFIELD, MISSOURI FOR WATER STORAGE SPACE IN STOCKTON LAKE, MISSOURI

THIS CONTRACT, entered into this 12th day of October, 1952, by and between THE UNITED STATES OF AMERICA (hereinafter called the "Government") represented by the Contracting Officer executing this contract, and the Board of Public Utilities of the City of Springfield, Missouri (hereinafter called the "User");

WITNESSETH THAT:

WHEREAS, the Flood Control Act of 1954 (Public Law 83-780, 83rd Congress), authorized the construction, operation, and maintenance of Stockton Lake on the Sac River, Missouri, (hereinafter called the "Project"); and

WHEREAS, the User desires to contract with the Government for the use of storage added to the Project by action of the Assistant Secretary of the Army for Civil Works for municipal and industrial water supply, and for payment of the cost thereof in accordance with the provisions of the Water Supply Act of 1958, as amended (43 U.S.C. 390b-f); and

WHEREAS, the User is empowered to contract with the Government and is vested with all necessary powers of accomplishment of the purposes of this contract, including those required by Section 221 of the Flood Control Act of 1970 (42 U.S.C. 1962d-5d) (as amended);

NOW THEREFORE, the Government and the User agree as follows:

ARTICLE I - Water Storage Space.

a. Project Construction. The Government, subject to the directions of Federal law and any limitations imposed thereby, shall modify the Project so as to include therein space for the storage of water by the User.

b. Rights of User.

(1) The User shall have the right to utilize an undivided 7.63 percent (estimated to contain 50,000 acre-feet after adjustment for sediment deposits) of the usable storage space in the Project between elevations 830.0 feet National Geodetic Vertical Datum and 867.0 feet above National Geodetic Vertical
Table Rock Lake Master Plan Revision

There are several alternatives under consideration for the Table Rock Master Plan Revision. Each of these alternatives and its potential impacts are summarized below. For more information, please visit: http://www.swl.usace.army.mil/Missions/Planning/TableRockMasterPlanUpdate.aspx

Alternative 1 – No Action
Under the No Action Alternative, the land use classifications would stay the same and none of the 19,536 acres of land around the lake would be reclassified. The No Action Alternative would maintain the existing resource management practices, no shoreline areas would be designated as Vegetative Management, and there would be no revisions made to respond to changed conditions.

Alternative 2 – Balanced Use (Preferred Alternative)
Alternative 2 decreases the amount of Low Density Recreation and increases the acres classified as Environmentally Sensitive and Wildlife Management. The lands that currently have no classification would primarily become Environmentally Sensitive and the lands received from the US Forest Service in the Cow Creek area would become primarily Wildlife Management. Project Operations land would be reduced by about 160 acres. A 50-foot Vegetative Management classification would be added along many shoreline areas and would overlay other land classifications.

Alternative 2a – Slow Growth
Similar to Alternative 2, but would classify 232 acres near existing subdivisions to Low Density Recreation rather than to the Environmentally Sensitive land classification.

Alternative 2b – Maintain High Density
Similar to Alternative 2, but would maintain 74 acres as High Density Recreation for potential future development (33 acres would not be classified as Low Density Recreation and 41 acres would not be classified as Wildlife Management as proposed under Alternative 2).

Alternative 2c – No New High Density
Similar to Alternative 2, but would reduce High Density Recreation by 95 acres (94 acres would be classified as Low Density Recreation and 1 acre as Environmentally Sensitive). Existing destination resorts would not be able to expand.

Alternative 2d – No Vegetative Management Area
Similar to Alternative 2, but would not include the proposed 50-foot Vegetative Management area around the lakeshore.

Alternative 3 – Conservative
Alternative 3 would reduce High Density Recreation lands by 78 acres and would reclassify all Low Density Recreation lands to Environmentally Sensitive (to total 14,146 acres). A Vegetative Management overlay would not be necessary as the Environmentally Sensitive classification provides similar protection. Existing permitted shoreline uses would be grandfathered but there would be no new permits issued.

Alternative 4 – Extreme Development
Alternative 4 would reclassify all Environmentally Sensitive Areas from Alternative 3 to Low Density Recreation, resulting in over 14,000 acres classified for potential development and only a small portion of this area (approximately 4,000 acres) would have a Vegetative Management overlay.
COSTS

Leveraged Funding

$2 million plus—
Tri State $172,500
Missouri American $150,000
Rest State and Federal funds

Unprecedented Partnership

Little Rock

Unprecedented Partnership

Kansas City
Next Steps

(1) Alternatives Analysis

(2) Tentative Selected Plan

(3) Agency Decision

(4) Approval - Assistant Secretary of the Army
STRATEGIC AND ORGANIZATIONAL GROUNDWORK
Regionally

- Ozarks Water Watch
- Watershed Committee of the Ozarks
- Multi Basin Partnership
- Future of Water Committee
Missouri Regional Water Supply Study and Project Areas

Legend
- Clarence Cannon Wholesale Water Commission
- Little Otter Creek, Caldwell Co.
- Cameron Pipeline Project
- Atchison Co. Wholesale Water Commission
- Howard Co. Regional Water Commission
- Northwest MO Study Area
- North Central MO Study Area
- Southwest MO Study Area

State Water Planning

Interagency Task Force
Legislative

- Senator Blunt
- Senator McCaskill
- Congressman Long
- Congresswoman Hartzler
- US Army COE headquarters
- US dept of Ag
- US EPA
- US senate
- US house
- Interstate council on water policy
- Lobbying firms
- SW Power Resources Association
- COE National Water Resources Center
2011 M&I Water Supply Database

2012-R-02
Implementation Considerations

Project Costs  Regulatory Intervention
Financing  Political Leadership
End-product Price  Regional Participation
Environmental and Archaeological Studies
Suddenly, a heated exchange took place between the king and the moat contractor.
Members

- Carthage*
- Branson
- Cassville
- Joplin*
- Lamar*
- Monett*
- Mt Vernon*
- Nixa*
- Springfield*
- Webb City*
- Empire Electric
- Greene County
- Jasper County
- Missouri American Water Company
- Stone County
Why be a part of Tri State/JMUC?

Want to be a part of Tri State/JMUC?