



US Army Corps  
of Engineers®



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# *Water Supply Database 2004 Survey*

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## **Municipal & Industrial**

*Storage Space*

*Storage Costs*

*Storage Not Under Contract*

*Comparison to 1996 Data*

*Reallocations*

*Studies Underway*

*Revenues Received*

*Costs of Collection*

*Local Sponsors*

*People Served*

## **Irrigation**

*Storage Space*

*Storage Costs*

U.S. Army Corps of Engineers  
Institute for Water Resources  
Alexandria, VA 22315

Prepared by:  
Theodore M. Hillyer  
Senior Policy Analyst

### Corps Projects with Municipal and Industrial and Irrigation Water Supply



# Forward

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This update of the Corps water supply database was initiated under the fiscal year 2004 Policy Studies Program of the U.S. Army Corps of Engineers Institute for Water Resources (IWR). Over the course of 2004 the Policy Studies Program was reoriented as part of IWR's realignment in response to the Chief of Engineers' 2012 initiative and the subsequent reorganization of Headquarters, USACE. Under the reorganization of the Institute and HQUSACE this effort falls under the Water Supply Business Line, led by Ron Conner of the Institute for Water Resources.

This exercise did not just update the older 1996 data but required the addition of the following new data on municipal and industrial (M&I) water supply: information on reallocations, water supply studies underway, revenues received and the costs of collection, local sponsors and project yields. The first report on the 2004 data update was dated 15 October 2004. At that time there were six districts that had not submitted all the required data. That report was distributed to the MSC Water Supply Business Line Managers for review and comment. For this revised report, most of this outstanding data have been supplied. In addition, this report reflects revisions due to peer review of the earlier report along with this new and more complete data.

Numerous individuals from the Corps MSCs and districts provided the data necessary to develop this report, particularly the MSC Water Supply Business Line Managers. The Corps employees who are known to have provided input are identified in Appendix B. The author wishes to thank each and every one of them for their outstanding effort in response to this data call. This information will be invaluable in the future preparation of responses to questions raised by the Administration, Congress and the general public. Data collected will also be utilized in the Institute for Water Resources Value to the Nation web site.

The valuable interactive map identified in this document is a product of Ms. Monica Franklin of the Institute of Water Resources. Her contribution to the ease in which the data collected will be available for use is much appreciated.

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# OVERVIEW

## A. MUNICIPAL AND INDUSTRIAL WATER SUPPLY

1. Introduction. Municipal and industrial (M&I) water supply was established as one of the eight business lines for Corps's budgeting purposes in the fiscal year 2005 budget. In order to manage this business line properly it was necessary to update certain data and develop new data that can be used to assess business line performance. The previous water supply database was limited to storage space and costs. This database is contained in the *Water Supply Handbook*, IWR Report 96-PS-6, dated December 1998 and is based on a 1996 survey. This report can be found on line at: <http://www.iwr.usace.army.mil/iwr/pdf/96ps4.pdf>. By memorandum dated 6 May 2004, the Chief of the Programs, Directorate of Civil Works called for an update of this 1996 data as well as the collection of new data. A copy of this memorandum is provided as **Appendix A**. The following data reflect what was captured in this new update. A large number of individuals in our divisions and districts were involved in this data call. Those individuals with known input to the development of this data are provided as **Appendix B**.

2. Total Storage. The national total, summarized by division, of all M&I water supply storage space contained in Corps reservoir projects is shown in **Table 1**. A breakout by district, project and contract is provided as **Appendix C**. As indicated in the table, there are 295-signed M&I

**Table 1: M&I Water Supply Storage Space Summary by Division**

Division	Projects	Contracts	Storage Space (acre-feet)			
			Present	Future Under Contract	Future Not Under Contract	Total
NAD	8	9	143,810	4,000	0	147,810
SAD	11	26	208,080	12,920	0	221,000
LRD	22	30	529,256	49,500	21,600	600,356
MVD	8	10	197,564	13,750	163,817	375,131
NWD	16	29	406,914	455,530	90,636	953,080
SWD	65	187	5,034,155	1,569,960	471,501	7,075,616
SPD	4	4	482,900	0	0	482,900
<b>TOTAL</b>	<b>134</b>	<b>295</b>	<b>7,002,679</b>	<b>2,105,660</b>	<b>747,554</b>	<b>9,855,893</b>

water supply agreements (including 4-agreements just for water conduits) in 134 reservoir projects. These 134 projects have a total of about 9.86 million acre-feet of storage for M&I water supply. In this table "present use" defines the storage that is under a signed agreement for immediate use. Some of this storage has already been repaid and some is being repaid over a period of 30 to 50 years. The "future under contract" is that storage that is under a future repayment agreement. The "future not under contract" is that space that was included in reservoirs under an assurance that an entity would, some time in the future, agree to repay the costs. The table also includes not only storage that was originally authorized and constructed as part of a multipurpose project, but also storage that has been reallocated. The vast majority (approximately 72 percent) of the storage is contained in reservoir projects located in the Southwestern Division. There are 15 of our districts (New York, Norfolk, Charleston, Buffalo, Chicago, Detroit, St. Paul, Memphis, New Orleans, Seattle, Walla Walla, Galveston, Los

## Water Supply Database 2004 Survey

Angeles, Honolulu and Alaska) that do not have projects that contain storage space for M&I water supply.

3. Total Costs. The national total, summarized by division, of the investment price of the M&I water supply storage space is shown **Table 2**. A breakout by district, project and contract is provided as **Appendix C**. The total cost of storage space, including the cost of specific water

**Table 2: M&I Water Supply Investment Price Summary by Division**

Division	Projects	Contracts	Storage Space (\$000)			Conduit (\$000)		Total (\$000)
			Present	Future Under Contract	Future Not Under Contract	Under Contract	Not Under Contract	
NAD	8	9	131,339	7,500	0	0	0	138,839
SAD	11	26	244,671	1,588	0	219	0	246,478
LRD	22	30	62,250	11,413	5,665	0	1	79,329
MVD	8	10	28,172	8,940	5,461	0	0	42,573
NWD	16	29	43,720	50,042	22,503	365	0	116,630
SWD	65	187	380,665	242,319	57,301	34,489	516	715,290
SPD	4	4	138,106	0	0	0	0	138,106
<b>TOTAL</b>	<b>134</b>	<b>295</b>	<b>1,028,923</b>	<b>321,802</b>	<b>90,930</b>	<b>35,073</b>	<b>517</b>	<b>1,477,245</b>

supply conduits is \$1.48 billion. This dollar value is reflective of the investment cost used in the agreements and varies from about 1950 dollars to 2004 dollars. The vast majority (about 94%) of the costs are under a repayment agreement for either present or future use.

4. Projects. The 134 Corps multipurpose reservoir projects that contain storage space for M&I water supply are located in 25 states plus Puerto Rico. A list of the projects is contained in **Appendix D** and summarized in **Table 3**. The number of projects listed in the table totals 140, as six of the projects are located on the border of two states.

**Table 3: Distribution of M&I Water Supply Projects by State**

State	Number	State	Number	State	Number
Texas	27	North Carolina	4	Connecticut	2
Oklahoma	20	Pennsylvania	4	Iowa	2
Kansas	15	West Virginia	4	Mississippi	2
Arkansas	13	California	3	North Dakota	2
Ohio	7	Illinois	3	Tennessee	2
Missouri	6	Indiana	3	Maryland	1
Georgia	5	South Carolina	3	Massachusetts	1
Kentucky	5	Virginia	3	New Mexico	1
				Oregon	1
				Puerto Rico	1

5. Storage Space and Costs Not Under a Repayment Agreement. As shown in the above tables, only 747,554 acre-feet (approximately 7.6 percent) of the 9.86 million acre-feet of the storage



space and about \$91.45 million of the \$1.48 billion investment cost (approximately 6.2 percent) have not placed under a repayment agreement. The breakout of this cost by district, state and project is provided in **Table 4**.

**Table 4: Breakout of Storage Space and Costs Not Under Contract**

Division	District	Project	State	Storage Space (acre-feet)	Assigned Cost	
					Storage Space (\$)	Conduit (\$)
LRD	Pittsburgh	Berlin	Ohio	19,400	1,365,000	1,300
		Stonewall Jackson	West Virginia	2,200	4,300,000	0
MVD	Vicksburg	DeGray	Arkansas	163,817	5,460,500	0
NWD	Portland	Lost Creek	Oregon	6,292	5,730,300	0
	Kansas City	Harry S. Truman	Missouri	324	100,000	0
		Rathbun	Iowa	8,320	1,800,000	0
SWD	Little Rock	Smithville	Missouri	75,700	14,873,000	0
	Tulsa [1]	DeQueen	Arkansas	17,275	4,942,400	186,900
		Birch	Oklahoma	7,630	2,209,000	0
		Broken Bow		144,145	3,827,000	108,100
		Copan		2,500	2,686,900	24,700
		Eufaula [2]		29,932	2,341,600	10,400
		Ft. Supply		400	38,800	0
		Hugo		2,197	126,000	0
		Kaw		80,217	18,428,500	0
		Keystone		2,000	175,200	28,300
		Oologah		9,365	302,800	0
		Pat Mayse		0	0	10,000
		Pine Creek		20,600	1,942,000	148,000
		Skiatook [2]		40,409	11,275,500	0
		Tenkiller Ferry [2]		4,884	763,400	0
		Waurika		109,600	8,042,000	0
		Wister		347	199,700	0
<b>Total 4 Divisions</b>	<b>6 Districts</b>	<b>23 Projects</b>	<b>7 States</b>	<b>747,554</b>	<b>90,929,600</b>	<b>517,700</b>

Footnotes:

[1] Does not include the Optima project. This project was designed for 76,200 acre-feet of M&I water supply storage. However, due to changed conditions, Optima has never filled. The project has no storage or yield.

[2] Tulsa District contracts currently under negotiation.

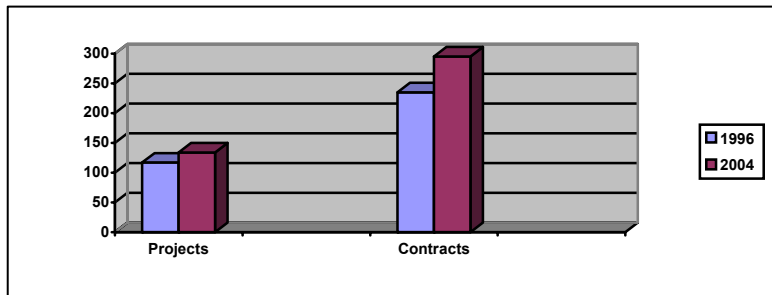
<u>Project</u>	<u># Contracts</u>	<u>Storage (acre-feet)</u>	<u>Cost (\$)</u>
Eufaula	1	25,000	4,600,600
Skiatook	2	15,750	4,700,300
Tenkiller	2	4,884	763,400
Totals	5 Contracts	45,634 (acre-feet)	\$10,064,300

6. Comparison to 1996 Data. Similar storage and cost data developed in 1996 are provided in **Table 5**. Some divisions reported an increase in storage space and others a decrease with an overall increase of 331,262 acre-feet or 3.5 %. The value of storage under contract had a more pronounced change with an increase of \$143,697 or 10.8 %. This variance may have been due to the large number of reallocations that normally charge the updated cost of storage. Visual comparison of some of the changes between the two surveys are provided in **Figures 1, 2 and 3**.

**Table 5: M&I Water Supply Storage Database Summary by Division  
(1996 Survey)**

Division Project/Contract	Storage (acre-feet)			Contract Price (\$000)			
	Present Use	Future Use	Total	Present Use	Future Use	Conduit	Total
NAD: 7/8	138,450	4,000	142,450	127,133	7,500	0	134,633
SAD: 10/19	120,626	96,740	217,366	107,984	9,586	219	117,789
LRD: 17/18	577,940	53,469	631,409	54,393	15,996	68	70,457
MVD: 6/4	181,900	187,750	369,650	22,757	18,904	0	41,661
NWD: 12/15	184,360	622,880	807,240	25,032	86,623	2,696	114,351
SWD: 63/168	4,873,217	2,012,399	6,885,616	319,667	394,484	35,591	749,742
SPD: 2/3	258,900	212,000	470,900	8,290	96,625	0	104,915
<b>Total: 117/235</b>	<b>6,335,393</b>	<b>3,189,238</b>	<b>9,524,631</b>	<b>665,256</b>	<b>629,718</b>	<b>38,574</b>	<b>1,333,548</b>

**Figure 1: 1996-2004 Comparison of Projects and Contracts**



**Figure 2: 1996-2004 Comparison of Storage Space (acre-feet)**

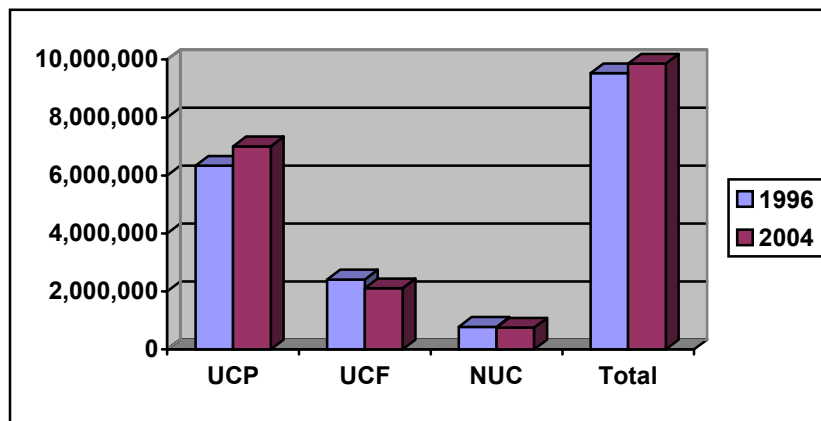
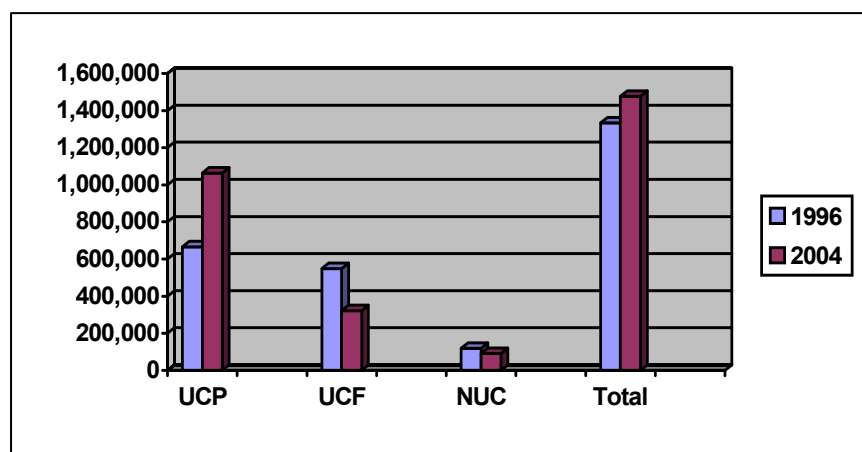


Figure 3: 1996-2004 Comparison of Costs (\$000)



Legend for Figures 2 and 3:

UCP = Under Contract Present Use

UCF = Under Contract Future Use

NUC = Not Under Contract

7. Reallocations. The national summary of our reallocations, summarized by district is shown in **Table 6**. A breakout by district, project and contract is shown in **Appendix E**. As shown in the

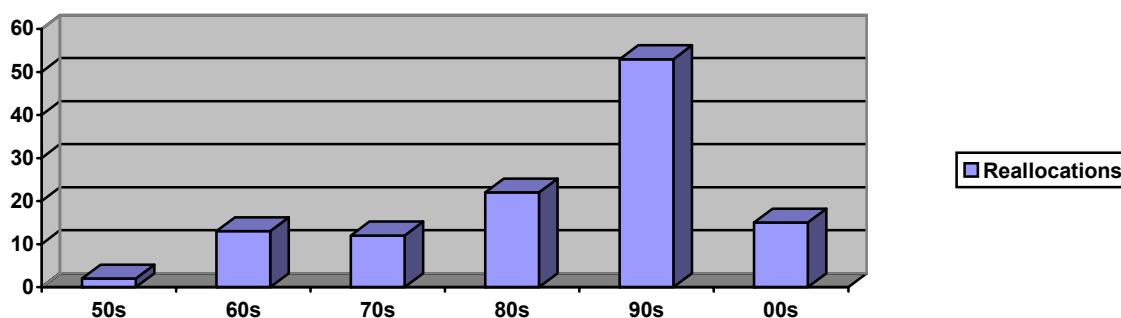
Table 6: Reallocations

Division	District	Projects (Number)	Contracts (Number)	Years Reallocated (Between)	Storage Space Reallocated (acre feet)	Contract Price (\$)
NAD	New England	1	1	1962	1,140	24,500
	Baltimore	2	2	1990 - 1997	29,695	44,292,000
SAD	Wilmington	1	3	1984 - 1991	10,823	2,431,565
	Savannah	3	13	1964 - 2001	31,279	6,341,900
	Mobile	2	4	1963 - 1991	20,329	2,273,621
LRD	Nashville	2	9	2003 - 2004	19,521	10,660,416
	Louisville	5	8	1965 - 2003	6,269	210,230
	Huntington	2	2	1977 - 2001	2,593	3,641,700
MVD	Rock Island	1	1	1982	14,900	4,811,600
	Vicksburg	2	2	1996 - 1998	6,075	1,224,757
NWD	Omaha	1	1	1981	19,780	825,000
	Kansas City	7	7	1985 - 2002	211,000	29,565,500
SWD	Little Rock	7	16	1959 - 1998	33,836	3,984,900
	Ft. Worth	4	4	1975-1982	554,526	55,390,000
	Tulsa	7	44	1953 - 2004	214,759	25,263,400
<b>6 Divisions</b>	<b>15 Districts</b>	<b>47</b>	<b>117</b>	<b>1953 &amp; 2004</b>	<b>1,176,525</b>	<b>190,941,089</b>

table, between 1953 and 2004 we have signed 117 contracts for over 1.17 million acre-feet of storage space with a repayment value of about \$191 million. These numbers represent 40% of our contracts, 12% of the storage space and 12 % of the water supply investment. Our water supply reallocation activity has covered a period of 50-years, it has, however, become more

prevalent since the mid-1980s after enactment of the Water Resources Development Act of 1986 and the policies that have emanated from that Act. The progression by decade of the contracts signed as a result of reallocations is shown in **Figure 4**.

**Figure 4: History of Agreements Signed as a Result of Reallocations**



Reallocations come from various pools within the reservoir. This breakout by the reallocated purpose and the corresponding storage space is shown in **Table 7**. Authority to reallocate storage

**Table 7: Purpose Reallocated**

Purpose Reallocated	Contracts Signed	Storage Reallocated
Hydropower	35	217,707
Flood Control	49	95,709
Water Quality	7	125,125
Conservation	6	35,505
Multipurpose	2	69,780
Conservation/hydropower	4	20,329
Flood Control/hydropower	1	1,575
Water Quality/Navigation	1	50,000
Not Available	12	560,795
<b>TOTAL</b>	<b>117</b>	<b>1,176,525</b>

can originate in specific Congressional authorization or under the general authority of the 1958 Water Supply Act. One unique situation of reallocation under the 1958 Act was an agreement reached between the Department of the Army and the State of Kansas. This unique arrangement resulted in 7-contracts for 173,000 acre-feet of storage space. This storage is included in the above table for 6 of the 7 “water quality” actions and the one “water quality/navigation” action.

8. Studies Underway. The 2004 survey also requested the number and type of studies underway. The districts listed a total of 33 studies. A summary of these studies by source of funding and cost are summarized in **Table 8**. A more detailed description of the studies is provided in **Appendix F**. Considerable footnotes are provided with Appendix E that further defines many of these studies and some of the problems encountered by the districts.

**Table 8: Funding of Water Supply Studies Currently Underway**

Div.	Dist	Operation & Maintenance		General Investigation		Congressional Add		Other	
		#	\$	#	\$	#	\$	#	\$
SAD	Wilmington	1	150,000						
	Savannah			2	4,500,000 [1]				
	Mobile							1	100,000
LRD	Pittsburgh			1	400,000				
	Nashville	5	920,000						
	Huntington	3	100,000 [2]						
MVD	St. Louis							2	521,000
	Vicksburg	2	210,000						
NWD	Portland			1	2,900,000				
	Kansas City	2	215,000						
SWD	Little Rock	6	240,000			1	100,000	1	20,000
	Ft. Worth			2	11,500,000				
	Tulsa					3	2,650,000		
<b>5</b>	<b>13</b>	<b>19</b>	<b>1,835,000</b>	<b>6</b>	<b>19,300,000</b>	<b>4</b>	<b>2,750,000</b>	<b>4</b>	<b>641,000</b>

Footnotes:

[1] Cost of one study not available at this time.

[2] Cost of two studies not available at this time.

9. Revenues Received Versus Costs of Collection. All revenues received from the sponsors for M&I water supply are deposited into the U.S. Treasury. This requirement dates back to Section 6 of the 1944 Flood Control Act (33 U.S.C. § 708) (58 Stat. 890). Revenues are comprised of the repayment of investment costs, interest and late payment, and yearly operation, maintenance, repair, replacement and rehabilitation (OMRR&R) costs. These latter costs can vary significantly from one year to another. For this data update the districts were requested to just provide the most recent year available. The repayment of investment costs also vary; in some instances, the sponsor may have repaid in full at the start of or during construction and in other cases these costs may be repaid over a period of up to 50-years. Of course it takes the districts some time and manpower to determine the yearly costs, to bill that cost, collect it and deposit it into the U. S. Treasury. A summary of the revenues received and costs of collection is provided as **Table 9**. The details are provided in **Appendix G**.

**Table 9: Revenues Received Versus Costs of Collection**

Division	Total Storage Available (acre-feet) [1]	Annual Revenues Collected (\$)			Annual Collection Costs (\$)	Total P&I Has Already Been Collected (\$) [2]
		P&I	OMRR&R + Other	Total		
NAD	147,810	4,195,711	1,816,812	6,012,523	2,130	7,763,534
SAD	221,000	989,350	594,552	1,583,902	31,280	6,254,194
LRD [3]	492,690	487,117	343,720	830,837	125,725	29,950,998
MVD	375,131	424,464	289,874	714,338	411	18,046,005
NWD	953,080	954,436	836,696	1,791,132	18,320	6,538,065
SWD	7,075,616	6,445,223	5,598,414	12,043,637	1,070,950	102,057,091
SPD	482,900	3,255,165	562,876	3,818,041	4,250	5,600,000
<b>TOTAL</b>	<b>9,748,227</b>	<b>16,751,466</b>	<b>10,042,944</b>	<b>26,794,410</b>	<b>1,253,066</b>	<b>176,209,887</b>

For footnotes see next page.

Footnotes:

[1] Includes storage under contract for present and future use as well as storage not yet under contract.

[2] In many cases the principle was repaid prior to or during construction. In other cases, the principle has already been repaid over a period of years and there is no more “annual P&I” being collected.

[3] Does not include the Huntington District, as the data are not available.

10. Local Sponsors. Corps water supply agreements are with a variety of local sponsors: states (including commonwealths and river basin commissions), counties, cities, industry, private individuals, Federal/Interstate Commissions, Indian Tribes and corporations. A summary of the M&I storage distribution by local sponsor is provided as **Table 10**. More detail on the distribution is provided in **Appendix H**. The number of agreements includes four agreements with state sponsors in the Tulsa District just for water supply conduits. As shown, the vast majority of our agreements and storage space are with states and cities.

**Table 10: Storage Distribution by Non-Federal Sponsor**

Type of Sponsor	Agreements		Storage Space	
	Number	Percent	Acre-feet	Percent
State	68	23	4,636,422	50.9
County	54	18	803,019	8.8
City	98	33	3,156,918	34.7
Industry	31	11	287,139	3.2
Private	34	12	20,030	0.2
Other	10	3	204,811	2.2
<b>TOTAL</b>	<b>295</b>	<b>100.0</b>	<b>9,108,339</b>	<b>100.0</b>

11. People Served. The Corps sells storage space and not water. Under normal circumstances a local sponsor will request a certain yield in perhaps million gallons of water per day and then the Corps computes the required acre-feet of storage based on a certain dependability. It has always been a desire to arrive at the number of people Corps projects provides with M&I water. That of course is impossible because, as noted above, we supply storage to a wide variety of local interests and exactly how these entities parcel out the water cannot be ascertained. This 2004 request for data, however, attempted to arrive at an estimate of the number of people that Corps projects could possibly serve. It takes nearly 1,200 gallons of water per person per day to meet the needs of farmers, factories, electrical utilities and the many other organizations that make it possible for us to have food on our table and power for our home. This differs from what the typical household uses in water per day, which runs from 50 to 85 gallons, or an average of 67.5 gallons. Based on the various project yields as provided in **Appendix I**, **Table 11** presents an approximation of personal and household needs that could be met by Corps projects in 2004. Table 11 shows Corps M&I water supply contracts for present use storage are theoretically capable of meeting the personal needs of about 2.8 million people and 47.8 million households.

Table 11: Summary of Personal and Household Needs Met

District	Storage Space in Present Use (acre-feet)	Yield (MGD)	Number of Personal Needs Met	Number of Households
<b>North Atlantic Division</b>				
New England	41,240	36.8	30,684	521,628
Philadelphia	31,880	49.7	41,417	704,089
Baltimore	70,690	171.8	143,167	2,433,839
<b>Total</b>	<b>143,810</b>	<b>258.3</b>	<b>215,268</b>	<b>3,659,556</b>
<b>South Atlantic Division</b>				
Wilmington	131,092	225.0	187,500	3,187,500
Savannah	18,359	47.4	39,499	671,483
Jacksonville	25,200	21.9	18,250	310,250
Mobile	33,429	78.3	65,217	1,108,689
<b>Total</b>	<b>208,080</b>	<b>372.6</b>	<b>310,466</b>	<b>5,277,922</b>
<b>Lakes and River Division</b>				
Pittsburgh	11,000	16.0	19,200	326,400
Huntington	38,766	46.0	38,350	651,950
Louisville	459,969	392.5	327,082	5,560,394
Nashville	19,521	66.6	55,500	943,500
<b>Total</b>	<b>529,256</b>	<b>521.1</b>	<b>440,132</b>	<b>7,482,244</b>
<b>Mississippi Valley Division</b>				
Rock Island	14,900	48.5	40,392	686,664
St. Louis	172,656	62.8	52,334	889,678
Vicksburg	10,008	14.4	11,999	203,983
<b>Total</b>	<b>197,564</b>	<b>125.7</b>	<b>104,725</b>	<b>1,780,325</b>
<b>Northwestern Division</b>				
Portland	3,708	3.3	2,758	46,886
Omaha	19,780	17.6	14,650	249,040
Kansas City	383,426	171.9	143,243	2,435,131
<b>Total</b>	<b>406,914</b>	<b>192.8</b>	<b>160,651</b>	<b>2,731,057</b>
<b>Southwestern Division</b>				
Little Rock	158,768	212.6	177,178	3,012,026
Ft. Worth	3,644,943	815.2	679,757	11,555,869
Tulsa	1,230,444	542.1	451,783	7,680,311
<b>Total</b>	<b>5,034,155</b>	<b>1,569.9</b>	<b>1,308,718</b>	<b>22,248,206</b>
<b>South Pacific Division</b>				
Sacramento	30,000	26.7	22,208	377,536
San Francisco	282,000	251.8	212,916	3,619,572
Albuquerque	170,900	43.0	35,853	609,501
<b>Total</b>	<b>482,900</b>	<b>321.5</b>	<b>270,977</b>	<b>4,606,609</b>
<b>National Total</b>	<b>7,002,679</b>	<b>3,361.9</b>	<b>2,810,937</b>	<b>47,785,919</b>

12. Percent of National Needs Met. As shown in Table 11, M&I storage space in Corps projects provides approximately 3.362 billions gallons of water per day. The United States Geologic Survey estimated total offstream withdrawals of 408 billion gallons per day of water for the year 2000 (<http://water.usgs.gov/watuse/>). Of these 408 billion gallons per day, 76 are for M&I use,

137 for irrigation and 195 for thermoelectric. Based on this estimate, Corps present use contracts are capable of providing about 4.4 percent of the nations offstream M&I water needs.

13. New M&I Projects. Since the passage of the 1986 Water Resources Development Act, there has been only one project that follows the legislative and policy aspects of this act that includes storage for M&I water supply, the Little Dell project in Salt Lake City, Utah. This project has been turned over to the local sponsor for operation and maintenance and is not included in this database. There have, however, been a number of reallocations and project modifications and several others that are underway and under study. These actions, to the extent reported, are included in the database.



## B. AGRICULTURAL WATER SUPPLY

1. Introduction. Corps lakes in the 17 contiguous Western States in which Reclamation Law applies may include irrigation as a project purpose upon the recommendation of the Secretary of the Interior (Section 8 of Public Law 78-534, the 1944 Flood Control Act). Agricultural water supply is included in Corps reservoir projects in the Western states under repayment agreements between the Bureau of Reclamation and the local sponsors. To date, there are no agricultural water supply agreements in Corps reservoir projects in the Eastern states, although “irrigation” can be an authorized project purpose such as in the Central and Southern Florida Flood Control Project.

2. Irrigation Storage in Completed Corps Projects. Planning Division, Headquarters USACE, originally compiled data for Corps irrigation projects in a 1982 survey in response to a query from the U.S. Senate. These data, updated in 1996 are contained in the *Water Supply Handbook*, IWR Report 96-PS-6, dated December 1998. This report can be found on line at: <http://www.iwr.usace.army.mil/iwr/pdf/96ps4.pdf>. The memorandum dated 6 May 2004, by the Chief of the Programs, Directorate of Civil Works (Appendix A), also called for an update of this 1996 irrigation data. The new data are summarized in **Table 12**. This information shows there are 48 completed projects that include agricultural water supply in some form. Thirty-seven of the projects include storage for “joint” and/or “specific” use. The remaining 10 projects are utilized for irrigation purposes, but contain no storage. The specific information, by project is contained in **Appendix J**. This appendix should be reviewed to obtain project specific data and clarifying footnotes. The joint storage, listed as approximately 56 million acre-feet, can normally be used for flood control, navigation, recreation and/or hydroelectric power as well as for irrigation purposes. The total Federal cost allocated to the irrigation purpose, less the reimbursable cost, is listed as about \$1.7 billion.

**Table 12: Summary of Irrigation Data (2004)**

Division	Number of Projects	Total Project Cost (\$1000)	Total Federal Cost to Irrigation [1] (\$1000)	Storage Reserved for Irrigation	
				Joint (1000AF)	Specific (1000 AF)
Northwestern	30	3,563,099	1,159,697	50,496	NA
Southwestern	2	85,500	42,100	0	64
South Pacific	16	868,070	525,039	5,490	577
<b>TOTAL</b>	<b>48</b>	<b>4,516,669</b>	<b>1,726,836</b>	<b>55,986</b>	<b>NA</b>

Footnote: [1] Total cost less reimbursables.

3. Comparison to 1996 Data. Similar storage and cost data developed in 1996 are provided in **Table 13**. As can be seen there is very little difference in the data. Two projects have been deleted, costs and storage have been adjusted to a minor extent, several of the footnotes have been modified and additional footnotes have been added.

**Table 13: Summary of Irrigation Data (1996)**

Division	Number of Projects	Total Project Cost (\$1000)	Total Federal Cost to Irrigation [1] (\$1000)	Storage Reserved for Irrigation	
				Joint (1000AF)	Specific (1000 AF)
Northwestern	31	3,581,937	1,164,318	50,348	NA
Southwestern	2	85,500	42,100	0	64
South Pacific	17	822,670	506,319	5,677	597
<b>TOTAL</b>	<b>50</b>	<b>4,490,107</b>	<b>1,712,737</b>	<b>56,025</b>	<b>NA</b>

Footnote: [1] Total cost less reimbursables.

4. New Irrigation Projects. According to the best available information, there are no projects currently under planning or construction with irrigation as a purpose.

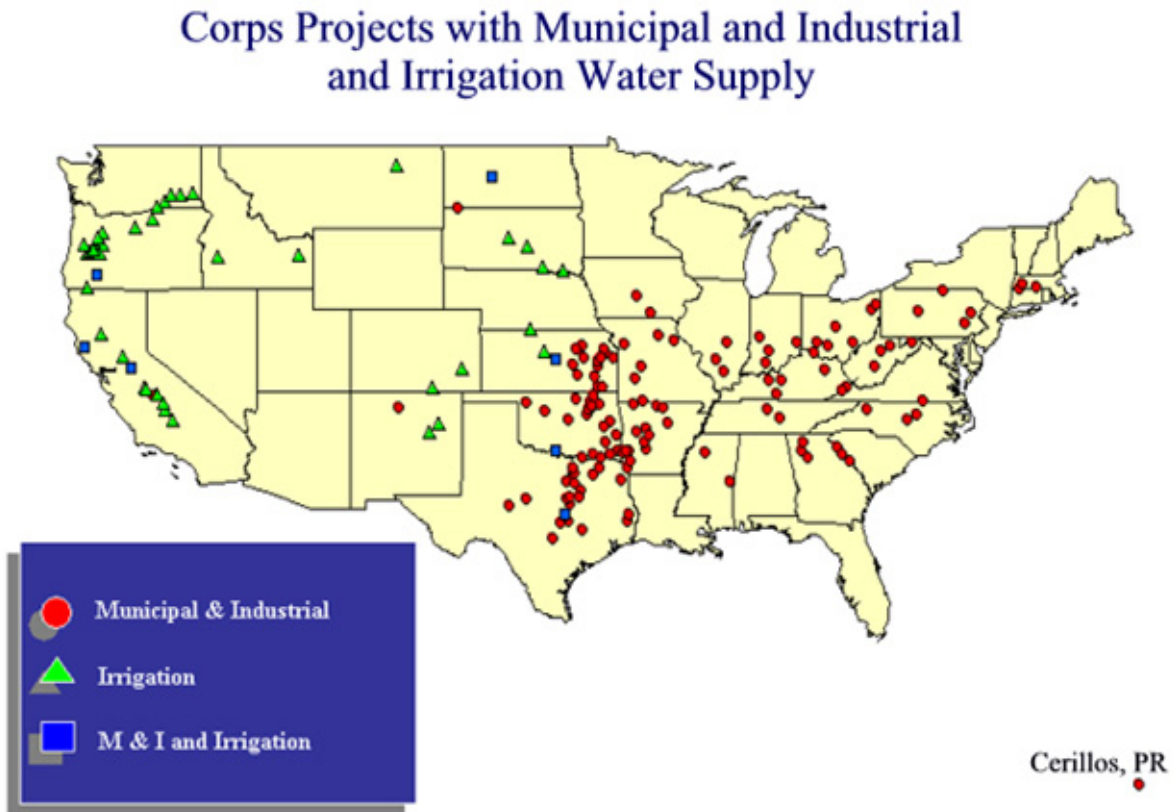
## C. MAP

A user-friendly and interactive map of the water supply and irrigation projects is being developed and will be posted on the Institute of Water Resources “Reports” web page. When complete, the map at **Figure 5** can be obtained. By “clicking” on any one of the projects, the following information can be obtained:

- State
- Project name
- Corps district
- Number of contracts
- Storage space under contract and not under contract
- Cost of the storage space under contract and not under contract
- Project Yield

Since the projects in Kansas, Oklahoma, Arkansas, Texas and California are so close together, clicking any where in the state will present a larger picture that will assist in the location of the project.

**Figure 5: Map**



An earlier version of this map can be found at:

<http://www.iwr.usace.army.mil/iwr/pdf/corpswatermap.xls>

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# Appendix A: Memorandum to MSCs and Districts

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CECW-P/I

06 MAY 2004

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Collection of Water Supply Data

1. Municipal and Industrial (M&I) water supply has been established as one of eight business lines for Corps' budgeting purposes. In order to manage this business line properly it is necessary to update certain data and develop new data that can be used to assess business line performance. Data submitted are to reflect conditions as of 30 April 2004. To emphasize the importance of this request, funds will be made available to the Major Subordinate Commands (MSC) as identified in Enclosure 1. Each MSC must provide the name, office symbol, and phone number of the technical and financial points of contact for your division to receive the designated funds (see following paragraph 5 for the Institute for Water Resources (IWR) Point of Contact).
2. The existing data in the form of Excel spreadsheets for each of the districts in your division are provided as Enclosure 2. This data generally reflects 1996 conditions. Check for accuracy of this existing data. Mark these sheets up as needed and return to IWR. For new projects and/or new agreements, complete the Excel table provided by Enclosure 3.
3. Additional new data are also requested. Enclosure 4 requests data on M&I water supply projects, agreements and studies and Enclosure 5 requests information on water supply costs incurred and revenues collected. Provide a separate page for each project.
4. For the three divisions in the Western United States with irrigation projects, Enclosure 6 is the data currently available. Please review for accuracy. Mark these sheets up as needed and return to IWR. Also, include any additional general information, comments or data you would care to provide concerning the project, agreements, studies underway, etc.
5. Request you provide your response by 15 June 2004 to the Institute for Water Resources, 7701 Telegraph Rd., Casey Building, Alexandria, VA 22315-3868, ATTN: CEIWR-PD Ted Hillyer. Mr. Hillyer can also be reached by phone at 703/428-6140, fax at 703/428-6124 and by e-mail to: [Theodore.M.Hillyer@USACE.ARMY.MIL](mailto:Theodore.M.Hillyer@USACE.ARMY.MIL).

FOR THE COMMANDER:

Encls

/s/  
ROBERT F. VINING  
Chief of Programs Management Division  
Directorate of Civil Works

DISTRIBUTION (See Page 2)

DISTRIBUTION:

MSC Civil Works Chiefs  
LAKES AND OHIO RIVER DIVISION  
MISSISSIPPI VALLEY DIVISION  
NORTH ATLANTIC DIVISION  
NORTHWESTERN DIVISION  
PACIFIC OCEAN DIVISION  
SOUTH ATLANTIC DIVISION  
SOUTH PACIFIC DIVISION  
SOUTHWESTERN DIVISION

CF:

DISTRICTS Chief of PLANNING  
BUFFALO DISTRICT  
CHICAGO DISTRICT  
DETROIT DISTRICT  
HUNTINGTON DISTRICT  
LOUISVILLE DISTRICT  
NASHVILLE DISTRICT  
PITTSBURGH DISTRICT  
ST. LOUIS DISTRICT  
MEMPHIS DISTRICT  
NEW ORLEANS DISTRICT  
VICKSBURG DISTRICT  
ROCK ISLAND DISTRICT  
ST. PAUL DISTRICT  
BALTIMORE DISTRICT  
NEW ENGLAND DISTRICT  
NEW YORK DISTRICT  
NORFOLK DISTRICT  
PHILADELPHIA DISTRICT  
PORTLAND DISTRICT  
SEATTLE DISTRICT  
WALLA WALLA DISTRICT  
OMAHA DISTRICT  
KANSAS CITY DISTRICT  
ALASKA DISTRICT  
HONOLULU DISTRICT  
CHARLESTON DISTRICT  
JACKSONVILLE DISTRICT  
MOBILE DISTRICT  
SAVANNAH DISTRICT  
WILMINGTON DISTRICT  
LOS ANGELES DISTRICT  
SACRAMENTO DISTRICT  
SAN FRANCISCO DISTRICT  
ALBUQUERQUE DISTRICT  
FORT WORTH DISTRICT  
TULSA DISTRICT  
GALVESTON DISTRICT  
LITTLE ROCK

CF: DIRECTOR INSTITUTE FOR WATER RESOURCES (CEIWR-PD)

## Appendix B: Field Personnel with Known Input to Water Supply Data Update

Division	District	Name	Office Symbol
NAD		* William Sutyak	CENAD-CM-CW
		Ralph LaMoglia (Division Prime)	CENAD-MT-EC-W
		Peter Doukas	CENAD-CM-PP
	New England	William Scully	CENAE-DO-PM
SAD		* Terry Stratton	CESAD-CM-D
		Wilbert Paynes	CESAD-CM-P
	Wilmington	G. Allen Piner	CESAW-TS-EC
	Savannah	Duane Bailey (Division Prime)	CESAS-PD-PS
	Jacksonville	Eric Raasch	CESAJ-PD-D
	Mobile	John Graham	CESAM-PD-FA
		Roger Burke	CESAM-PD-F
LRD		* Ron Wilson	CELRD-CM-C
		Morley Hofer	CELRD-CM-C
	Pittsburgh	Bill Frechione	CELRP-PM-P
	Louisville	Ellen Waggoner	CELRL-PM-P
		Linda McEvoy	CELRL-RM-F
	Huntington	Clyde Campbell	CELRH-PM-PD-F
	Nashville	James Deal	CELRN-ED-H
		Bill Barron	CELRN-PM-MP
Parvathi Gaddipati		CELRN-EC-H	
MVD		* Philip Kuhn (Division Prime)	CEMVD-PD-KM
	Rock Island	Michael O'Keefe	CEMVR-OD-Q
	St. Louis	Kevin Curran	CEMVS-CO-B
	Vicksburg	Gary Walker	CEMVK-PP-D
		Billye Barfield	CEMVK-PD-D
NWD		* Jim Fredericks	CENWD-CM-P
	Seattle	Mike Padilla	CENWS-PM-CP
	Portland	Arthur Armour	CENWP-EC-HR
	Walla Walla	Diane Karnich	CENWW-PM-PD-PF
	Omaha	Ralph Roza	CENWO-PM-A
		Gene Sturm	CENWO-PM-AE
	Kansas City	John Turner	CENWK-PM-PF
SWD		* Ray Russo	CESWD-PD-C
	Little Rock	Jonathan Long	CESWL-PR-P
	Ft. Worth	Stephen Brooks	CESWF-PPM-C
		Brent Hyden	CESWF-PM-C
		Valerie Hall	CESWD-PM-C
	Tulsa	Janet Hotubbee	CESWT-PE-P
SPD		* Henri Langlois	CESPD-RB-T
		Ahsan Syed (Division Prime)	CESPD-MT-ET
	Sacramento	James Sandner	CESPK-CO-OR
	San Francisco	Carlos Hernandez	CESPN-OR-0-FM
		Terry Marks	CESPN-ET-EW
		S. T. Su	CESPN-ET-EW
	Los Angeles	Brian Tracy	CESPL-ED-HR
POD		* Helen Stuppelbeen	CEPOD-PDI

\* Division water supply business line manager

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# Appendix C: Storage Space and Costs by District and Project

## North Atlantic Division

Dist	Project	User	Storage Space (acre-feet)			Contract Price (\$000)			
			Present Use	Future Use	Total Contract	Present Storage	Future Storage	Not Under Contract	Total Contract
NAE	Colebrook, CT	Hartford, CT Metro Water Dist.	30,700	0	30,700	5,281.2	0	0	5,281.2
	East Brimfield, CT	American Optical Company	1,140	0	1,140	24.5	0	0	24.5
	Littleville Lake, MA	City of Springfield, MA	9,400	0	9,400	2,202.2	0	0	2,202.2
<b>Total</b>	<b>3 projects</b>	<b>3 contracts</b>	<b>41,240</b>	<b>0</b>	<b>41,240</b>	<b>7,507.9</b>	<b>0</b>	<b>0</b>	<b>7,507.9</b>
NAP	Beltzville Lake, PA	Delaware RBC	27,880	0	27,880	6,500	0	0	6,500
	Blue Marsh, PA	Delaware RBC	4,000	4,000	8,000	7,500	7,500	0	15,000
<b>Total</b>	<b>2 projects</b>	<b>2 contracts</b>	<b>31,880</b>	<b>4,000</b>	<b>35,880</b>	<b>14,000</b>	<b>7,500</b>	<b>0</b>	<b>21,500</b>
NAB	Cowanesque, PA	Susquehanna RBC	24,335	0	24,335	39,414	0	0	39,414
	Curwensville, PA	Susquehanna RBC	5,360	0	5,360	4,878	0	0	4,878
	Jennings Randolph, MD/WV	District of Columbia, Washington Suburban Sanitary Commission and Fairfax County Water Auth	7,158	0	7,158	11,360	0	0	11,360
		District of Columbia, Washington Suburban Sanitary Commission, Fairfax County Water Auth. and the transfer of the MD Potomac Water Auth., 1970 agreement.	33,837	0	33,837	54,179	0	0	54,179
<b>Total</b>	<b>3 projects</b>	<b>4 contracts</b>	<b>70,690</b>	<b>0</b>	<b>70,690</b>	<b>109,831</b>	<b>0</b>	<b>0</b>	<b>109,831</b>
<b>Div Total</b>	<b>8 projects</b>	<b>9 contracts</b>	<b>143,810</b>	<b>4,000</b>	<b>147,810</b>	<b>131,338.9</b>	<b>7,500</b>	<b>0</b>	<b>138,838.9</b>

# Water Supply Database 2004 Survey

## South Atlantic Division

Dist	Project	User	Storage Space (acre-feet)			Contract Price (\$000)				
			Present Use	Future Use	Total Contract	Present Storage	Future Storage	Not Under Contract	Total Contract	
SAW	B. Everett Gordan, NC	State of NC	45,800	0	45,800	4,388	0	0	4,388.0	
	Falls Lake, NC	City of Raleigh, NC	41,469	0	41,469	12,170	0	0	12,170.0	
	John H. Kerr, VA/NC	City of Henderson, NC [1]		-	-	-	-	-	-	-
		Virginia Beach, VA		10,200	0	10,200	2,275.7	0	0	2,275.7
		VA Dept. of Corrections		23	0	23	5.6	0	0	5.6
		Mecklenburg Cogeneration		600	0	600	150.2	0	0	150.2
	W. Kerr Scott, NC	County of Wilkes, NC & City of Winston-Salem, NC	33,000	0	33,000	945.4	0	0	945.4	
Total	4 projects	7 contracts	131,092	0	131,092	19,934.9	0	0	19,934.9	
SAS	Hartwell, GA & SC	Anderson County Joint Municipal Water System, SC	11,700	12,920	24,620	1,437	1,588	0	3,025	
		City of Lavonia, GA	127	0	127	21.5	0	0	21.5	
		Hart County, GA	1,827	0	1,827	335.2	0	0	335.2	
	Richard B. Russell, GA & SC	City of Elberton, GA	381	0	381	419	0	0	419	
		SC Public Service Co. (Santee Cooper), SC	491	0	491	1,615.2	0	0	1,615.2	
	J. Strom Thurmond, GA & SC	City of Lincolnnton, GA	92	0	92	12	0	0	12	
		City of McCormick, SC	506	0	506	75	0	0	75	
		Savannah Valley Auth., SC	92	0	92	27.4	0	0	27.4	
		Columbia County, SC	1,056	0	1,056	313	0	0	313	
		City of Thompson, McDuffie County, GA	1,056	0	1,056	334.7	0	0	334.7	
		City of Lincolnnton, GA	83	0	83	24.6	0	0	24.6	
		City of McCormick, SC	316	0	316	66.5	0	0	66.5	
City of Washington, GA	632	0	632	72.8	0	0	72.8			
Total	3 projects	13 contracts	18,359	12,920	31,279	4,753.9	1,588	0	6,341.9	
SAJ	Cerrillos, PR	Commonwealth of Puerto Rico [2]	25,200	0	25,200	214,980	0	0	214,980	
Total	1 project	1 contract	25,200	0	25,200	214,980	0	0	214,980	
SAM	Allatoona, GA	Cobb Co. - Marietta Water Authority	13,140	0	13,140	1,268.4	0	0	1,268.4	
		City of Cartersville	1,996	0	1,996	177 + 219 Conduit	0	0	177 + 219 conduit	
		City of Cartersville [2]	4,375	0	4,375	1,655.7	0	0	1,655.7	
	Carters, GA	City of Chatsworth	818	0	818	609.2	0	0	609.2	
	Okatibbee, MS	Pat Harrison WW District	13,100	0	13,100	1,292	0	0	1,292	
Total	3 Projects	5 Contracts	33,429	0	33,429	5,002.3 + 219 conduit	0	0	5,002.3 + 219 conduit	
DIV Total	11 Projects	26 Contracts	208,080	12,920	221,000	244,671 + 219 conduit	1,588	0	246,259 + 219 conduit	

### Footnotes:

[1] Wilmington District: Contract with the City of Henderson in the John H. Kerr project is a water use contract, not storage.

[2] Jacksonville District: Cerrillos project, determination of correct investment cost is being evaluated pursuant to a congressional directive.

## Appendix C: Storage Space and Costs by District and Project

### Lakes and River Division

Dist	Project	User	Storage Space (acre-feet)			Contract Price (\$000)			
			Present Use	Future Use	Total Contract	Present Storage	Future Storage	Not Under Contract	Total Contract
LRP	Berlin, OH [1]	<b>Not Under Contract</b>	0	19,400	19,400	0	0	1,365.0 + 1.3 conduit	1,365.0 + 1.3 conduit
	Michael J. Kirwan, OH [2]	<b>No authorized storage</b>	-	-	-	-	-	-	-
	Mosquito Creek Lake, OH [3]	City of Warren, OH	11,000	0	11,000	569.2	0	0	569.2
	Stonewall Jackson Lake, WV	<b>Not Under Contract</b>		2,200	2,200	0	0	4,300	4,300
	Tygart, WV [4]	City of Grafton, WV	Withdrawal of up to 1.9 mgd			No cost. City provided lands for project.			
<b>Total</b>	<b>4 Projects</b>	<b>2 contract</b>	<b>11,000</b>	<b>21,600</b>	<b>32,600</b>	<b>569.2</b>	<b>0</b>	<b>5,665.0 + 1.3 conduit</b>	<b>6,234.2 + 1.3 conduit</b>
LRH	Alum Creek, OH	State of Ohio	29,700	49,500	79,200	6,847.5	11,412.6	0	18,260.1
	John W. Flannagan, VA	John W. Flannagan Water Auth.	2,125	0	2,125	3,407.7	0	0	3,407.7
	North Fork of Pound, VA	Town of Pound	62	0	62	37.9	0	0	37.9
	Tom Jenkins, OH	State of Ohio	5,690	0	5,690	785.0	0	0	785.0
	Paint Creek, OH	Highland County Water Co.	721	0	721	189.7	0	0	189.7
	Summersville, WV	City of Summerville	468	0	468	234.0	0	0	234.0
<b>Total</b>	<b>6 Projects</b>	<b>6 Contracts</b>	<b>38,766</b>	<b>49,500</b>	<b>88,266</b>	<b>11,501.8</b>	<b>11,412.6</b>	<b>0</b>	<b>22,914.4</b>
LRL	Barren River Lake, KY	Glasgow	681	0	681	22.3	0	0	22.3
		Scottsville	369	0	369	12.2	0	0	12.2
	Brookville, IN	State of Indiana	89,300	0	89,300	7,541	0	0	7,541
	Caesar Creek Lake, OH	State of Ohio	39,100	0	39,100	5,742	0	0	5,742
	Cave Run Lake, KY	Cave Run Water Comm.	536	0	536	0.7	0	0	0.7
	Green River Lake, KY	Campbellsville	3,460	0	3,460	92.1	0	0	92.1
		Columbia	855	0	855	0.9	0	0	0.9
	Monroe Lake, IN	State of Indiana	160,000	0	160,000	8,015	0	0	8,015
	Nolin Lake, KY	Edmonson Co. Water Dist.	98	0	98	0.1	0	0	0.1
	Patoka Lake, IN	State of Indiana	129,800	0	129,800	14,023	0	0	14,023
	Rough River Lake, KY	Leitchfield	120	0	120	3.6	0	0	3.6
		Hardinsburg	150	0	150	78.8	0	0	78.8
	William H. Harsha, OH	State of Ohio	35,500	0	35,500	3,987	0	0	3,987
<b>Total</b>	<b>10 projects</b>	<b>13 contracts</b>	<b>459,969</b>	<b>0</b>	<b>459,969</b>	<b>39,518.7</b>	<b>0</b>	<b>0</b>	<b>39,518.7</b>
LRN	Center Hill, TN	Cookeville, TN	6,680	0	6,680	2,915.0	0	0	2,915.0
		Smithville, TN	401	0	401	54.5	0	0	54.5
		Riverwatch Golf, TN	131	0	131	103.4	0	0	103.4
	J. Percy Priest, TN	LaVergne, TN	2,733	0	2,733	1,818.6	0	0	1,818.6
		Murfreesboro	5,084	0	5,084	3,051.4	0	0	3,051.4
		Consolidated Utility Dist., TN	3,007	0	3,007	1,804.6	0	0	1,804.6
		Consolidated Utility Dist., TN	1,367	0	1,367	820.3	0	0	820.3
		YMCA, TN	22	0	22	16.6	0	0	16.6
		Cedar Crest Golf Ventures, LLC, TN	96	0	96	76.0	0	0	76.0
		(Under negotiation) (1-contract)	5,002	0	5,002	3,002.2	0	0	3,002.2
	Dale Hollow, TN/KY	(Under negotiation) (3-contracts)	2,048	0	2,048	655.0	0	0	655.0
	Laurel, KY	(Under negotiation) (3-contracts)	1,713	0	1,713	1,384.7	0	0	1,384.7
	L. Cumberland – Wolf Creek Dam, KY	(Under negotiation) (10-contracts)	32,190	0	32,190	10,759.5	0	0	10,759.5
	<b>Total</b>	<b>2 reservoirs</b>	<b>9 contracts</b>	<b>19,521</b>	<b>0</b>	<b>19,521</b>	<b>10,660.4</b>	<b>0</b>	<b>0</b>
(+ Under negotiation)	(3 Projects)	(17-contracts)	(40,953)	(0)	(40,953)	(15,801.4)	(0)	(0)	(15,801.4)
<b>Div Total</b>	<b>22 Projects</b>	<b>30 Contracts</b>	<b>529,256</b>	<b>71,100</b>	<b>600,356</b>	<b>62,250.1</b>	<b>11,412.6</b>	<b>5,665.0 + 1.3 conduit</b>	<b>79,327.7 + 1.3 conduit</b>
(+ Under negotiation)	(3 Projects)	(17-contracts)	(40,953)	(0)	(40,953)	(15,801.4)	(0)	(0)	(15,801.4)

See next page for footnotes

## Water Supply Database 2004 Survey

### Footnotes:

[1] Pittsburg District. Berlin, OH. Storage not authorized, but project operated for water supply. A total of 19,400 AF of storage was under contract with the Mahoning Valley Sanitation District until 2001 at which time it expired. Possible renewal of the contract is under investigation. At present the Mahoning Valley Sanitary District neither withdraws water or makes any payments.

[2] Pittsburg District. Michael J. Kirwan, OH. This project does not have any storage allocated specifically for M&I water. Under an October 1961 agreement, Trumbull and Mahoning Counties were allowed to withdraw water from the lakes' low flow regulation storage provided they pay \$5.2 million. The storage amounted to 52,900 acre-feet in the winter and 41,700 acre-feet in the summer. No payments were ever made, so they have no rights of withdrawal.

[3] Pittsburg District. Mosquito Creek, OH. Renewal contract dated 3 May 1999.

[4] Pittsburg District. Tygart Creek, WV. June 1941 is the date a supplement was signed. This was a supplement to a contract number W111Oeng-3572 executed Aug. 1, 1938. The district was unable to locate the 1938 contract. The City of Grafton withdraws an average of 1.9 mgd.

### Mississippi Valley Division

Dist	Project	User	Storage Space (acre-feet)			Contract Price (\$000)			
			Present Use	Future Use	Total Contract	Present Storage	Future Storage	Not Under Contract	Total Contract
MVR	Saylorville, IA	State of Iowa	14,900	0	14,900	4,811.6	0	0	4,811.6
Total	1 Project	1 contract	14,900	0	14,900	4,811.6	0	0	4,811.6
MVS	Carlyle, IL	State of Illinois	32,692	0	32,692	3,635.0	0	0	3,635.0
	Clarence Cannon Dam (Mark Twain Lake), MO	Clarence Cannon Wholesale Water Commission	6,250	13,750	20,000	4,060.0	8,940.0	0	13,000.0
	Lake Shelbyville, IL	State of Illinois	24,714	0	24,714	4,310.0	0	0	4,310.0
	Rend Lake, IL	State of Illinois	109,000	0	109,000	10,000.0	0	0	10,000.0
Total	4 projects	4 contracts	172,656	13,750	186,406	22,005	8,940.0	0	30,945.0
MVK	DeGray, AR	Ouachita River Water District	1,573	0	1,573	52.4	0	0	52.4
		Ouachita River Water District	787	0	787	26.3	0	0	26.3
		Ouachita River Water District	1,573	0	1,573	52.4	0	0	52.4
		<b>Not Under Contract [1]</b>	0	163,817	163,817	0	0	5,460.5	5,460.5
	Enid, MS	LS Power Energy Limited Partnership	4,500	0	4,500	1,111.9	0	0	1,111.9
	Lake Ouachita, AR	N. Garland County Regional Water District	1,575	0	1,575	112.9	0	0	112.9
Total	3 projects	5 contracts	10,008	163,817	173,825	1,355.9	0	5,460.5	6,816.4
Div Total	8 Projects	10 Contracts	197,564	177,567	375,131	28,172.5	8,940.0	5,460.5	42,573.0

Footnote: [1] Vicksburg District: DeGray Lake, the Ouachita River Water District is paying \$154,426 annual interest payment for the right of first refusal.

## Appendix C: Storage Space and Costs by District and Project

### Northwestern Division

Dist	Project	User	Storage Space (acre-feet)			Contract Price (\$000)				
			Present Use	Future Use	Total Contract	Present Storage	Future Storage	Not Under Contract	Conduit	Total Contract
NWS	Howard Hanson	Tacoma Public Utilities	22,400	0	22,400	Project modification underway, to be complete in 2006				
Total	none									
NWP	Lost Creek, OR	City of Phoenix	400	0	400	269.7	0	0	0	269.7
		City of Phoenix	600	0	600	404.5	0	0	0	404.5
		City of Jacksonville	400	0	400	269.7	0	0	0	269.7
		City of Shady Cove	3	0	3	2.0	0	0	0	2.0
		City of Ashland	1,001	0	1,001	928.5	0	0	0	928.5
		City of Talent	1,292	0	1,292	1,199.6	0	0	0	1,199.6
		City of Shady Grove	12	0	12	11.1	0	0	0	11.1
		<b>Not Under Contract</b>		6,292	6,292			5,730.3		5,730.3
Total	1 project	7 contracts	3,708	6,292	10,000	3,085.1	0	5,730.3	0	8,815.4
NWO	Bowman Haley, ND	Bowman County Water Management Dist.	19,780	0	19,780	825.0	0	0	0	825.0
	Garrison, ND	Basin Electric Power Cooperative	No storage, surplus water contract with a guaranteed withdrawal of 17,000 AF/year. Contract currently under litigation.							
Total	2 projects	2 contracts	19,780	0	19,780	825.0	0	0	0	825.0
NWK	Clinton, Lake, KS	State of Kansas	53,520	35,680	89,200	3,873.4	2,580.3	0	312.4	6,766.1
	Harry S. Truman Dam & Reservoir, MO	Henry County #3	172	0	172	50.0	0	0	0	50.0
		HST PWSD #2	504	0	504	153.0	0	0	0	153.0
		<b>Not Under Contract</b>		324	324			100.0	0	100.0
	Hillsdale, Lake, KS	State of Kansas	7,500	45,500	53,000	3,314.2	20,107.5	0	0	23,421.7
	Kanopolis Lake, KS	Kansas Water Office	12,500	0	12,500	4,181.2	0	0	0	4,181.2
	Long Branch Lake, MO	City of Macon	4,400	20,000	24,400	1,118.3	5,082.9	0	0	6,201.2
	Melvorn Lake, KS	Kansas Water Office	50,000	0	50,000	7,131.8	0	0	0	7,131.8
	Milford Lake, KS	State of Kansas	101,650	198,350	300,000	4,420.3	8,625.3	0	0	13,045.6
	Perry Lake, KS	State of Kansas	25,000	125,000	150,000	1,534.7	7,673.6	0	0	9,208.3
	Pomona Lake, KS	RWD #3	230	0	230	13.4	0	0	0	13.4
		RWD #3	270	0	270	20.1	0	0	0	20.1
		Kansas Water Office	32,500	0	32,500	3,593.1	0	0	0	3,593.1
	Rathbun Lake, IA	Rathbun Regional Water Association, Inc. (RRWA)	3,340	0	3,340	331.0	0	0	0	331.0
		RRWA	3,340	0	3,340	498.0	0	0	0	498.0
		<b>Not Under Contract</b>		8,320	8,320			1,800.0	0	1,800.0
	Smithville Lake, MO	City of Plattsburg	11,500	0	11,500	2,254.0	0	0	0	2,254.0
		City of Smithville	2,000	6,000	8,000	392.0	1,176.0	0	53.0	1,621.0
		<b>Not Under Contract</b>		75,700	75,700			14,873.0	0	14,873.0
	Stockton Lake, MO	City of Springfield	25,000	25,000	50,000	4,796.4	4,796.0	0	0	9,592.8
Tuttle Creek Lake, KS	Kansas Water Office	27,500	0	27,500	1,174.6	0	0	0	1,174.6	
	Kansas Water Office	8,650	0	8,650	369.0	0	0	0	369.0	
	Kansas Water Office	13,850	0	13,850	591.0	0	0	0	591.0	
Total	13 projects	20 contracts	383,426	539,874	923,300	39,809.9	50,041.6	16,773	365.4	106,989.9
DIV Total	16 projects	29 contracts	406,914	546,166	953,080	43,720.0	50,041.6	22,503.3	365.4	116,630.3

# Water Supply Database 2004 Survey

## Southwestern Division - Little Rock District

Project	User	Storage Space (acre-feet)			Contract Price (\$000)				
		Present Use	Future Use	Total Contract	Present Storage	Future Storage	Not Under Contract	Conduit	Total Contract
Beaver, AR	Beaver Water District No. 1	77,139	31,056	108,195	3,676.9	1,480.3	0	0	5,157.2
	Carroll-Boone Water District	9,016	0	9,016	742.0	0	0	0	742.0
	Madison County Water District	3,945	0	3,945	416.5	0	0	0	416.5
	Benton/Washington County Water District	7,643	0	7,643	939.9	0	0	0	939.9
Blue Mountain, AR	City of Danville	1,550	0	1,550	417.3	0	0	0	417.3
Bull Shoals, AR	Marion County Regional Water System	880	0	880	85.0	0	0	0	85.0
Dardanell Lake, AR	AP&L Nuclear One	No storage. Water withdrawn from Dardanelle for cooling. Much water returned to Arkansas River. They pay only for what evaporates and is not returned to the river.							
DeQueen, AR	Sevier County Rural Water District	610	0	610	249.5	0	0	6.6	256.1
	<b>Not Under Contract</b>	0	17,275	17,275	0	0	4,942.4	186.9	5,129.3
Dierks, AR	Marion Tri-Lakes Water District	190	9,910	10,100	44.1	2,106.6	0	181.7	2,332.4
Gillham, AR	Gillham Lake Regional Water	200	20,600	20,800	167.2	5,251.0	0	79.0	5,497.2
Greers Ferry, AR	City of Heber Springs	1,013	0	1,013	122.4	0	0	0	122.4
	Tannebaum Golf Course	90	0	90	11.1	0	0	0	11.1
	Clinton Water District	906	0	906	81.0	0	0	0	81.0
	Community Water System	225	0	225	20.3	0	0	0	20.3
	Community Water System Phase I	3,776	0	3,776	457.8	0	0	0	457.8
	Community Water System Phase II	4,283	0	4,283	561.2	0	0	0	561.2
	Thunderbird Golf Course	55	0	55	7.1	0	0	0	7.1
	Red Apple Inn & Country Club	65	0	65	8.4	0	0	0	8.4
Millwood Lake, AR	Southwest AR Water District	44,544	105,456	150,000	4,356.3	10,177.6	0	110.5	14,644.4
Nimrod, AR	City of Plainview	33	0	33	33	0	0	0	33.0
	City of Plainview	110	0	110	22.0	0	0	0	22.0
Norfolk, AR	Water Sewer District #3	2,400	0	2,400	65.5	0	0	0	65.5
Table Rock, MO	King's River Country Club [1]	95	0	95	48.9	0	0	0	48.9
12 Projects	23 Contracts	158,768	184,297	343,065	12,533.4	19,015.5	4,942.4	377.8 UC 186.9 NUC	37,056.0

Footnote: [1] Surplus water contract, which was just renewed for 5-years. Sponsor pays \$979 annually for P&I + \$46 annual for OMR&R. Assume 50 x \$979 for contract price.

## Appendix C: Storage Space and Costs by District and Project

### Southwestern Division - Ft. Worth District

Project	User	Storage Space (acre-feet)			Contract Price (\$000)				
		Present Use	Future Use	Total Contract	Present Storage	Future Storage	Not Under Contract	Conduit	Total Contract
Aquilla, TX	Brazos River Auth.	17,320	16,280	33,600	6,481	6,092	0	0	12,573
Bardwell, TX	Trinity River Auth.	42,800	0	42,800	3,291	0	0	0	3,291
Belton, TX	Brazos River A. '59	113,700	0	113,700	1,524	0	0	0	1,524
	Brazos River A. '60	247,000	0	247,000	3,601	0	0	0	3,601
Benbrook, TX	City of Ft. Worth '69	7,250	0	7,250	310	0	0	36	346
	Benbrook W&SA '71	9,208	0	9,208	394	0	0	0	394
	Benbrook W&SA '79	7,250	0	7,250	310	0	0	0	310
	Tarrant Reg. WD '91	48,792	0	48,792	2,086	0	0	0	2,086
Canyon, TX	Guadalupe-Blanco RA	366,400	0	366,400	8,080	0	0	0	8,080
Cooper (Jim Chapman), TX	City of Irving '76	100,625	0	100,625	9,208	0	0	0	9,208
	N. Texas MWD '76	100,625	0	100,625	9,208	0	0	0	9,208
	Sulphur R. MWD '76	71,750	0	71,750	6,565	0	0	0	6,565
Ferrell's Bridge Dam (Lake of the Pines), TX	N.E. Texas MWD	250,000	0	250,000	1,753	00	0	0	1,753
Granger, TX	Brazos River Auth.	0	37,900	37,900	0	12,865	0	0	12,865
Grapevine, TX	City of Grapevine '53	1,250	0	1,250	23	0	0	0	23
	City of Dallas '54	85,000	0	85,000	1,433	0	0	0	1,433
	Dallas Co. Park '54	50,000	0	50,000	607	0	0	0	607
	City of Grapevine '81	25,000	0	25,000	684	0	0	0	684
Hords Creek, TX	City of Coleman / Central Colo. River Auth.	5,780	0	5,780	100	0	0	5	105
Joe Pool, TX	Trinity River Auth.	21,435	142,900	164,335	7,559	50,396	0	80	58,035
Lavon, TX	N. Texas MWD	100,000	0	100,000	1,256	0	0	0	1,256
	N. Texas MWD (mod)	280,000	0	280,000	35,040	0	0	0	35,040
Lewisville, TX	City of Dallas '53	415,000	0	415,000	3,677	0	0	0	3,677
	City of Denton '53	20,928	0	20,928	260	0	0	0	260
Navarro Mills, TX	Trinity River Auth.	15,960	37,240	53,200	653	1,523	0	28	2,204
N. San Gabriel Dam (Georgetown), TX	Brazos River Auth.	28,472	728	29,200	5,864	150	0	0	6,014
O.C. Fisher	Upper Colorado River Auth.	80,400	0	80,400	860	0	0	0	860
Proctor, TX	Brazos River Auth.	6,280	25,120	31,400	263	1,051	0	0	1,314
Ray Roberts, TX	City of Dallas '80	419,713	266,104	685,818	55,903	50,653	0	0	106,556
	City of Denton '80	147,467	93,496	240,962	19,642	17,797	0	0	37,438
Sam Rayburn, TX	City of Lufkin	18,000	25,000	43,000	220	306	0	0	526
Somerville, TX	Brazos River Auth.	7,200	136,700	143,900	360	6,837	0	0	7,197
Stillhouse Hollow, TX	Brazos River Auth.	26,740	178,160	204,900	911	6,072	0	0	6,983
Town Bluff Dam (B.A. Steinhagen), TX	L. Neches Valley Auth.	94,200	0	94,200	2,000	0	0	0	2,000
Waco, TX	Brazos River Auth.	91,074	0	91,074	5,577	0	0	216	5,793
	City of Waco	13,026	0	13,026	City transferred existing Lake Waco to the Government. No P&I cost to the city for storage in new project.				0
	Brazos River Auth.	47,526	0	47,526	15,242	0	0	0	15,242
Whitney, TX	Brazos River Auth./	50,000	0	50,000	1,181	0	0	0	1,181
Wright Patman, TX	Cities of Texarkana, TX & AR	9,800	0	9,800	350	0	0	0	350
	City of Texarkana, TX #-0019	201,900	0	201,900	1,438	0	0	0	1,438
	City of Texarkana, TX #-0103	This contract to replace #-0019 when final costs determined for pool raise (not yet implemented as of 21 Dec. 2004)							
25 projects	40 contracts	3,644,943	959,628	4,604,571	213,914	153,742	0	365	368,021

# Water Supply Database 2004 Survey

## Southwestern Division - Tulsa District

Project	User	Storage Space (acre-feet)			Contract Price (\$000)				
		Present Use	Future Use	Total Contract	Present Storage	Future Storage	Not Under Contract	Conduit	Total Contract
Arcadia Lake, OK	Edmond PWA	23,090	0	23,090	44,043.6	0	0	0	44,043.6
Birch Lake, OK	<b>Not Under Contract</b>	0	7,630	7,630	0	0	2,209.0	0	2,209.0
Broken Bow, OK	OK Tourism & Recreation	60	0	60	1.6	0	0	0.1	1.7
	Broken Bow PWA	4,241	4,054	8,295	112.6	107.6	0	6.2	226.4
	<b>Not Under Contract</b>	0	144,145	144,145	0	0	3,827.0	108.1	3,935.1
Canton Lake, OK	OK City Municipal Improvement Authority	90,000	0	90,000	2,806.9	0	0	0	2,806.9
Copan Lake, OK	Copan PWA	250	4,750	5,000	268.7	5,105.2	0	0	5,373.9
	<b>Not Under Contract</b>	0	2,500	2,500	0	0	2,686.9	24.7	2,711.6
Council Grove, KA	Kansas Water Res. Board	24,400	0	24,400	1,400	0	0	62.0	1,462.0
	State of Kansas	8,000	0	8,000	723.2	0	0	0	723.2
Denison Dam, Lake Texoma, OK/TX	City of Denison, TX	21,300	0	21,300	292.9	0	0	0	292.9
	Texas Power and Light	16,400	0	16,400	286.4	0	0	0	286.4
	Red River Auth of Texas	450	0	450	9.1	0	0	0	9.1
	Red River Auth of Texas	2,286	0	2,286	364.4	0	0	0	364.4
	N. Texas MWD	95,053	0	95,053	16,984.6	0	0	0	16,984.6
	Buncombe Creek View Addition	1	0	1	0.3	0	0	0	0.3
	Greater Texoma Utility Auth.	5,500	0	5,500	1,266.1	0	0	0	1,266.1
	Greater Texoma Utility Auth.	5,500	0	5,500	1,407.8	0	0	0	1,407.8
El Dorado, KA	City of El Dorado	70,713	72,087	142,800	18,985.7	18,500	0	838.2	38,323.9
Elk City, KA	Kansas Water Res. Board	24,300	0	24,300	2,076	0	0	71.0	2,147.0
	State of Kansas	10,000	0	10,000	663.9	0	0	0	663.0
Eufaula, OK	Haskell County Water Company	400	0	400	35.4	0	0	0	35.4
	Pittsburg County Water Authority	850	0	850	75.3	0	0	0	75.3
	Haskell Co. RWD No. 1	50	0	50	4.4	0	0	0	4.4
	Pittsburg Co. RWD No. 4	50	0	50	4.4	0	0	0	4.4
	Muskogee Co. RWD No. 3	100	0	100	8.9	0	0	0	8.9
	Porum Public Works Auth.	125	0	125	11.1	0	0	0	11.1
	Lakeside Water Co., Inc.	20	0	20	1.8	0	0	0	1.8
	Sherwood Forrest Co.	60	0	60	5.3	0	0	0	5.3
	Haskell Co. RWD No. 3	25	0	25	2.2	0	0	0	2.2
	Krebs Utility Authority	280	280	560	29.1	29.1	0	0	58.2
	McIntosh County Rural WGS District No. 8	300	1,200	1,500	31.6	106.1	0	0	137.7
	Porum Public Works Auth.	280	120	400	30.1	10.6	0	0	40.7
	Pittsburg County Public Works Authority	300	190	490	33.1	25.8	0	0	58.9
	Longtown RWD & SD #1	1,000	0	1,000	80.8	0	0	0.4	81.2
	Public Service Company of Oklahoma	0	100	100	0	8.1	0	0.04	8.14
	McAlester Public Works	6,250	0	6,250	505.1	0	0	2.2	507.3
	Bristow Point Property Owners Association	15	0	15	1.2	0	0	0.01	1.21
	Warner Utilities Authority	220	0	220	17.8	0	0	0.08	17.88
	Twin Rivers Estates, Inc.	9	0	9	0.7	0	0	0.003	0.703
	Bridgeport Dunes Condominium Homeowners Association, Inc.	5	0	5	0.4	0	0	0.002	0.402
Pittsburg Co. RWD #14	320	0	320	25.8	0	0	0.1	25.9	
Duchess Creek Mobile Home	4	0	4	0.3	0	0	.001	0.301	
Warner Utilities Authority	475	0	475	38,438.4	0	0	0.17	38.57	



## Appendix C: Storage Space and Costs by District and Project

### Southwestern Division - Tulsa District (continued)

Project	User	Storage Space (acre-feet)			Contract Price (\$000)				
		Present Use	Future Use	Total Contract	Present Storage	Future Storage	Not Under Contract	Conduit	Total Contract
Eufaula, OK (cont.)	McIntosh County 0 RWD & SWM Dist. #2	1,000	0	1,000	80.8	0	0	0.4	81.2
	Juniper Water Company	12,040	0	12,040	972.9	0	0	4.3	977.2
	<b>Not Under Contract</b>	0	29,932	29,932	0	0	2,341.6	10.4	2,352.0
	(Under negotiation) (1-contract)	(25,000)	0	(25,000)	(4,600.6)	0	0	0	(4,600.6)
Fort Supply, OK	<b>Not Under Contract</b>	0	400	400	0	0	38.8	0	38.8
Heyburn, OK	Creek County RWD #3	300	0	300	13.4	0	0	51.2	64.6
	Creek County RWD #3	600	0	600	34.4	0	0	0	34.4
	Creek County RWD #3	1,100	0	1,100	73.1	0	0	0	73.1
Hugo, OK	Hugo Municipal Authority	1,640	18,880	20,520	94	1,082.4	0	30.0	1,206.4
	Antlers PWA	490	430	920	28.1	25	0	0	53.1
	Western Farmers Coop.	6,100	17,350	23,450	350	995	0	0	1,345.0
	Pushmataha County RWD #3	513	0	513	29.4	0	0	0	29.4
	<b>Not Under Contract</b>	0	2,197	2,197	0	0	126	0	126
Hula, OK	City of Bartlesville	15,400	0	15,400	618.7	0	0	5.3	624.0
	Hula Water District	100	0	100	4	0	0	0	4.0
	City of Bartlesville, Mod	2,200	0	2,200	88.3	0	0	0	88.3
	City of Bartlesville	2,100	0	2,100	84.2	0	0	0	84.2
John Redmond, KA	Kansas Water Res. Board	34,900	0	34,900	4,488.0	0	0	11.0	4,499.0
	State of Kansas	10,000	0	10,000	469.5	0	0	0	469.5
Kaw, OK	Oklahoma Gas & Electric	17,589	21,761	39,350	4,401.0	4,999.5	0	0	9,040.5
	Kaw reservoir Authority	<b>conduit</b>						396	396.0
	Stillwater Utility Authority	6,662	44,788	51,450	1,530.4	10,290.0	0	0	11,820.4
	Kaw Tribe	44 Act, Interim for irrigation							
	Otoe-Missouria	183	0	183	42.1	0	0	0	42.1
	<b>Not Under Contract</b>	0	80,217	80,217	0	0	18,428.5	0	18,428.5
Keystone, OK	Public Service Co. of OK	12,500	5,500	18,000	1,094.8	481.7	0	0	1,576.5
	<b>Not Under Contract</b>	0	2,000	2,000	0	0	175.2	28.3	203.5
Marion, KA	Kansas Water Res. Board	38,300	0	38,300	1,566.0	0	0	0	1,566.0
	Kansas Water Office	12,500	0	12,500	2,188	0	0	0	2,188
Oologah, OK	City of Tulsa	285,450	0	285,450	9,229.3	0	0	391.5	9,620.8
	City of Collinsville	6,670	0	6,670	215.7	0	0	0	215.7
	Public Service Co. of OK	20,990	0	20,990	678.7	0	0	0	678.7
	Nowata Co. RWD #1	200	0	200	6.5	0	0	0	6.5
	Rogers Co. RWS #4	1,590	0	1,590	51.4	0	0	0	51.4
	Rogers Co. RWS #3	5,960	0	5,960	192.7	0	0	0	192.7
	Town of Chelsea	670	860	1,530	21.7	27.7	0	0	49.4
	City of Claremore	445	0	445	14.4	0	0	0	14.4
	Washington Co. RWD #3	4,170	0	4,170	134.8	0	0	0	134.8
	Claremore Public Works	6,230	0	6,230	201.4	0	0	0	201.4
	<b>Not Under Contract</b>	0	9,365	9,365	0	0	302.8	0	302.8
Pat Mayse, TX	City of Paris	43,800	65,800	109,600	1,284.0	1,926.0	0	0	3,210.0
	<b>Not Under Contract</b>	<b>conduit</b>						10.0	10.0
Pearson-Skubitz, KS	State of Kansas	9,200	16,500	25,700	2,490.5	4,465.3	0	21.3	6,977.1
Pine Creek, OK	Weyerhaeuser	17,640	11,160	28,800	1,663.0	1,052.0	0	0	2,715.0
	<b>Not Under Contract</b>	0	20,600	20,600	0	0	1,942.0	148.0	2,090.0
Sardis, OK	OK Water Res. Board	141,700	155,500	297,200	18,006.0	19,760.1	0	121.2	37,887.3
Skiatook, OK	Osage Co. RWS #15	0	2,000	2,000	0	563.9	0	704.0	1,267.9
	Sand Springs Municipal Auth.	6,740	0	6,740	1,900.2	0	0	0	1,900.2
	Sapulpa Municipal Auth.	4,490	0	4,490	1,265.8	0	0	0	1,265.8
	Skiatook PWA	2,018	0	2,018	568.9	0	0	0	568.9
	Skiatook PWA	2,743	0	2,743	890.7	0	0	0	890.7
	Sapulpa Municipal Auth.	4,500	0	4,500	1,268.7	0	0	0	1,268.7
	<b>Not Under Contract</b>	0	40,409	40,409	0	0	11,275.5	0	11,275.5
	(Under negotiation) (2-contracts)	(15,750)	0	(15,750)	(4,700.3)	0	0	0	(4,700.3)

# Water Supply Database 2004 Survey

## Southwestern Division - Tulsa District (continued)

Project	User	Storage Space (acre-feet)			Contract Price (\$000)				
		Present Use	Future Use	Total Contract	Present Storage	Future Storage	Not Under Contract	Conduit	Total Contract
Tenkiller, OK	East Central Oklahoma Water Authority	300	0	300	6.1	0	0	11.6	17.7
	Cherokee Co. RWD #13	100	0	100	2.0	0	0	0	2.0
	Cherokee Co. RWD #2	100	0	100	2.0	0	0	0	2.0
	Sequoyah Co. Water Ass.	2,200	0	2,200	44.4	0	0	0	44.4
	Sequoyah Fuels Corporation	14,000	0	14,000	285.2	0	0	0	285.2
	Summit Water Inc.	140	0	140	2.8	0	0	0	2.8
	Paradise Hills, Inc.	220	0	220	4.4	0	0	0	4.4
	Lake Tenkiller Association	200	0	200	4.0	0	0	0	4.0
	Greenleaf Nursery Co.	2,120	0	2,120	42.8	0	0	0	42.8
	Greenleaf Nursery Co.	300	0	300	6.1	0	0	0	6.1
	Tenkiller Water Company	38	0	38	4.1	0	0	0	4.1
	Stepp and Ross & Company	17	0	17	2.0	0	0	0	2.0
	Mongold Water System	5	0	5	1.0	0	0	0	1.0
	Tenkiller Aqua Park	17	0	17	2.0	0	0	0	2.0
	Gore Public Works Auth.	480	0	480	51.8	0	0	0	51.8
	Tenkiller Water Company	34	0	34	3.8	0	0	0	3.8
	Pettit Bay Water Association	5	0	5	0.6	0	0	0	0.6
	Fin and Feather Resort	12	0	12	1.5	0	0	0	1.5
	Sixshooter Water System	2	0	2	0.3	0	0	0	0.3
	The Dutchman's Cabins	6	0	6	0.7	0	0	0	0.7
	Bill Richardson	1	0	1	0.1	0	0	0	0.1
	Indian Hills Estate Co.	3	0	3	0.4	0	0	0	0.4
	Charles Willige	2	0	2	0.3	0	0	0	0.3
	JR and ML Mosteller	2	0	2	0.2	0	0	0	0.2
	Tenkiller Water Company	30	0	30	3.8	0	0	0	3.8
	Woodhaven (Tenkiller Water Company, Inc.)	15	0	15	1.9	0	0	0	1.9
	Burnt Cabin RWD, Inc.	12	0	12	1.2	0	0	0	1.2
	Sunny Heights Water System	10	0	10	1.2	0	0	0	1.2
	Tenkiller Development Co.	3	0	3	0.4	0	0	0	0.4
	RWD #13 Cherokee Co.	132	0	132	20.5	0	0	0	20.5
	Pettit Mountain Water Ass.	10	0	10	0.007	0	0	0	0.007
	<b>Not Under Contract</b>	0	4,884	4,884	0	0	763.4	0	763.4
(Under negotiation) (1-contract)	(4,884.0)	0	(4,884.0)	(763.4)	0	0	0	(763.4)	
Toronto, KS	City of Toronto	265	0	265	21.4	0	0	0	21.4
	City of Toronto	135	0	135	11.0	0	0	0	11.0
Waurika, OK	Waurika Project Master Conservation District	41,800	0	41,800	2,802.2	0	0	213.0	3,015.2
	Conveyance Facilities / Waurika PMC Dist. Eastern	<b>conduit</b>						9,725.2	9,725.2
	Conveyance Facilities / Waurika PMC Dist. Southern	<b>conduit</b>						447.9	447.9
	Conveyance Facilities / Waurika PMC Dist. Western	<b>conduit</b>						20,608.5	20,608.5
	<b>Not Under Contract</b>	0	109,600	109,600	0	0	8,042	0	8,942.0
Wister, OK	Heavener Utility Authority	1,600	0	1,600	41.7	0	0	0	41.7
	Poteau Valley Improvement Authority	4,800	0	4,800	125.0	0	0	0	125.0
	AES Shady Point, Inc.	7,253	0	7,253	109.0	0	0	0	109.0
	<b>Not Under Contract</b>	0	347	347	0	0	199.7	0	199.7

## Appendix C: Storage Space and Costs by District and Project

### Southwestern Division - Tulsa District (continued)

Project	User	Storage Space (acre-feet)			Contract Price (\$000)				
		Present Use	Future Use	Total Contract	Present Storage	Future Storage	Not Under Contract	Conduit	Total Contract
District Total 28 Projects	120 storage agreements + 4 separate conduit agreements [1]	1,230,444	UC: 443,310 NUC: 454,226	2,127,980	154,217.7	69,561.1	52,358.2	UC: 33,745.9 NUC: 329.5	310,212.6

Footnote: [1] There is a separate conduit agreement at Kaw plus three at Waurika.

### Southwestern Division - Tulsa District Summary by Project

Project	Storage Space (acre-feet)				Investment Price (\$000)				
	Present Use	Future Use	Not Under Contract	Total Project	Present Storage	Future Storage	Not Under Contract	Conduit	Total Contract
Arcadia, OK	23,090	0	0	23,090	44,043.6	0	0	0	44,043.6
Birch Lake, OK	0	0	7,630	7,630	0	0	2,209.0	23.0	2,232.0
Broken Bow, OK	4,301	4,054	144,145	152,500	114.2	107.6	3,827.0	UC: 6.3 NUC: 108.1	4,163.2
Canton, OK	90,000	0	0	90,000	2,806.9	0	0	0	2,806.9
Copan, OK	250	4,750	2,500	7,500	268.7	5,105.2	2,686.9	NUC: 24.7	8,085.5
Council Grove, KA	32,400	0	0	32,400	2,123.2	0	0	62.0	2,185.2
Denison, OK & TX	146,460	0	0	146,460	20,611.6	0	0	0	20,611.6
El Dorado, KA	70,713	72,087	0	142,800	18,985.7	18,500.0	0	838.2	38,323.9
Elk Creek, KA	34,300	0	0	34,300	2,739.9	0	0	71.0	2,810.9
Eufaula, OK	24,178	1,890	29,932	56,000	1,996.9	179.7	2,341.6	UC: 7.7 NUC: 10.4	4,536.3
Fort Supply, OK	0	0	400	400	0	0	38.8	0	38.8
Heyburn, OK	2,000	0	0	2,000	120.9	0	0	51.2	172.1
Hugo, OK	8,743	36,660	2,197	47,600	501.5	2,102.4	126.0	30.0	2,759.9
Hula, OK	19,800	0	0	19,800	795.2	0	0	5.3	800.5
John Redmond, KA	44,900	0	0	44,900	4,957.5	0	0	11.0	4,968.5
Kaw, OK	24,434	66,549	80,217	171,200	5,613.5	15,289.5	18,428.5	396.0	39,727.5
Keystone, OK	12,500	5,500	2,000	20,000	1,094.8	481.7	175.2	NUC: 28.3	1,780.0
Marion, KA	50,800	0	0	50,800	3,754.0	0	0	0	3,754.0
Oologah, OK	332,375	860	9,365	342,600	10,746.6	27.7	302.8	391.5	11,468.6
Pat Mayse, TX	43,800	65,800	0	109,600	1,284.0	1,926.0	0	NUC: 10.0	3,220.0
Pearson-Skubitz, Big Hill, KA	9,200	16,500	0	25,700	2,490.5	4,465.3	0	21.3	6,977.1
Pine Creek, OK	17,640	11,160	20,600	49,400	1,663.0	1,052.0	1,942.0	NUC: 148.0	4,805.0
Sardis, OK	141,700	155,500	0	297,200	18,006.0	19,760.1	0	121.2	37,887.3
Skiatook, OK	20,491	2,000	40,409	62,900	5,894.3	563.9	11,275.5	704.0	18,437.7
Tenkiller Ferry, OK	20,516	0	4,884	25,400	494.9	0	763.4	11.6	1,269.9
Toronto, KA	400	0	0	400	32.4	0	0	0	32.4
Waurka, OK	41,800	0	109,600	151,400	2,802.2	0	8,042.0	30,994.6	41,838.8
Wister, OK	13,653	0	347	14,000	275.7	0	199.7	0	475.4
<b>Total: 28 Projects &amp; 120 storage agreements + 4 separate conduit agreements</b>	<b>1,230,444</b>	<b>443,310</b>	<b>454,226</b>	<b>2,127,980</b>	<b>154,217.7</b>	<b>69,561.1</b>	<b>52,358.4</b>	<b>UC: 33,745.9 NUC: 329.5</b>	<b>310,212.6</b>

### Southwestern Division Summary by District

District Project / Contracts	Storage Space (acre-feet)				Investment Price (\$000)				
	Present Use	Future Use	Not Under Contract	Total Project	Present Storage	Future Storage	Not Under Contract	Conduit	Total
Little Rock 12 / 23	158,768	167,022	17,275	343,065	12,533.4	19,015.5	4,942.4	UC: 377.8 NUC: 186.9	37,056.0
Ft. Worth 25 / 40	3,644,943	959,628	0	4,604,571	213,914.0	153,742.0	0	UC: 365	368,021.0
Tulsa 28 / 120 + 4 more conduit contracts	1,230,444	443,310	454,226	2,127,980	154,217.7	69,561.1	52,358.4	UC: 33,745.9 NUC: 329.5	310,212.6
<b>TOTAL 65 / 187</b>	<b>5,034,155</b>	<b>1,569,960</b>	<b>471,501</b>	<b>7,075,616</b>	<b>380,665.1</b>	<b>242,318.6</b>	<b>57,300.8</b>	<b>UC: 34,488.7 NUC: 516.4</b>	<b>715,289.6</b>

**South Pacific Division**

Dist	Project	User	Storage Space (acre-feet)			Contract Price (\$000)			
			Present Use	Future Use	Total Contract	Present Storage	Future Storage	Not Under Contract	Total Contract
SPK	Hew Hogan, CA	Stockton and East San Joaquin Water Conservation Dist.	30,000	0	30,000	15,906	0	0	15,906
SPN	Coyote Valley Dam / Lake Mendocino, CA	Sonoma County Water Agency, CA	70,000	0	70,000	5,600	0	0	5,600
	Warm Springs Dam / Lake Sonoma, CA [1]	Sonoma County Water Agency, CA	212,000	0	212,000	116,600	0	0	116,600
SPA	Abiqui, NM	City of Albuquerque	170,900	0	170,900	0	0	0	0
Div Total	4 Projects	4 Contracts	482,900	0	482,900	138,106	0	0	138,106

Footnote: [1] San Francisco District. Cost data for Warm Springs Dam based on 1996 data.

# Appendix D: M&I Water Supply Projects

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## North Atlantic Division

<u>New England</u>	Colebrook, CT East Brimfield, CT Littlefield, MA
<u>Philadelphia</u>	Beltzville, PA Blue Marsh, PA
<u>Baltimore</u>	Cowanesque, PA Curwensville, PA Jennings Randolph, MD/ WV

## South Atlantic Division

<u>Wilmington</u>	B. Everet Jordan, NC Falls Lake, NC John H. Kerr, VA/NC W. Kerr Scott, NC
<u>Savannah</u>	Hartwell, SC/GA J. Strom Thurmond, SC/GA Richard B. Russell, SC/GA
<u>Jacksonville</u>	Cerrillos, D&R PR
<u>Mobile</u>	Allatoona, GA Carters, GA Okatibbee Lake, MS

## Lakes and Rivers Division

<u>Pittsburgh</u>	Berlin Lake, OH Mosquito Creek, OH Stonewall Jackson, WV Tygart River Lake, WV
<u>Huntington</u>	Alum, OH John W. Flannagan, VA North Fork of Pound Lake, VA Paint, OH Tom Jenkins Dam, OH Summersville, WV
<u>Louisville</u>	Barren River Lake, KY Brookville, IN Caesar, OH Cave Run Lake, KY Green River, KY Monroe, IN Nolin, KY Patoka, IN Rough River Lake, KY William H. Harsha Lake, OH
<u>Nashville</u>	Center Hill Lake, TN J. Percy Priest, TN

## Mississippi Valley Division

<u>Rock Island</u>	Saylorville, IA
<u>St. Louis</u>	Carlyle, IL Clarence Cannon Dam, MO Lake Shelbyville, IL Rend Lake, IL
<u>Vicksburg</u>	DeGray, AR Enid, MS Lake Ouachita, AR

## Northwestern Division

<u>Portland</u>	Lost Creek, OR *
<u>Omaha</u>	Bowman-Haley, ND Garrison Dam, ND *
<u>Kansas City</u>	Clinton, KS Harry S. Truman, MO Hillsdale, KS Kanopolis, KS * Long Branch, MO Melvern, KS Milford, KS Perry, KS Pomona, KS Rathbun, IA Smithville, MO Stockton, MO Tuttle Creek Lake, KS

## Southwestern Division

<u>Little Rock</u>	Beaver, AR Blue Mountain, AR Bull Shoals, AR Dardanelle L&D, AR [1] DeQueen, AR Dierks, AR Gillham, AR Greers Ferry, AR Millwood Lake, AR Nimrod, AR Norfolk, AR Table Rock, MO
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[1]: No storage. Water withdrawn from the lake for cooling. Much of the water is returned to Arkansas River. The sponsor pays only for what evaporates and is not returned to the river.

<u>Ft. Worth</u>	Aquilla, TX Bardwell, TX Belton, TX * Benbrook, TX Canyon, TX Cooper (Jim Chapman), TX Ferrell's Bridge Dam, TX Granger, TX
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## Water Supply Database 2004 Survey

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### Ft. Worth (continued)

Grapevine, TX  
Hords Creek, TX  
Joe Pool, TX  
Lavon, TX  
Lewisville, TX  
Navarro Mills, TX  
North San Gabriel Dam  
(Georgetown), TX  
O. C. Fisher, TX  
Proctor, TX  
Ray Roberts, TX  
Sam Rayburn, TX  
Somerville, TX  
Stillhouse Hollow, TX  
Town Bluff Dam (B.A.  
Steinhagen), TX

Waco, TX

Whitney, TX

Wright Patman, TX

### Tulsa

Arcadia, OK

Birch, OK

Broken Bow, OK

Canton, OK

Copan, OK

Council Grove, KS

Denison Dam, L. Texoma,  
OK/TX

El Dorado, KS

Elk City, KS

Eufaula, OK

Fort Supply, OK

Heyburn, OK

Hugo, OK

Hulah, OK

John Redmond, KS

Kaw, OK

Keystone, OK

Marion, KS

Oologah, OK

Pat Mayse, TX

Pearson-Skubitz, Big Hill, KS

Pine Creek, OK

Sardis, OK

Skiatook, OK

Tenkiller Ferry Lake, OK

Toronto, KS

Waurika, OK \*

Wister, OK

### **South Pacific Division**

Sacramento

New Hogan, CA \*

San Francisco

Coyote Valley Dam / Lake  
Mendocino, CA\*

Warm Springs Dam / Lake Sonoma,  
CA

Albuquerque

Abiqui, NM

\* Signifies the seven projects (Lost Creek, OR; Garrison, ND; Kanopolis, KS; Belton, TX; Waurika, OK; New Hogan, CA and Coyote Valley, CA) that also contain agricultural water supply.

## Appendix E: Reallocations

Dist	Project	Sponsor	Year Real.	Storage (acre-feet)	Storage Reallocated From	Contract Price
NAE	East Brimfield Lake, MA	American Optical Co.	1/62	1,140	FC	24,500
NAB	Cowanesque Lake, PA	Susquehanna River Basin Commission	1990	24,335	FC	39,414,000
	Curwensville Lake, PA	Susquehanna River Basin Commission	1997	5,360	Cons.	4,878,000
<b>Total</b>	<b>3</b>	<b>3</b>	<b>62-97</b>	<b>30,835</b>		<b>44,316,500</b>
SAW	John H. Kerr, VA & NC	Virginia Beach	1/84	10,200	Hydro	2,275,685
		VA Dept. of Corrections	4/89	23	Hydro	5,639
		Mecklenburg CoGeneration	6/91	600	Hydro	150,241
SAS	Hartwell, GA&SC	Anderson County Joint Municipal Water System, SC	7/76	24,620	Hydro	3,025,000
		City of Lavonia, GA	2/90	127	Hydro	21,500
		Hart County, GA	2/97	1,827	Hydro	335,200
	Richard B. Russell, GA&SC	City of Elberton, sc	9/90	381	Hydro	419,000
		SC Public Service Auth. (Santee Cooper)	8/01	491	FC	1,615,200
	J. Strom Thurman, GA&SC	City of Lincolnton, GA	5/64	92	Hydro	12,000
		City of McCormick, SC	12/99	506	Hydro	75,000
		Savannah Valley, SC	10/89	92	Hydro	27,400
		Columbia County, GA	11/89	1,056	Hydro	313,000
		City of Thompson and McDuffie, GA	8/90	1,056	Hydro	334,700
		City of Lincoln, GA	4/90	83	Hydro	24,600
SAM	Allatoona, GA	City of Wash., GA	1982 Supp.	632	Hydro	72,800
		City of McCormick, SC	8/01	316	Hydro	66,500
		Cobb Co. – Marietta Water Auth.	10/63	13,140	Cons. / Hydro	1,268,400
	Carters, GA	City of Cartersville	7/66	1,996	Cons. / Hydro	396,000
City of Cartersville		10/91	4,375	Cons. / Hydro	NA	
<b>Total</b>	<b>6</b>	<b>20</b>	<b>63-01</b>	<b>62,431</b>		<b>11,047,086</b>
LRN	Center Hill, TN	City of Cookeville	10/03	6,680	Hydro	2,915,045
		City of Smithville	8/03	401	Hydro	54,536
		Riverwatch Golf Inc.	8/03	131	Hydro	103,381
	J. Percy Priest, TN	City of LaVergne	7/03	2,733	Hydro	1,818,550
		City of Murfreesboro	4/03	5,084	Hydro	3,051,429
		Consolidated Utility Dist.	3/03	3,007	Hydro	1,804,609
		Consolidated Utility Dist.	6/03	1,367	Hydro	820,277
		YMCA	8/03	22	Hydro	16,638
Cedar Crest Golf LLC.	2/04	96	Hydro	75,951		
LRL	Barren River Lake, KY	Glasgow	10/65	681	NA	22,300
		Scottsville	9/69	369	NA	12,200
	Cave Run, KY	Cave Run Water Commission	10/03	536	NA	730
	Green River Lake, KY	Campbellsville	4/69	3,460	NA	92,100
		Columbia	7/92	855	NA	900
	Nolin L. KY	Edmonson County Water District	1/89	98	NA	100
	Rough R. Lake, KY	Hardinsburg	3/79	150	NA	78,300
Leitchfield		5/66	120	NA	3,600	

## Water Supply Database 2004 Survey

Dist	Project	Sponsor	Year Real.	Storage (acre-feet)	Storage Reallocated From	Contract Price
LRH	J.W. Flannagan, VA	Dickenson Co. Water Auth.	10/77	2,125	WQ	3,407,700
	Summersville, WV	City of Summersville	6/01	468	FC	234,000
<b>Total</b>	<b>9</b>	<b>19</b>	<b>65-04</b>	<b>28,383</b>		<b>14,512,346</b>
MVR	Saylorville Lake, IA	State of Iowa	5/82	14,900	FC	4,811,600
MVK	Enid Lake, MS	LS Power Energy Ltd. Partnership	6/98	4,500	FC	1,111,898
	L. Ouachita, AR	N. Garland County RWD	2/96	1,575	FC & Hydro	112,859
<b>Total</b>	<b>3</b>	<b>3</b>	<b>82 - 98</b>	<b>20,975</b>		<b>6,036,357</b>
NWO	Bowman Haley	Bowman Co. Water Management Dist.	1981	19,780	Multi-purpose	825,000
NWK [1]	Harry S. Truman	Henry County #3 and HST PWSD #2	1994	1,000	Cons.	303,000
	Kanopolis	Kansas Water Office	2002	12,500	Cons.	4,181,200
	Melvern	Kansas Water Office	1988	50,000	WQ	7,131,800
	Pomona	Kansas Water Office	1988	32,500	WQ	3,593,100
	Rathbun	Rathbun Lake Water Association	1985	15,000	Cons.	2,629,000
	Stockton	City of Springfield	1993	50,000	Multipurpose	9,592,800
	Tuttle Creek	Kansas Water Office	1988	50,000	WQ / NAV	2,134,600
<b>Total</b>	<b>8</b>	<b>8</b>	<b>81 - 02</b>	<b>230,780</b>		<b>30,390,500</b>
SWL	Beaver Lake	Carroll-Boone Water District	1977	9,016	Hydro	742,000
		Madison County Water Dist.	1992	3,945	FC	416,500
		Benton/Washington County Water District	1996	7,643	FC	939,900
	Blue Mountain	City of Danville	1995	1,550	Cons	417,300
	Bull Shoals L	Marion Co. Regional Water Dist.	1988	880	Hydro	85,000
	Dierks Lake	Marion Tri-Lakes Water Dist.	1976	190	Hydro	44,000
	Greers Ferry Lake	City of Herber Springs	1959	1,013	FC	122,400
		Tannebaum Golf Course	1998	90	FC	11,100
		Clinton Water District	1970	900	FC	81,000
		Community Water System	1971	225	FC	20,300
		Community Water System Phase I	1995	3,776	FC	457,800
		Community Water System Phase II	1998	4,283	FC	561,200
		Thunderbird Golf Course	1998	55	FC	7,100
		Red Apple Inn & C. Club	1996	65	FC	8,400
		Nimrod	City of Plainview	1994	110	FC
Table Rock	Kings River Country Club	1992	95	Cons	48,900	
SWF	Lavon	N. Texas Municipal Water District	1975	280,000	NA	35,040,000
	Lewisville	City of Dallas and City of Denton	1987	177,000	NA	3,927,000
	Waco	Brazos River Authority	1984	47,526	NA	15,242,000
	Whitney	Brazos River Authority	1982	50,000	NA	1,181,000
SWT [2]	Council Grove	State of Kansas	1996	8,000	WQ	723,200
	Denison Dam – Lake Texoma, OK & TX	City of Denison	9/53	21,300	Hydro	292,900
		Texas Power & Light	8/61	16,400	Hydro	286,400
		Red River Authority of TX	11/69	450	Hydro	9,100
		Red River Authority of TX	8/83	2,286	Hydro	364,400



Appendix E: Reallocations

Dist.	Project	Sponsor	Year Real.	Storage (acre-feet)	Storage Reallocated From	Contract Price
SWT (cont.) [2]	Denison Dam – Lake Texoma, OK & TX (cont.)	N. Texas Municipal Water District	12/85	95,053	Hydro	16,984,600
		Buncombe Creek View Addition	4/92	1	Hydro	300
		Greater Texoma Utility Auth.	9/92	5,500	Hydro	1,266,100
		Greater Texoma Utility Auth.	9/97	5,500	Hydro	1,407,800
	Elk City	Kansas Water Auth.	6/96	10,000	WQ	663,900
	John Redmond	State of Kansas	6/96	10,000	WQ	469,500
	Marion	Kansas Water Office	6/96	12,500	WQ	2,188,000
	Tenkiller Ferry Lake	East Central Oklahoma Water Authority	10/64	300	FC	6,100
		Cherokee Co. RWD #13	11/67	100	FC	2,000
		Cherokee Co. RWD #2	11/67	100	FC	2,000
		Sequoyah Co. Water Ass.	7/70	2,200	FC	44,400
		Sequoyah Fuels Corporation	7/70	14,000	FC	285,200
		Summit Water Inc.	9/71	140	FC	2,800
		Paradise Hills, Inc.	10/74	220	FC	4,400
		Lake Tenkiller Ass.	3/81	200	FC	4,000
		Greenleaf Nursery Co.	6/94	2,120	FC	42,800
		Greenleaf Nursery Co.	7/95	300	FC	6,100
		Tenkiller Water Company	11/89	38	FC	4,100
		Stepp and Ross & Company	11/89	17	FC	2,000
		Mongold Water System	1/90	5	FC	1,000
		Tenkiller Aqua Park	9/90	17	FC	2,000
		Gore Public Works Auth.	9/90	480	FC	51,800
		Tenkiller Water Company	10/91	34	FC	3,800
		Pettit Bay Water Association	11/91	5	FC	600
		Fin and Feather Resort	1/92	12	FC	1,500
		Sixshooter Water System	1/92	2	FC	300
		The Dutchman's Cabins	4/92	6	FC	700
		Bill Richardson	7/92	1	FC	100
		Indian Hills Estate Co.	2/93	3	FC	400
		Charles Willige	2/93	2	FC	300
		JR and ML Mosteller	8/93	2	FC	200
		Tenkiller Water Company	5/94	30	FC	3,800
		Woodhaven (Tenkiller Water Company)	9/94	15	FC	1,900
		Burnt Cabin RWD, Inc.	11/94	12	FC	1,200
Sunny Heights Water System	4/95	10	FC	1,200		
Tenkiller Development Co.	5/95	3	FC	400		
RWD #13 Cherokee Co.	6/04	132	FC	20,500		
Petit Mountain Water Association	8/97	10	FC	600		
Wister	AES Shady Point, Inc.	5/87	7,253	FC	109,000	
<b>Div Total</b>	<b>18</b>	<b>64</b>	<b>53 - 04</b>	<b>803,121</b>		<b>84,638,300</b>
South Pacific Division reported no reallocations						
<b>National Totals</b>	<b>47 Projects</b>	<b>117 Contracts</b>	<b>Between 1953 &amp; 2004</b>	<b>1,176,525</b>		<b>190,941,089</b>

Footnotes:

[1] Kansas City District: Melvern, Pomona and Tuttle Creek reallocations are the result of the Kansas MOU.

[2] Tulsa District: Council Grove, Elk City, John Redmond and Marion are the result of the Kansas MOU.

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# Appendix F: Water Supply Studies Currently Underway

Dist	Project	Sponsor	Study Status	Study Project Purpose	If reallocated, from what purposes	Study Authority	Source of funding	Est. study cost (\$)	Estimated cost of project investment to be recovered (\$)	Estimated O&M (\$)	Est. date of study completion	Additional remarks
North Atlantic Division – None												
South Atlantic Division												
SAW	John H. Kerr, NC	City of Henderson	Study Complete	WS	Hydro	58 WS Act	O&M	150,000 (to date)	2,800,000	13,000		Efforts to convert temporary contract to permanent have been unsuccessful. Additional remarks provided. [1]
SAS	J. Strom Thurmond, SC & GA	City of Lincolnton, GA	Feasibility	WS	Hydro & WS	58 WS Act	GI	SAS accepts information from the sponsor to facilitate completion of a reallocation report. Lincolnton has hired an A-E firm to compile the data but SAS has not received any product or inquires about the process over the last couple of months. SAS has no idea of the amount of storage being requested. Additional remarks provided [2]				
	Savannah River Basin Comp.	States of GA and SC	Feasibility	F&WL, Drought, WQ		Sec. 414 WRDA 86 as amended by WRDA 2000	GI	4.5million			2009	
SAM	Lake Altoona, GA	City of Cartersville, GA	Study Complete	WS	Hydro	Support for Others	Support for Others	100,000	649,400	Unknown	Study Complete	Rpt. Recommends reall. 1,436 AF (3.6MGD)
Lakes and River Division												
LRP	Youghiogheny, PA	Municipal Auth. of Westmorland County, PA	Report under review at HQ	WS	Water Quality	Sec 219 PL 91-611	GI	400,000	6,823,300	24,780	Complete	
LRN	Center Hill	Not given	WS agreement under negotiation	WS	Hydro	58 WS Act	O&M	200,000	3,072,962	11,225	FY 05	
	Dale Hollow	Not given	WS agreement under negotiation	WS	Hydro	58 WS Act	O&M	200,000	681,327 (FY 04 cost)	4,614 (FY 04 \$)	FY 05	
	J. Percy Priest	Consolidated Utility District, TN	Recon.	WS	Hydro	58 WS Act	O&M	20,000	NA	NA	NA	
	Laurel	Not given	Study going	WS	Hydro	58 WS Act	O&M	200,000	1,384,655 (FY 04 Cost)	4,967 (FY 04 \$)	FY 05	
	Wolf Creek	Not given	Feasibility (no cost sharing)	WS	Hydro	58 WS Act	O&M	300,000	10,759,542 (FY 04 cost)	23,761 (FY 04 \$)	FY 06	
LRH	Delaware Lake, OH	City of Delaware, OH	Recon.	WS	FC	58 WS Act	O&M (assumed)	NA	4,503,007	20,510 Annually	NA	See Footnote [3]
	J. W. Flannagan	Flannagan Water Auth.	Recon.	WS	WQ	38 FCA	O&M	100,000	162,983	8,909 annually	Sept 04	
	Paint Creek	Paintsville	Initial App.	WS	WQ	NA	O&M	TBD	NA	NA	NA	[4]
Mississippi Valley Division												
MVS	Clarence Cannon	Mo. Dept. of Natural Resources & Clarence Cannon Wholesale Water Commission	On going	Envir. & Watershed protection for improvement of water Quality	NA	DNR / CCWWC	St. of MO and CCWWC	310,972	100%	Not determined	Not determined	See footnote [5]
	Lake Shelbyville	IL Dept. of Nat. Resources	Waiting notice of approval of PAS funding	WS, Envir. & Watershed planning	Not determined	Planning Assistance to States	Planning Assistance to States	210,000	105,000			See footnote [6]
MVK	Lake Greeson, TN	Nashville Rural Water Association	Feasibility	WS	Hydro & FC	58 WSA as amended	O&M	110,000	TBD	TBD	FY 05	
	Lake Ouachita	Mid-AR water Alliance	Feasibility	WS	Hydro & FC	58 WSA as amended	O&M	100,000	TBD	TBD	FY 05	

# Water Supply Database 2004 Survey

Dist	Project	Sponsor	Study Status	Study Project Purpose	If reallocated, from what purposes	Study Authority	Source of funding	Est. study cost (\$)	Estimated cost of project investment to be recovered (\$)	Estimated O&M (\$)	Est. date of study completion	Additional remarks
Northwestern Division												
NWP	Willamette River Basin	State of Oregon	Feasibility	WS, FC, Environmental	Multipurpose - irrigation	HR dated Sept 8, 1988	GI	2,900,000				See footnote [7]
NWK	Rathbun, IA	Rathbun Regional Water Association, Inc.	Water Supply agreement underway	WS, Environmental	Not given	Not given	O&M	15,000			Fall 2004	See footnote [8]
	Wilson, KS	Kansas Water Office	Feasibility	WS	Multipurpose	Not given	O&M	200,000				See footnote [9]
Southwestern Division												
SWL	Beaver, AR	Benton / Washington County Water Association	Feasibility	WS	Hydro.	58 WSA	O&M	40,000	163,000	15,000	Not given	
		Carroll – Boone Water District	Study Complete	WS	Hydro	Sec 521 WRDA 1999	O&M	40,000	335,930	30,000	Study Complete	
		Carroll – Boone Water District	Initial appraisal Recon.	WS	Hydro & FC	58 WSA	O&M	40,000	163,000	15,000	Not given	
	Greers Ferry, AR	City of Clinton	Study Complete	WS	FC	58 WSA	O&M	40,000	21,000	2,000	Study Complete	
		Mid-AR Water Alliance	Recon/Feasibility	WS	Not given	58 WSA	Cong. add	100,000				
		City of Heber Springs	Study Complete	WS	FC	58 WSA	O&M	40,000	33,000	3,000	Study Complete	
	Norfolk, AR	City of Mountain Home	Feasibility	WS	FC	58 WSA	O&M	40,000	25,500	3,500	Not given	
	Table Rock, MO	Outdoor Resorts of the Ozarks	Feasibility	WS	Not given	58 WSA	Not given	20,000				
SWF	Wright Patman	Sulphur River Basin Authority	Initial Appraisal / Recon.	WS, FC, Env.	FC & Sediment	HR 105-581, 16 Jun 98	GI	8,000,000				[10]
	[11]	Brazos River Authority	Initial Appraisal / Recon.	WS & FC		HR & SR 7 Jun 45 through 3 Nov 70	GI & Presidents Budget	3,500,000				
SWT	Broken Bow	Broken Bow Reallocation Study			Non-native trout fishery	Water Supply	Cong. add	650,000				See footnote [12]
	Denison Dam, Lake Texoma	Lake Texoma Reallocation	Water Supply Agreement under negotiation	WS		Hydropower	Cong. add	750,000	84,500,000		June 2006	
	John Redmond	John Redmond Reallocation Study		WS		Hydropower	Cong. add	1,250,000	0			See footnote [13]
South Pacific Division - None												

## Footnotes:

[1]. Wilmington District on the contact with City of Henderson. The City of Henderson began communication in May 1966 for water supply at John H. Kerr and entered into a “temporary water use” contract in May 1974. Efforts with the city to convert to a storage agreement have been unsuccessful to day. SAW recently obtained a one-year extension to finalize a storage agreement with the city with expectations to complete the action by Dec. 2004.

[2] Savannah District observations on reallocations.

The hydropower evaluation from the National Hydropower Center costs about \$30,000 per study. Probably another \$40,000 for the District to coordinate requirements with the sponsor, perform ITR, send out environmental assessment and answer public review and its comments etc.

A small reallocation costs almost as much to conduct as a large one. However, a large reallocation generates much more revenue per unit of effort than a small reallocation. As an example, the Santee Cooper powerplant reallocation generated about \$1,650,000 as a lump sum payment. McCormick, for approximately the same storage (but different yields from separate reservoirs) was assessed \$75,000 as a low-income community that gives them a price break of around 50%.

Managers are inherently unwilling to combine several sponsor current and projected future reallocations into the same report. They are only willing to spend the very minimum to get each individual reallocation done separately and seek the sponsor to provide as much data as possible.

In reality, there is not much savings in this latter approach because all work has to be checked and verified as compared to Corps staff knowing where the data comes from and how it is analyzed. Often we spend considerable time answering A-E firm questions. Sponsors have always had to provide justification for the need for storage and a life cycle cost analysis of the most likely alternative. Even if the sponsor hires an A-E to do the hydropower analysis, still the Hydropower Center must do their own analysis to verify the results so there is no cost savings in that arena.

Sponsors generally have no idea of the process in conducting a reallocation nor the timeframe it takes. However, the time is not always on the Corps clock. We often wait for sponsor input whether it is for environmental assessment data or their assessment of needs. Sponsors have their higher priority work and/ or funds issues just like we do.

Some managers proclaim reallocation studies cost more than revenues generated. In the case of small reallocations (say .2 mgd) combined with price breaks for low-income communities this could happen. All I can say is for the last reallocation that the Savannah District did, we received \$1,650,000 and all the reallocations we have ever done in the history of all three multipurpose projects combined has not come close to this amount!

[3] Huntington District, Delaware Lake Water Supply Study. The district completed a reconnaissance report for water supply storage at the lake in September 1998, which recommended providing 7 MGD to the City of Delaware, Ohio for municipal water supply purposes. However, no water storage agreement was consummated. The City of Delaware is currently utilizing a contractor to update the districts' 1998 study. If the study becomes approved, a water storage agreement with the city may be signed.

[4] Huntington District, Town of Paintsville study. This study is in the discussion stage, so values are subject to change and are not provided at this time.

[5] St. Louis District: Following is an abstract and list of project milestones.

### **The North Fork Project Of The Clarence Cannon Wholesale Water Commission**

For many communities, watershed management is a new concept. It transcends property lines, city and county limits, government jurisdictions, and most boundaries of traditional experience, interest and/or knowledge.

Planning and management contributes to a safe drinking water supply, the economic base, wildlife habitat, energy supply, and aesthetics. Effective decision-making reflects input from all sectors, promotes a sense of community among the stakeholders, and demonstrates the effectiveness of practices voluntarily implemented on both public and private lands.

The North Fork of Mark Twain Lake is the source of supply for the Clarence Cannon Wholesale Water Commission (CCWWC), purveyor of potable water to 20 rural water districts and communities in Northeast Missouri. This watershed covers 626 square miles or 400,640 acres. As a major water quality stakeholder, CCWWC sought funding through an Environmental Protection Agency (EPA) 319 grant to provide a structure for community networking and education for “decision makers” in the target watershed and the CCWWC membership communities and counties.

The North Fork Project is the only one of its kind in Northeast Missouri. The program development and delivery model is unique in that the CCWWC has contracted with University Outreach and Extension for an information/education specialist who works with the CCWWC Project Administrator and others to carry out the program of work.

Due to the size of the watershed, the North Fork Project has targeted only the North Fork of the Salt River. Since there are many formal efforts in place, the Project has been concentrating on information/education outreach leading to coordinating efforts and maximizing impacts of the projects at work in the area.

The North Fork Project was developed to provide local leadership with information, resources and training about water quality issues, the impact of the community on watershed health, and community-based efforts to plan and manage water quality issues in the watershed. The Project has also promoted the building of relationships and networks between local leaders, agricultural producers, landowners, and others so that watershed management programs will continue into the future.

The program of work is intended to accomplish these goals through a variety of workshops, training, and annual watershed conferences enhanced by quarterly newsletters. Participation and cooperation have grown steadily throughout the life of the Project. It has become evident that this effort is providing the needed opportunity for a variety of sectors to come together for continuing education, interaction, and problem solving. Since identified issues are common throughout neighboring watersheds, networking and outreach have effectively extended to the northeast quadrant of Missouri.

Two groups have been critical to the success of the Project: The Steering Committee and Technical Resource Panel. The Steering Committee is composed of agriculture producers, city and county officials, commodity groups, economic developers, landowners, lake managers, and water suppliers. The Technical Panel is made up of resource agencies having programs of work related to water quality. These groups meet regularly and serve as advisors on current and future projects.

As part of the total effort, the Steering Committee and Technical Resource Panel developed a Watershed Restoration Action Strategy (WRAS) for the North Fork Salt River. This document identified the following issue areas:

- **Agriculture/Natural Resource Management** (erosion and sedimentation, nutrient and pesticide runoff, livestock nutrient runoff, loss of forest, fish and wildlife resources, and maintenance of water quality for recreational use).
- **Community /Watersheds** (lake management issues, lack of watershed awareness and ownership, need for youth and adult /professional activities/curriculum/materials related to water quality).
- **Water/ Wastewater** (pollutants and public health issues, wastewater disposal, un-sewered communities, solid and hazardous waste, stormwater runoff, and increasing the knowledge base for wastewater treatment professionals).

## Appendix F: Water Supply Studies Currently Underway

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As a way to address the identified issue areas, working groups have been established to develop solutions to some of the problems stated in the WRAS. These working subgroups will implement one or more “on the ground” strategies to serve as a model and/or demonstration in each issue area. The steering committee and technical resource panel have made the following recommendations for each issue area:

- **Agriculture/Natural Resource Management:** (1) Install a model buffer strip project on Crooked and Otter Creeks to reduce erosion and sediment and improve aquatic and terrestrial wildlife habitat (2) Sponsor workshop(s) to educate landowners/producers and natural resource professionals about confined animal feeding operations (CAFOs), lagoon management, comprehensive nutrient management planning (CNMP), and design, installation and maintenance of riparian management systems.
- **Community /Watersheds:** (1) Establish a partnership with the US Corps of Engineers at Mark Twain Lake to integrate a water festival into the on-going environmental education day, (2) Sponsor a series of workshops for teachers on Projects WET, WILD, Learning Tree and the Leopold Educational Project. The task force will work with an area University to secure college credits for these workshops.
- **Water/ Wastewater:** (1) Assist a local un-sewered community to find a solution to their wastewater problem, (2) Sponsor workshop(s) on Phase II Stormwater regulations.

Each solution will integrate the appropriate water quality science (TMDLs, designated use, supporting research); involvement of local people in planning efforts; involvement and utilization of available local resources; on-going public education and publicity; demonstration or modeling activities; recognition for cooperators; and evaluation and reporting strategies.

As a way to implement the WRAS, the North Fork Project solicited support and commitment from a variety of partners who play pivotal roles in making local decisions that affect the public and/or who can help in transferring successful strategy models throughout the region. Following is a list of these partners:

**Cities/Towns of Moberly, Paris, Newark, Shelbina and Unionville:** These partners serve as working members of appropriate subgroups and advise on the feasibility and design of selected implementation strategies. They also serve to endorse these strategies and help to foster watershed planning, management, and stewardship throughout the region.

**County Commissions from Knox, Monroe, and Shelby County:** These partners serve as steering committee members and working members of the subgroup matching their interests and local needs. They will also become knowledgeable about issues related to their roles and responsibilities such as land use and planning and will have information available to allow them to make local decisions that affect county development, natural resource preservation, and watershed protection.

**Health Departments of Marion and Shelby County:** Staff members from these agencies have an essential role in the water/wastewater issue area. They serve as technical advisers, identify strategies that meet Health Department regulations, and help spread the model to other communities with similar problems.

**Special purpose entities including the Mark Twain Regional Council of Governments and the Mark Twain Solid Waste District:** Both of these partners are instrumental in helping local communities and organizations to find and utilize resources to solve specific problems. They are members of the steering committee and/or technical resource panel and serve on the appropriate working subgroups.

## Water Supply Database 2004 Survey

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**MASWCDs (Area 3), the Missouri Corn Growers Association, and the Soil and Water Conservation Districts from Knox, Macon, Monroe, and Shelby Counties:** Designated members serve on the steering committee and serve as working members of the subgroup on agriculture/natural resource management. They will play a major role in identifying appropriate BMPs, validating the impact, promoting field days and demonstration events, and increasing participation of local agriculture producers in implementing water quality BMPs.

**Public Entities including Department of the Army (Corps of Engineers – Mark Twain Lake), Department of Natural Resources-Northeast Region, Iowa State University, Midwest Assistance Program, Missouri Department of Conservation, Natural Resources Conservation Service, Northeast Missouri RC&D, University of Missouri (Enns Entomology Museum, Northeast Region University Outreach and Extension [UOE], UMC/UOE Water Quality Program), USDA-Rural Development:** These partners serve as both technical resource persons and as working members of the appropriate issue area subgroups. They will provide research-based information, organizational skills, and manpower as needed and will work with local groups to promote and implement the target project(s). In addition, they will coordinate programs to avoid duplication of services and maximize impacts of ongoing events and programs.

As these working subgroups move forward, The North Fork Project will continue to carry out additional activities such as production of a quarterly newsletter, development of workshops and training as identified by the working groups and/or annual watershed conferences to serve as a meeting ground, forum, and opportunity to recognize those involved in the above efforts and activities.

### North Fork Project Milestones

<u>Task</u>	<u>Responsible Parties</u>	<u>Target Date</u>	<u>Completion Date</u>
Organize Watershed Advisory Council (WAC)	Project Administrator Program Coordinator	Dec 2002	June 2003
Organize working subgroups by Issue Area	Project Administrator Program Coordinator WAC	March 2003	August 2003
Select projects and partners and develop program of work for implementation of solution(s) by issue area	WAC, working subgroups, Program Coordinator	June 03	Nov 2003
Begin implementation of program of work in each issue area	WAC, working subgroups, Program Coordinator	March 03	(1) Dec 03 (2) June 04 (3) June 05
Conduct three public events to showcase implementation strategies	WAC, working groups, Program Coordinator	(1) Dec 03 (2) June 04 (3) June 05	August 2005
Develop brochure to describe the North Fork Project, WAC and working subgroup projects	Program Coordinator WAC, working subgroups	Sept 03	Dec 2003
Develop and deliver information/education through six workshops and/or regional watershed conferences	WAC, working subgroups, Project Administrator Program Coordinator	March 03 July 03 March 04 July 04 March 05 July 05	August 2005



## Appendix F: Water Supply Studies Currently Underway

<u>Task</u>	<u>Responsible Parties</u>	<u>Target Date</u>	<u>Completion Date</u>
Prepare and disseminate nine media releases to publicize activities and progress of WAC and working groups	Program Coordinator	Three yearly 03, 04, and 05	August 2005
Develop and Distribute <i>Downstream</i> Newsletter	Program Coordinator WAC	Dec 1, March 1, June 1 and Sept 1 Of 2002, 03, 04 and 05	August 2005
Submit quarterly reports	Project Administrator Program Coordinator	Jan 15, April 15 July 15 Sept 15 Of 2003, 04 and 05	August 2005
Submit final report	Project Administrator Program Coordinator	August 2005	August 2005

[6] St. Louis District on contract with the State of Illinois at Lake Shelbyville. The contract with the State of Illinois requires the Corps to conduct a sedimentation study at Lake Shelbyville every 10 years. The last sedimentation study conducted at Shelbyville was over 16 years ago. Since that time, the State has issued contracts allocating all the available water supply from Lake Shelbyville. In 2004, the Corps submitted a grant for an erosion and sedimentation survey under the Illinois Department of Natural Resources Conservation 2000 program to be cost shared using Planning Assistance to States monies. The Study is estimated to be \$210.0 and if approved would be cost shared with IDNR 50/50. Depending on the outcome of the sedimentation survey, re-allocation negotiations will be pursued by IDNR.

[7]. Portland District on the Willamette Study. This study is currently on hold pending completion of ESA section 7 consultations for continued O&M of the Willamette Basin projects. Following receipt of the Biological Opinion, the study will be rescoped and reinitiated. The district will be looking at the “Kansas MOU” as a possible model for continuing work related to water supply in the Willamette Basin.

[8]. Kansas City District on the Rathbun Lake reallocation. Congressional language for conveying storage to RRWA pending WRDA passage will result in non-standard agreement.

[9]. Kansas City District on the Wilson Lake reallocation. Water Quality issues and treatment requirements.

[10] Ft. Worth District, Wright Patman study. The water supply portion of this multi-purpose study will include potential for reallocation at Lake Wright Patman. Funds for feasibility study were included in the President’s Budget for FY 00 through FY 04: however, no sponsor was identified until FY 04. Funds were not included in FY 05 President’s Budget.

[11] Ft. Worth District. A proposed Brazos System Assessment would include preliminary investigations of water availability in all nine Corps reservoirs in the Brazos River Basin. Study cost estimate is based on an assumption that detailed reallocation studies would be conducted for three of these reservoirs.

[12] Tulsa District on the Broken Bow Reallocation Study. Storage is being reallocated from uncontracted water supply storage to support a non-native trout fishery. This reallocation will also impact hydropower since hydropower was using the non-contracted storage until such time as it did become contracted. However, hydropower interests were successful in getting legislation passed that allows for a seasonal pool raise. Water supply and hydropower will lose revenues returned to the Treasury due to this reallocation.

[13] Tulsa District on the John Redmond Reallocation Study. This reallocation study is a result of uneven sediment distribution. The plan is to make an equitable redistribution of the sediment storage space due to sediment falling mainly in the conservation pool.

# Appendix G: Revenues Collected Vs Cost of Collection

## North Atlantic Division

Dist	Project	Sponsor	Total Storage (acre-feet)	Annual P&I \$	P&I already collected \$	OMRR&R \$	Other \$	Billings \$	Collections \$	Other \$	
NAE	Colebrook, CT	Hartford, CT Metro Water Dist.	30,700	204,221		0		75	25	0	
	East Brimfield, CT	American Optical Company	1,140	882		0		75	25	0	
	Littleville Lake, MA	City of Springfield, MA	9,400	106,023		0		75	25		
Total	3 projects	3 contracts	41,240	311,126	-	0	0	225	75	0	
NAP	Beltzville Lake, PA	Delaware RBC	27,880	253,498		278,588		130	35	0	
	Blue Marsh, PA	Delaware RBC	8,000	607,643		882		130	35	0	
Total	2 projects	2 contracts	35,880	861,141	-	279,470		260	70	0	
NAB	Cowanesque, PA	Susquehanna RBC	24,335		2,885,534 [1]	800,400	0	300	200	0	
	Curwensville, PA	Susquehanna RBC	5,360	339,473	4,878,000 [2]	39,101	0	300	200	0	
	Jennings Randolph, MD/WV	District of Columbia, Washington Suburban Sanitary Commission and Fairfax County Water Auth.		7,158							
				33,837							
									300	200	0
		For repayment the 40,995 AF of storage is jointly owned by:									
	District of Columbia		805,192		209,352	0					
	Fairfax Co. Water Auth		536,794		139,568	0					
	Washington Suburban Sanitary Commission		1,341,985		348,921	0					
Total	3 projects	4 contracts	70,690	3,023,444	7,763,534	1,537,342	0	900	600	0	
DIV Total	8 projects	9 contracts	147,810	4,195,711	7,763,534	1,816,812	0	1,385	745	0	

### Footnotes:

[1] For the Cowanesque project, the amount shown is the original annual investment cost. In December 2003, a large portion of the investment cost was paid off.

[2] For the Curwensville project, the investment cost was paid off in December 2003. The annual cost shown is the last value of the annual payment.

# Water Supply Database 2004 Survey

## South Atlantic Division

Dist	Project	Sponsor	Total Storage (acre-feet)	Revenues Collected				Collection Costs Incurred			
				Annual P&I \$	P&I already collected \$	OMRR&R \$	Other \$	Billings \$	Collections \$	Other \$	
SAW	B. Everett Jordan, NC	State of NC	45,800	151,741		50,000				4,000 [1]	
	Falls Lake, NC	City of Raleigh, NC	41,469	532,888		115,000				4,000 [1]	
	John H. Kerr, VA	City of Henderson, NC [2]	Virginia Beach, VA	-	-	-	-	-	-	-	12,000
		VA Dept. of Corrections		23		2,275,685	13,000				1,000 [1]
		Mecklenburg Cogeneration		600		5,639 + 171 O&M					1,000 [1]
	W. Kerr Scott, NC	County of Wilkes, NC & City of Winston-Salem, NC	33,000	34,673			185,000				1,000 [1]
<b>Total</b>	<b>4 projects</b>	<b>7 contracts</b>	<b>131,092</b>	<b>719,302</b>	<b>2,437,673</b>	<b>363,000</b>				<b>24,000</b>	
SAS	Hartwell, GA & SC	Anderson County Joint Municipal Water System, SC	24,620	28,800		Included in P&I		180	90		
		City of Lavonia, GA	127	0	21,500	116	180	90			
		Hart County, GA	1,827	0	335,000	1,376	180	90			
	Richard B. Russell, GA & SC	City of Elberton, GA	381	0	419,000	1,800	180	90			
		SC Public Service Co. (Santee Cooper), SC	491	0	1,615,200	2,329	180	90			
	J. Strom Thurmond GA & SC	City of Lincolnton, GA	92	300		Included in P&I		180	90		
		City of McCormick, SC	506	0	75,000	673	180	90			
		Savannah Valley Auth., SC	92	0	27,400	263	180	90			
		Columbia County, SC	1,056	0	313,000	2,166	180	90			
		City of Thompson, McDuffie County, GA	1,056	0	334,700	2,166	180	90			
		City of Lincolnton, GA	83	2,241		234	180	90			
		City of McCormick, SC	316	0	66,500	1,032	180	90			
City of Washington, GA	632	2,562		0	180	90					
<b>Total</b>	<b>3 projects</b>	<b>13 contracts</b>	<b>31,279</b>	<b>33,903</b>	<b>3,207,300</b>	<b>12,155</b>		<b>2,340</b>	<b>1,170</b>	<b>0</b>	
SAJ	Cerrillos, PR	Commonwealth of Puerto Rico	25,200	0 [3]	0	0	0	180	90		
<b>Total</b>	<b>1 project</b>	<b>1 contract</b>	<b>25,200</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>180</b>	<b>90</b>		
SAM	Allatoona, GA [4]	Cobb Co. Marietta Water Auth.	13,140	42,288	-	140,710		300	200	250 [5]	
		City of Cartersville	1,996	6,256	-	21,366		300	200	250 [5]	
		City of Cartersville	4,375	137,629	-	28,148		300	200	250 [5]	
	Carters, GA	City of Chatsworth	818	-	609,221	5,173	300	200	250 [5]		
	Okatibbee, MS	Pat Harrison WW District	13,100	49,972	-	24,000		300	200	0	
<b>Total</b>	<b>3 Projects</b>	<b>5 Contracts</b>	<b>33,429</b>	<b>236,145</b>	<b>609,221</b>	<b>219,397</b>		<b>1,500</b>	<b>1,000</b>	<b>1,000</b>	
<b>Div Total</b>	<b>11 Projects</b>	<b>26 Contracts</b>	<b>221,000</b>	<b>989,350</b>	<b>6,254,194</b>	<b>594,552</b>		<b>4,020</b>	<b>2,260</b>	<b>25,000</b>	

### Footnotes:

[1]. For the Wilmington District projects, the “Other” costs incurred under the collection costs, refer to costs incurred by the district’s RMO group for billings, collections & booking and reflect work which cannot be separated by specific project and is included in their overhead account.

[2]. John H. Kerr, City of Henderson contract. Temporary water use contract. Reallocation study compete and in negotiations with the City for 28, 477 acre-feet of storage space.

[3]. Cerrillos, PR. Determination of the correct annual investment repayment amount is being evaluated pursuant to congressional directive.

[4]. Mobile District, Allatoona Lake. The contracts for the three reallocations read “...percent of the storage allocated to power...” The formally referenced “power pool” is now considered, and referred to more broadly as the “conservation pool.”

[5] For maintenance of withdrawal records and periodic reporting.

## Appendix G: Revenues Collected VS Cost of Collection

### Lakes and Rivers Division

Dist	Project	Sponsor	Total Storage (acre-feet)	Revenues Collected				Collection Costs Incurred		
				Annual P&I \$	P&I already collected \$	OMRR&R \$	Other \$	Billings \$	Collections \$	Other \$
LRP	Berlin, OH	<b>Not Under Contract</b>	19,400		1,364,000			7,500		2,500
	Michael J. Kirwan, OH	<b>No authorized storage</b>	0							2,500
	Mosquito Creek Lake, OH	City of Warren, OH	11,000		569,234	81,371		7,500		2,500 [1]
	Stonewall Jackson Lake, WV	<b>Not Under Contract</b>	2,200							2,500
	Tygart, WV	City of Grafton, WV	Withdrawal 1.9 mgd					Water provided at no cost as City gave lands for project.		
<b>Total</b>	<b>5 projects</b>	<b>2 contracts</b>	<b>32,600</b>		<b>1,933,234</b>	<b>81,371</b>		<b>15,000</b>		<b>10,000</b>
LRH [2]	Alum Creek	Ohio Dept. of Natural Resource	79,200							
	John W. Flannagan	Dickerson Co. Water Auth.	2,125				225,000			
	North Fork of Pound	Town of Pound	62							
	Tom Jenkins	State of Ohio	5,690				69,000			
	Paint Creek	Highland County	721				151,000			
	Summersville	City of Summersville	468				81,000			
<b>Total</b>	<b>6 Projects</b>	<b>6 Contracts</b>	<b>88,266</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>526,000</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>
LRL	Barren River Lake, KY	Glasgow	681		23,433 [3]			0	0	0
		Scottsville	369		12,808 [4]			0	0	0
	Brookville, IN	State of Indiana	89,300		6,057,000 [5]			0	0	0
	Caesar Creek Lake, OH	State of Ohio	39,100	229,390		100,479		100	75	50
	Cave Run Lake, KY	Cave Run Water Comm.	536	72,896		621		100	75	50
	Green River Lake, KY	Campbellsville	3,460	3,607		290		150	75	225
		Columbia	855	0		1,657	14,091	75	75	50
	Monroe Lake, IN	State of Indiana	160,000		8,440,000 [6]			0	0	0
	Nolin Lake, KY	Edmonson Co. Water Dist.	98	1,793		267		75	75	50
	Patoka Lake, IN	State of Indiana	129,800		5,931,000 [7]			0	0	0
	Rough River Lake, KY	Leitchfield	120		4,122 [8]			0	0	0
Hardinsburg		150	0		2,950		75	75	50	
William H. Harsha, OH	State of Ohio	35,500	167,400		104,291		100	75	50	
<b>Total</b>	<b>10 projects</b>	<b>13 contracts</b>	<b>459,969</b>	<b>475,086</b>	<b>20,468,363</b>	<b>210,555</b>	<b>14,091</b>	<b>675</b>	<b>525</b>	<b>525</b>
LRN	Center Hill	Cookeville, TN	6,680	Resolving Issues				0	0	11,000 Bookings [8]
		Smithville, TN	401	0	54,536	624			Do	
		Riverwatch Golf, TN	131	6,074		204			Do	
	J. Percy Priest	LaVergne, TN	2,733		1,818,550	8,191			Do	
		Murfreesboro	5,084		3,051,429	15,236			Do	
		Consolidated Utility Dist., TN	3,007		1,804,609	9,011			Do	
		Consolidated Utility Dist., TN	1,367		820,277	4,096			Do	
		YMCA, TN	22	1,063		66			Do	
		Cedar Crest Golf, Ventures LLC, TN	96	4,954		275			Do	
<b>Total</b>	<b>2 projects</b>	<b>9 contracts</b>	<b>19,521</b>	<b>12,091</b>	<b>7,549,401</b>	<b>37,703</b>			<b>99,000</b>	
<b>DIV Total</b>	<b>23 Projects</b>	<b>30 Contracts</b>	<b>600,356</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>
<b>DIV Total w/o LRH</b>	<b>16 Projects</b>	<b>23 Contracts</b>	<b>492,690</b>	<b>487,177</b>	<b>29,950,998</b>	<b>329,629</b>	<b>14,091</b>	<b>15,675</b>	<b>525</b>	<b>109,525</b>

See next page for footnotes.

## Water Supply Database 2004 Survey

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### Footnotes:

[1] Pittsburgh District. No storage authorized but under a 1961 agreement, sponsor agreed to pay \$5.2 million. No payments were ever made, so they have no right to withdrawal. The “other” charge is for record keeping.

[1]. Nashville District. Data not submitted on revenues collected and collection costs.

[2] Louisville District. For the City of Glasgow, KY project, this includes \$22,300 investment cost already recovered, \$995 O&M and \$138 in RR&R. The OMRR&R were present worth and paid up front.

[3] Louisville District. For the City of Scottsville, KY project, this includes \$12,200 investment cost already recovered, \$525 O&M and 83 in RR&R. The OMRR&R were present worth and paid up front.

[4] Louisville District. For Brookville Lake, State of Indiana this includes \$5,693,000 investment cost, \$336,000 O&M and \$28,000 RR&R. The investment cost was taken from the contract and although close is probably not the actual dollar amount

[5] Louisville District. For Monroe Lake, State of Indiana this includes \$8,015,000 investment cost and \$425,000 for O&M paid prior to construction

[6] Louisville District. For Pakota Lake, State of Indiana this includes \$5,602,000 investment cost, \$287,000 O&M and \$42,000 RR&R. The investment cost was taken from the contract and although close is probably not the actual dollar amount

[7] Louisville District. For the City of Leitchfield, this includes \$3,648 investment cost already recovered, \$418 O&M and 56 in RR&R. The OMRR&R were present worth and paid up front.

[8] Nashville District. Booking cost is to cover the cost of setting up the agreements, determining O&M costs each year, and maintaining these agreements.

## Appendix G: Revenues Collected VS Cost of Collection

### Mississippi Valley Division

Dist	Project	Sponsor	Total Storage (acre-feet)	Revenues Collected / Year				Collection Costs Incurred / Yr		
				Annual P&I \$	P&I already collected \$	OMRR&R \$	Other \$	Billings \$	Collections \$	Other \$
MVR	Saylorville, IA	State of Iowa	14,900	123,518		9,455				100
Total	1 project	1 contract	14,900	123,518	-	9,455				100
MVS	Carlyle, IL	State of Illinois	32,692		3,635,000 [2]			[2]		
	Clarence Cannon Dam (Mark Twain L.), IL	Clarence Cannon Wholesale Water Commission	20,000 T 6,200 P 13,750 F	204,985		85,395			200	
	Lake Shelbyville, IL	State of Illinois	24,714		4,310,000 [2]			[2]		
	Rend Lake, IL	Illinois Dept. of Nat. Res.	109,000		10,000,000 [2]			[2]		
Total	4 projects	4 contracts	186,406	204,985	17,945,000	85,395		0	200	0
MVK	DeGray, AR	Ouachita River Water District	1,573	2,011		0	9,984 for lost hydro [4]	22	15	
		Ouachita River Water District	787	1,112		0	4,430 for lost hydro [4]			
		Ouachita River Water District	1,573	2,491		0	8,435 for lost hydro [4]			
		Not Under Contract	163,817				154,426 [5]			
	Enid, MS	LS Power Energy Ltd. Partnership	4,500	81,846		19,689		22	15	
	L. Ouachita, AR	N. Garland County RWD	1,575	8,501 [5]	101,005 [6]	60 [6]		22	15	
Total	3 projects	5 contracts	173,825	95,961	101,005	19,749	177,275	66	45	0
DIV Total	8 projects	10 contracts	375,131	424,464	18,046,005	112,599	177,275	66	245	100

**Footnotes:**

[1] Carlyle Lake: The 3/86 contract deferred payments from the state.

[2] Carlyle, Shelbyville and Rend: St. Louis District counsel advised that it was against the contract to bill for annual costs and at the present time there is no requirement to pay any more money.

[3] Rend Lake: The new contract relieves the state of requirements to pay for a period of time. The state to this date still does not pay.

[4] DeGray Lake: Water supply storage for M&I was authorized to be drawn from the reregulatory pool. ORWD wanted to withdraw water from the main pool (authorized for joint usage of hydropower and water supply) for economic reasons. In order to do this, they agreed to pay for hydropower foregone.

[5] DeGray Lake: Ouachita River Water Supply District is making a payment of \$154,426 annually for right of first refusal for the remaining (167,750 – 3,933) 163,817 acre–feet of storage in DeGray Lake that is not under contract. This payment is based on a April 4, 1988 MOA that states the ORWD shall pay annually the interest attributable to 120 mgd, which equals to 78.95% of the full amount of actual interest on the allocated water supply storage investment cost.

[6] L. Ouachita: Annual P&I and O&M costs were collected in Aug 03. Final P&I payment was made in Feb 04, so storage space is now paid off.

# Water Supply Database 2004 Survey

## Northwestern Division

Dist	Project	Sponsor	Total Storage (acre-feet)	Revenues Collected / Year				Collection Costs Incurred / Yr			
				Annual P&I \$	P&I already collected \$	OMRR&R \$	Other \$	Billings \$	Collections \$	Other \$	
NWS	Howard Hanson	Tacoma Public Utilities	22,400	Project modification underway. Construction expected to be complete in 2006							
Total	none										
NWP	Lost Creek, OR	City of Phoenix	400	10,643		6,617		120	60	20 bookings	
		City of Phoenix	600	26,036		9,926		120	60	20 bookings	
		City of Jacksonville	400	21,195		6,617		120	60	20 bookings	
		City of Shady Cove	3	Combined with contract signed 7/02 for billings and collections							
		City of Ashland	1,001	0	928,475	16,560		120	60	20 bookings	
		City of Talent	1,292	0	1,199,590	21,3743		120	60	20 bookings	
		City of Shady Grove	12	176		248		120	60	20 bookings	
		Not Under Contract	6,292								
Total	1 project	7 contracts	10,000	58,000	2,128,065	61,342		720	360	120	
NWO	Bowman Haley, ND	Bowman County Water District	19,780	9,780		NA	0	0	0	0	
	Garrison	Basin Electric Power Corp.	No storage	0	4,410,000	Contract under litigation. Basin Electric quit paying Capital and O&M costs a few years ago believing the amount charged was too high					
	Total	2 projects	2 contracts	19,780	9,780	4,410,000	0	0	0	0	
NWK	Clinton, Lake, KS	State of Kansas	89,200	168,754		103,245		413	443		
	Harry S. Truman Dam & Reservoir, MO	Henry County #3	172	3,483		93		413	443		
		HST PWSD #2	504			227		413	443		
		Not Under Contract	324								
	Hillsdale, Lake, KS	State of Kansas	53,000	163,597		33,987		413	443		
	Kanopolis Lake, KS	Kansas Water Office	12,500	234,391		26,730		413	443		
	Long Branch Lake, MO	City of Macon	24,400	47,240		49,948		413	443		
	Melvorn Lake, KS	Kansas Water Office	50,000			133,434		413	443		
	Milford Lake, KS	State of Kansas	300,000	98,555		76,860		413	443		
	Perry Lake, KS	State of Kansas	150,000	23,097		59,956		826	886		
	Pomona Lake, KS	RWD #3	230								
		RWD #3	270								
		Kansas Water Office	32,500	73,324		190,231		826	886		
	Rathbun Lake, IA	Rathbun Regional Water Association, Inc. (RRWA)	3,340			6,718		413	443		
		RRWA	3,340	18,645		8,332		413	443		
		Not Under Contract	8,320								
	Smithville Lake, MO	City of Plattsburg	11,500	12,627		4,979		413	443		
City of Smithville		8,000	42,943		6,477		413	443			
Not Under Contract											
Stockton Lake, MO	City of Springfield	50,000			17,736		413	443			
Tuttle Creek Lake, KS	Kansas Water Office	27,500			31,032		413	443			
	Kansas Water Office	8,650			9,740		413	443			
	Kansas Water Office	13,850			15,629		413	443			
Total	13 projects	20 contracts	923,300	886,656	0	775,354		8,260	8,860		
DIV Total	16 projects	29 contracts	953,080	954,436	6,538,065	836,696		8,980	9,220	120	

Footnote: [1] Kansas City District: Melvern, Pomona and Tuttle reservoirs: Reallocation the result of the 1985 Kansas MOU.



**Appendix G: Revenues Collected VS Cost of Collection**

**Southwestern Division - Little Rock District**

Dist	Project	Sponsor	Total Storage (acre-feet)	Revenues Collected / Year				Collection Costs Incurred / Yr		
				Annual P&I \$	P&I already collected \$	OMRR&R \$	Other \$	Billings \$	Collections \$	Other \$ [1]
SWL	Beaver, AR	Beaver Water District No. 1	108,195		3,676,901	96,860		475	475	1,000
		Carroll-Boone Water District	9,016		742,000	8,099		475	475	1,000
		Madison County Water District	3,945		416,475	3,482		475	475	1,000
		Benton/Washington County Water District	7,643		939,884	7,295		475	475	1,000
	Blue Mountain, AR	City of Danville	1,550		417,251	4,594		475	475	1,000
	Bull Shoals, AR	Marion County Regional Water System	880		84,979	0		475	475	1,000
	Dardanell Lake, AR New project	AP&L Nuclear One	0	0		10,600		475	475	1,000
	DeQueen, AR	Sevier County Rural Water District	610		249,500	8,195		475	475	1,000
		NUC	17,275							
	Dierks, AR	Marion Tri-Lakes Water District	10,100	44,100		3,115		475	475	1,000
	Gillham, AR	Gillham Lake Regional Water	20,800	167,204		1,956		475	475	1,000
	Greers Ferry, AR	City of Heber Sprigs	1,013		122,400			475	475	1,000
		Tannebaum Golf Course	90		11,072	104		475	475	1,000
		Clinton Water District	906		81,000	1,122		475	475	1,000
		Community Water System	225		20,260			475	475	1,000
		Community Water System Phase I	3,776		457,800			475	475	1,000
		Community Water System Phase II	4,283		561,174	5,403	111	475	475	1,000
		Thunderbird Golf Course	55			62		475	475	1,000
	Red Apple Inn & Country Club	65		8,427	83	15	475	475	1,000	
	Millwood Lake, AR	Southwest AR Water District	150,000		4,356,284	70,158		475	475	1,000
	Nimrod, AR	City of Plainview	33		1,200	14		475	475	1,000
		City of Plainview	110		21,967	248		475	475	1,000
	Norfolk, Lake, AR	Water Sewer District #3	2,400		65,467	2,718		475	475	1,000
Table Rock, MO New Project	King's River Country Club	95	979		46		475	475	1,000	
Dist Total	12 Projects	23 Contracts	343,065	212,283	12,234,041	224,154	126	10,925	10,925	23,000

Footnote: [1] For the Little Rock District, other consists of assisting water supply users, updating contracts and collecting usage reports.

# Water Supply Database 2004 Survey

## Southwestern Division - Ft. Worth District

Project	Sponsor	Total Storage (acre-feet)	Revenues Collected / Year				Collection Costs Incurred / Yr		
			Annual P&I \$	P&I already collected \$	OMRR&R \$	Other \$	Billings \$ [1]	Collections \$ [2]	Other \$ [3]
Aquilla, TX	Brazos River Auth., TX	33,600	12,573		63,848		8,000	4,000	2,000
Bardwell, TX	Trinity River Auth., TX	42,800	3,291		215,280		8,000	4,000	2,000
Belton, TX	Brazos River Auth., TX (2-contracts)	360,700	5,286		1,074,444		8,000	4,000	2,000
Benbrook, TX	City of Ft. Worth, TX	7,250	11,901		44,788		2,667	4,000	2,000
	Benbrook Water & Sewer Auth., TX '71	9,209	26,035		11,928		2,667	4,000	2,000
	Benbrook Water & Sewer Auth., TX '79	7,250	10,663						
	Tarrant Co., TX	48,792	188,185		40,326		2,667	4,000	2,000
Canyon, TX	Guadalupe-Blanco River Auth., TX	366,400	8,080		225,504		8,000	4,000	2,000
Cooper (Jim Chapman)	City of Irving, TX	100,625	363,415		79,919		2,667	667	
	N. Texas MWD, TX	100,625	363,415		79,919		2,667	667	
	Sulphur River MWD, TX	71,750	259,130		56,985		2,667	667	
Ferrell's Bridge (Lake of the Pines), TX	NE Texas MWD, TX	250,000	1,753		87,368		8,000	4,000	2,000
Granger, TX	Brazos River Auth., TX	37,900	12,865		30,973		8,000	4,000	2,000
Grapevine, TX	City of Grapevine, TX	1,250	855		38,348		4,000	2,000	1,000
	City of Grapevine, TX	25,000	55,047						
	City of Dallas, TX	85,000	0	1,433,026	52,348		4,000	2,000	1,000
	Dallas County Part Cities, TX	50,000	20,880						
Hords Creek, TX	City of Coleman, TX	5,780	0	100,000	0		0	0	0
Joe Pool, TX	Trinity River Auth., TX	164,335	58,035		2,000		8,000	4,000	2,000
Lavon, TX	NE Texas MWD, TX (2 contracts)	380,000	36,296		89,327		8,000	4,000	2,000
Lewisville, TX	City of Dallas, TX	415,072	3,927		164,031		4,000	2,000	1,000
	City of Denton, TX	20,928	0		7,490		4,000	2,000	1,000
Navarro Mills, TX	Trinity River Auth., TX	53,200	2,204		132,000		8,000	4,000	2,000
N. San Gabriel Dam (Georgetown)	Brazos River Auth., TX	29,200	1,022		242,287		8,000	4,000	2,000
O. C. Fisher, TX	Upper Colorado River Auth., TX	80,400	860		37,765		8,000	4,000	2,000
Proctor, TX	Brazos River Auth., TX	31,400	1,314		67,287		8,000	4,000	2,000
Ray Roberts, TX	City of Dallas, TX	685,818	0		120,358		4,000	2,000	1,000
	City of Denton, TX	240,962	0		42,287		4,000	2,000	1,000
Sam Rayburn, TX	City of Lufkin, TX	43,000	526		17,256		8,000	4,000	2,000
Somerville, TX	Brazos River Auth., TX	143,900	7,197		194,380		8,000	4,000	2,000
Stillhouse Hollow, TX	Brazos River Auth., TX	204,900	6,983		181,528		8,000	4,000	2,000
Town Bluff Dam (B.A. Steinhagen), TX	L. Neches Valley Auth., TX	94,200		2,000,000					
Waco, TX	Brazos River Auth., TX	91,074	21,035		108,384		4,000	2,000	1,000
	Brazos River Auth., TX	47,526							
	City of Waco, TX	13,026	13,026		15,486		4,000	2,000	1,000
Whitney, TX	Brazos River Auth., TX	50,000	1,181		23,093		8,000	4,000	2,000
Wright Patman, TX	Cities of Texarkana, TX & AR	9,800	7,000		0				
	City of Texarkana, TX -0019	201,900	49,980		4,891				
	City of Texarkana, TX -0103	Not yet implemented							
25 Projects	40 Contracts	4,604,571	1,553,960	3,533,026	3,551,828		192,002	96,198	48,000

### Footnotes:

- [1] Direct expense
- [2] Overhead expense that is time charged to actual billing.
- [3] Booking expense

## Appendix G: Revenues Collected VS Cost of Collection

### Southwestern Division - Tulsa District

Project	Sponsor	Total Storage (acre-feet)	Revenues Collected / Year				Collection Costs Incurred / Yr		
			Annual P&I \$	P&I already collected \$	OMRR&R \$	Other \$	Billing \$	Collectio ns & Booking s\$	Other [1] \$
Arcadia Lake, OK	Edmond PWA	23,090		44,043,644	83,190	[2]	2,000	2,000	5,000
Birch Lake, OK	<b>Not Under Contract</b>	7,630	0	0	0	0	0	0	0
Broken Bow, OK	OK Tourism & Recreation	60	2,122		484		0	0	0
	Broken Bow PWA	8,295	8,764		2,568	4,227	160	140	1,000
	<b>Not Under Contract</b>	144,145							
Canton Lake, OK	OK City Municipal Improvement Authority	90,000		2,806,884	250,440		250	250	1,000
Copan Lake, OK	Copan PWA	5,000	11,268		6,550		250	250	1,000
	<b>Not Under Contract</b>	2,500							
Council Grove, KA	Kansas Water Res. Board	24,400	52,200		149,369		1,000	1,000	2,000
	State of Kansas [3]	8,000		1,287,967	49,578				
Lake Texoma, Denison Dam OK/TX	City of Denison, TX	21,300		292,861	12,271		400	300	5,000
	Texas Power and Light	16,400	9,850		1,550		400	300	5,000
	Red River Auth of Texas	450		9,100	[4]		400	300	5,000
	Red River Auth of Texas	2,286		364,400	1,117		400	300	5,000
	N. Texas MWD	95,053		16,984,600	46,354		400	300	5,000
	Buncombe Creek View Addition	1		248	16		400	300	5,000
	Greater Texoma Utility Auth.	5,500		1,266,081	2,024		400	300	5,000
	Greater Texoma Utility Auth.	5,500		1,407,751	3,183		400	300	5,000
	City of El Dorado [5]	142,800	441,354	11,050,400	83,547		1,000	1,000	2,000
Elk City, DA	Kansas Water Res. Board	24,300	77,272		9,298		1,000	1,000	1,500
	State of Kansas [3]	10,000		1,150,580	10,702		1,000	1,000	1,500
Eufaula, OK	Haskell County Water Company	400	1,242		561		1,000	1,000	1,000
	Pittsburg County Water Authority	850	2,709		745		1,000	1,000	1,000
	Haskell County RWD No. 1	50		4,706 [6]			1,000	1,000	1,000
	Pittsburg County RWD No. 4	50	159		76		1,000	1,000	1,000
	Muskogee County RWD No. 3	100	319		137		1,000	1,000	1,000
	Porum Public Works Authority	125		11,786 [6]			[8]	[8]	1,000
	Lakeside Water Company, Inc.	20		1,970 [6]			[8]	[8]	1,000
	Sherwood Forrest Company	60		5,880 [6]			[8]	[8]	1,000
	Haskell County RWD No. 3	25		2,780 [6]			[8]	[8]	1,000
	Krebs Utility Authority	560	1,019		394		1,000	1,000	1,000
	McIntosh County Rural WGS District No. 8	1,500	1,138		424		1,000	1,000	1,000
	Porum public Works Authority	400	1,052				1,000	1,000	1,000
	Pittsburg County Public Works Authority	490	1,159		424		1,000	1,000	1,000
	Longtown RWD & SD #1	1,000	4,857		424		1,000	1,000	1,000
	Public Service Company of Oklahoma	100	286 [7]		333 [7]		1,000	1,000	1,000
	McAlester Public Works	6,250	31,859		20,443		1,000	1,000	1,000
	Bristow Point Property Owners Association	15		2,208 [6]			[8]	[8]	1,000
	Warner Utilities Authority	220		32,091 [6]			1,000	1,000	1,000
	Twin Rivers Estates, Inc.	9	1,097		18		[8]	[8]	1,000
	Bridgeport Dunes Condominium Homeowners Association, Inc.	5		724 [6]			[8]	[8]	1,000
	Pittsburg County RWD #14	320		40,090	1,046		1,000	1,000	1,000
	Duchess Creek Mobile Home	4		649 [6]			[8]	[8]	1,000
	Warner Utilities Authority	475		68,536	9,665		1,000	1,000	1,000
McIntosh County RWD & SWM Dist. #2	1,000		149,569	3,273		1,000	1,000	1,000	
Juniper Water Company	12,040		1,981,186	24,508		1,000	1,000	1,000	
<b>Not Under Contract</b>	29,932								
Fort Supply, OK	<b>Not Under Contract</b>	400							
Heyburn, OK	Creek County RWD #3	300	2,224		3,655		1,000	1,000	1,000
	Creek County RWD #3	600		34,374	13,450				
	Creek County RWD #3	1,100		73,121	5,194				
Hugo, OK	Hugo Municipal Authority	20,520	5,031		4,248		2,000	2,000	4,000
	Antlers Public Works Auth.	920	1,113		1,270		2,000	2,000	4,000
	Western Farmers Cooperative	23,450	13,734		15,809		2,000	2,000	4,000
	Pushmataha County RWD #3	513		56,726	1,339		2,000	2,000	4,000
	<b>Not Under Contract</b>	2,197							
Hulah, OK	City of Bartlesville	15,400	21,800		16,351		2,000	2,000	2,500
	Hulah Water District	100		4,000	814		1,000	1,000	1,000
	City of Bartlesville, Mod	2,200	3,036		2,336		1,000	1,000	1,000
	City of Bartlesville	2,100	4,880		3,655		1,500	1,500	2,000
John Redmond	Kansas Water Res. Board	34,900	157,580		195,206		1,000	1,000	1,500
	State of Kansas [3]	10,000		832,485	11,390		1,000	1,000	1,500

# Water Supply Database 2004 Survey

## Southwestern Division - Tulsa District (continued)

Project	Sponsor	Total Storage (acre-feet)	Revenues Collected / Year				Collection Costs Incurred / Yr			
			Annual P&I \$	P&I already collected \$	OMRR&R \$	Other \$	Billings \$	Collectio ns \$	Other \$	
Kaw	Oklahoma Gas & Electric	39,350	265,148		13,358		2,000	2,000	4,000	
	Kaw Reservoir Authority	conduit	15,569		0		2,000	2,000	4,000	
	Stillwater Utility Authority	51,450	60,210		5,059		2,000	2,000	3,000	
	Kaw Tribe	0		265 [9]	[9]	1,000	1,000	4,000		
	Otoe-Missouria	183		52,652	153		1,000	1,000	1,000	
	<b>Not Under Contract</b>	80,217								
Keystone	Public Service Co. of OK	18,000	40,752		12,364		2,000	2,000	4,000	
	<b>Not Under Contract</b>	2,000								
Marion	Kansas Water Res. Board	38,300	59,974		44,226		2,000	2,000	6,000	
	Kansas Water Office [3]	12,500		2,187,785	73,709		2,000	2,000	6,000	
Oologah	City of Tulsa	285,450	382,552		254,795		5,000	4,000	8,000	
	City of Tulsa	conduit	16,518		0		1,000	1,000	1,000	
	City of Collinsville	6,670	9,159		5,957		2,000	2,000	4,000	
	Public Service Co. of OK	20,990	27,651		18,732		2,000	2,000	4,000	
	Nowata Co. RWD #1	200	290		183		1,000	1,000	1,000	
	Rogers Co. RWS #4	1,590	2,142		1,420		2,000	2,000	4,000	
	Rogers Co. RWS #3	5,960	8,203		5,319		2,000	2,000	4,000	
	Town of Chelsea	1,530	851		600		2,000	2,000	2,000	
	City of Claremore	445	691		556		2,000	2,000	4,000	
	Washington Co. RWD #3	4,170	11,676		3,728		2,000	2,000	4,000	
	Claremore Public Works	6,230	29,967		5,566		2,000	2,000	4,000	
		<b>Not Under Contract</b>	9,365							
	Pat Mayse	City of Paris	109,600	49,826		36,394		2,000	2,000	4,000
<b>Not Under Contract</b>		0								
Pearson-Skubitz Big Hill	State of Kansas	25,700	119,390		65,294		2,000	2,000	5,000	
Pine Creek	Weyerhaeuser	28,800	62,123		81,598		2,000	2,000	5,000	
	<b>Not Under Contract</b>	20,600								
Sardis	Oklahoma Water Res. Board	297,200	[10]		[10]	[10]	1,000	1,000	8,000	
	Oklahoma Water Res. Board	intake	[10]				500	1,000	1,000	
Skiatook	Osage Co. RWS #15	2,000	future use		2,440	22,622 [11]	2,000	2,000	4,000	
	Osage Co. RWS #15	conduit	31,570		0		2,000	2,000	4,000	
	Sand Springs Municipal Auth.	6,740	90,672		8,231		2,000	2,000	4,000	
	Sapulpa Municipal Authority	4,490	30,492		2,742		2,000	2,000	4,000	
	Skiatook PWA	2,018	26,900		2,466		2,000	2,000	4,000	
	Skiatook PWA	2,743	73,558		3,351		2,000	2,000	4,000	
	Sapulpa Municipal Authority	4,500	143,535		5,494	4,227	2,000	2,000	4,000	
		<b>Not Under Contract</b>	40,409							
Tenkiller	East Central Oklahoma Water Authority	300	609		533		1,000	1,000	1,000	
	Cherokee Co. RWD #13	100	72		36		2,000	2,000	5,000	
	Cherokee Co. RWD #2	100	76		36		2,000	2,000	3,000	
	Sequoyah Co. Water Ass.	2,200		44,383	1,632		4,000	4,000	6,000	
	Sequoyah Fuels Corporation	14,000	9,719		7,043		4,000	4,000	8,000	
	Summit Water Inc.	140		4,330		1,512	1,000	1,000	1,000	
	Paradise Hills, Inc.	220		6,039	1,599		1,000	1,000	1,000	
	Lake Tenkiller Association	200		4,514	4,208		1,000	1,000	1,000	
	Tenkiller Water Company	38		3,656	501		2,000	2,000	2,000	
	Stepp and Ross land Company	17	135		14		1,000	1,000	3,000	
	Mongold Water System	5		1,022	145		1,000	1,000	1,000	
	Tenkiller Aqua Park	17	172		14		1,000	1,000	2,000	
	Gore Public Works Authority	480	4,354		234		2,000	2,000	2,000	
	Tenkiller Water Company	34		3,814	447		2,000	2,000	2,000	
	Pettit Bay Water Association	5		558	60		1,000	1,000	1,000	
	Fin and Feather Resort	12		1,451	179		1,000	1,000	1,000	
	Sixshooter Water System	2		223	33		1,000	1,000	1,000	
	The Dutchman's Cabins	6		693	82		1,000	1,000	1,000	
	Bill Richardson	1		116	16		1,000	1,000	1,000	
	Indian Hills Estate Company	3		350	52		1,000	1,000	1,000	
	Charles Willige	2		286 [6]			1,000	1,000	1,000	
	JR and ML Mosteller	2		233	35		1,000	1,000	1,000	
	Tenkiller Water Company	30		4,350 [6]			1,000	1,000	3,000	
	Woodhaven (Tenkiller Water Company, Inc.)	15		2,166 [6]			1,000	1,000	1,000	
	Burnt Cabin RWD, Inc.	12		1,311 [6]			1,000	1,000	1,000	
	Sunny Heights Water System	10		1,372 [6]			1,000	1,000	1,000	
	Greenleaf Nursery Company	2,120	5,240 [12]		271 [12]		2,000	2,000	3,000	
	Greenleaf Nursery Company	300	823 [12]		259 [12]		2,000	2,000	3,000	
	Tenkiller Development Company	3		415 [6]			1,000	1,000	1,000	
	Cherokee Co., RWD #13	132	1,339		65		4,000	4,000	6,000	
	Pettit Mountain Water Ass.	10		643 [6]			1,000	1,000	1,000	
		<b>Not Under Contract</b>	4,884							

## Appendix G: Revenues Collected VS Cost of Collection

### Southwestern Division - Tulsa District (continued)

Project	Sponsor	Total Storage (acre-feet)	Revenues Collected / Year				Collection Costs Incurred / Yr		
			Annual P&I \$	P&I already collected \$	OMRR&R \$	Other \$	Billings \$	Collecti ons \$	Other \$
Toronto	City of Toronto	265	750		815		1,000	1,000	1,000
	City of Toronto	135	1,296		416				
Waurika	Waurika Project Master Conservation District	41,800	183,405		47,535		5,000	4,000	8,000
	Conveyance Facilities / Waurika Project Master Conservation Dist. (3-contracts)	0	1,846,984		0		15,000	12,000	24,000
Wister	Heavener Utility Authority	1,600	1,436		924		2,000	2,000	8,000
	Poteau Valley Improvement Authority	4,800	4,304		11,727		2,000	2,000	3,000
	AES Shady Point, Inc.	7,253	199,723		6,643		2,000	2,000	5,000
	Not Under Contract	347							
<b>TOTALS</b>									
<b>28 Projects</b>	<b>127 contracts [13]</b>		<b>4,678,980</b>	<b>86,290,024</b>	<b>1,788,718</b>	<b>33,588</b>	<b>175,860</b>	<b>173,540</b>	<b>340,500</b>

Footnotes:

[1] For Tulsa District, these funds are used to assist water supply users, update contracts and collecting usage reports.

[2] Arcadia Lake. Total of \$8,933,751.76 in interest from the end of the 10-year interest free period not paid and interest accruing on that. May be resolved if WRDA 2004 is passed.

[3] These four reallocations and contracts were the result of the Kansas Memorandum of Understanding.

Council Grove 8,000 AF  
 Elk City 10,000 AF  
 John Redmond 10,000 AF  
 Marion 12.500 AF

[4] Denison Dam, Red River Authority of Texas. O&M payment included in annual payment as a proportionate share for 50-years from effective date of contract.

[5] El Dorado. This contract is subdivided into 3-increments: (1) 39,793, (2) 11,666 and (3) 19254. Cost for increment (1) has already been repaid.

[6] Includes 50 years of present worth O&M.

[7] Eufaula, Public Service Co. of Oklahoma. User pays interest on future use storage and joint-use O&M.

[8] Eufaula. No annual cost since user has paid investment costs and present worth O&M.

[9] Kaw. Lump sum investment and O&M for a 5-year contract.

[10] Sardis, Okla. Water Resources Board. The following costs are not being repaid due to litigation:

Investment: \$923,516  
 O&M: \$150,609  
 Late fees: \$4,597,797.

[11] Skiatook, Osage County RWD #15. Interest accruing on future use storage that is paid yearly.

[12] Tenkiller, Greenleaf Nursery Company. Irrigation contract, pays annually.

[13] Includes seven contracts for conduits:

Kaw Lake, Kaw Reservoir Authority  
 Oologah Lake, City of Tulsa  
 Sardis Lake, Oklahoma Water Resources Board  
 Skiatook Lake, Osage Co. RWS #15  
 3-contracts with the Waurika Project Master Conservation District

## Water Supply Database 2004 Survey

### Southwestern Division - District Summary

Dist	Number of Projects	Number of Contracts	Total Storage (acre-feet)	Revenues Collected / Year				Collection Costs Incurred / Yr		
				Annual P&I \$	P&I already collected \$	OMRR&R \$	Other \$	Billings \$	Collections \$	Other \$
SWL	12	23	343,065	212,283	12,234,041	224,154	126	10,925	10,925	23,000
SWF	25	40	4,604,571	1,553,960	3,533,026	3,551,828	0	192,002	96,198	48,000
SWT	28	[1] 124	2,127,980	4,678,980	86,290,024	1,788,718	33,588	175,860	173,540	340,500
<b>TOTAL</b>	<b>65</b>	<b>187</b>	<b>7,075,616</b>	<b>6,445,223</b>	<b>102,057,091</b>	<b>5,564,700</b>	<b>33,714</b>	<b>378,787</b>	<b>280,663</b>	<b>411,500</b>

Footnote: [1] Comprised of 120 storage agreements plus 4 agreements just for conduits.

### South Pacific Division

Dist	Project	Sponsor	Total Storage (acre-feet)	Revenues Collected / Year				Collection Costs Incurred / Yr		
				Annual P&I \$	P&I already collected \$	OMRR&R \$	Other \$	Billings \$	Collections \$	Other \$
SPK	Hew Hogan, CA	Stockton and East San Joaquin Water District, CA and Calaveras County, Water Dist, CA	30,000	Recovered by Bureau of Rec.		251,800				3,750 (avg.) [1]
SPN	Coyote Valley Dam (Lake Mendocino), CA [2]	Sonoma County Water Agency, CA	70,000	None	5,600,000	0	0	0	0	0
	Warm Springs Dam (Lake Sonoma), CA	Sonoma County Water Agency, CA	212,000	3,255,165		250,000	0	500	0	0
SPA	Abiquiu, NM	City of Albuquerque	170,900	Auth. At no cost to locals		61,076				
DIV Total	4 Projects	4 Contracts	482,900	3,225,165	5,600,000	562,876		500		3,750

Footnotes:

[1]. For New Hogan the district prepares a 5-year estimate for O&M and sends a bill each year based on the estimate. The district answers questions on the project. At end of billing period the costs are adjusted to actual costs. The district collects the funds and remits them to the Treasury under terms of the BOR contract. District costs per year run from \$2500 to \$5000.

[2] For Coyote Valley Dam there is nor record of the agreement between Sonoma County Water Agency (SCWA) and the Federal Government. For this project, there is no billing to the SCWA. It appears that SCWA contributed a lump sum of \$5.6 million for conservation benefits. There are no collection costs incurred for Coyote Valley Dam.

## Appendix H: Type of Sponsors and Storage Space

Office	State	County	City	Industry	Private	Other	Not under Contract	Total
<b>North Atlantic Division</b>								
# Contracts	0	2	2	1	0	4 [1]	0	9
AF Storage	0	40,995	40,100	1,140	0	65,575	0	147,810
<b>South Atlantic Division</b>								
# Contracts	6	5	13	1	0	1 [2]	0	26
AF Storage	84,706	41,699	60,995	600	0	33,000	0	221,000
<b>Lakes and Rivers Division</b>								
# Contracts	7	4	14	0	5	0	0	30
AF Storage	538,590	3,480	32,063	0	4,623	0	21,600	600,356
<b>Mississippi Valley Division</b>								
# Contracts	5	4	0	1	0	0	0	10
AF Storage	201,306	5,508	0	4,500	0	0	163,817	375,131
<b>Northwestern Division</b>								
# Contracts	10	5	11	0	3	0	0	29
AF Storage	737,200	20,956	97,608	0	6,680	0	90,636	953,080
<b>Southwestern Division - Little Rock District</b>								
# Contracts	0	10	5	1	7	0	0	23
AF Storage	0	313,589	3,612	0	8,589	0	17,275	343,065
<b>Southwestern Division - Ft. Worth District</b>								
# Contracts	21	1	17	1	0	0	0	40
AF Storage	2,539,710	48,792	1,921,869	94,200	0	0	0	4,604,571
<b>Southwestern Division - Tulsa District</b>								
# Contracts	15	20	35	26	19	5 [3]	0	120 [4]
AF Storage	534,910	16,000	829,771	186,699	138	106,236	454,226	2,127,980
<b>Southwestern Division – District Summary</b>								
# Contracts	36	31	57	28	26	5	0	180 [5]
AF Storage	3,074,620	378,381	2,755,252	280,899	8,727	106,236	471,501	7,075,616
<b>South Pacific Division</b>								
# Contracts	0	3	1	0	0	0	0	4
AF Storage	0	312,000	170,900	0	0	0	0	482,900
<b>TOTAL</b>								
# Contracts	64	54	98	31	34	10	0	291 [5]
AF Storage	4636,422	803,019	3,156,918	287,139	20,030	204,811	747,554	9,855,893

Footnotes:

[1] NAD, 4 contracts with Federal/Interstate.

[2] SAD, 1 contract with County/City.

[3] SWT, 3 contracts with corporations and 2 with Federal/Tribe.

[4] SWT, the district also has 4-contracts with states just for water conduits.

[5] SWD and TOTAL, plus 4-contracts just for water conduits.

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# Appendix I: Project Yields

Dist	Project	Storage Space (acre-feet)	Yield [1] [2]			
			CFS	MGD	AF/Year	Dependability
<b>North Atlantic Division</b>						
NAE	Colebrook, CT	30,700	42.41	27.41	<b>30,700</b>	Not given
	East Brimfield, MA	1,140	1.57	1.02	<b>1,140</b>	Not given
	Littlefield, MA	9,400	12.98	8.39	<b>9,400</b>	Not given
NAP	Beltzville, PA	27,880	<b>65</b>	42	47,058	70% gross firm yield based on 50-years inflow data
	Blue Marsh, PA	8,000	23.83	<b>15.4</b>	1,725	Not given
NAB	Cowanesque, MD	24,335	105	<b>68</b>	76,017	Drought of record
	Curwensville, PA	5,360	27.54	<b>17.8</b>	19,939	Drought of record
	Jennings Randolph, MD&VA	40,995	133.1	<b>86</b>	96,332	Drought of record
<b>South Atlantic Division</b>						
SAW	B. Everet Jordan, NC	45,800	154.7	<b>100</b>	<b>112,000</b>	Drought of record
	Falls Lake, NC	41,469	38.8	<b>60</b>	<b>67,000</b>	Drought of record
	John H. Kerr, NC&VA	10,823	12.9	<b>20</b>	<b>22,400</b>	Drought of record
	W. Kerr Scott, NC	33,000	69.6	<b>45</b>	<b>50,000</b>	Average yield
SAS	Hartwell, GA	26,574	58.52	<b>37.8</b>	<b>42,364</b>	Drought of record
	J. Strom Thurmond, GA	3,833	18.78	<b>12.13</b>	<b>13,594</b>	Drought of record
	Richard B. Russell, GA	872	24.54	<b>15.85</b>	<b>17,764</b>	Drought of record
JAX	Cerrillos, PR	25,200	33.88	<b>21.9</b>	<b>24,544</b>	Average yield
SAM	Allatoona, GA	19,511	79.31	<b>51.26</b>	<b>46,819</b>	31 month low flow 7/39 – 1/42
	Carters	818	3.09	<b>2.0</b>	<b>2,240</b>	50 yr low flow
	Okatibbee Lake, MS	13,100	38.68	<b>25</b>	<b>28,000</b>	NA
<b>Lakes and River Division</b>						
LRP	Berlin, OH	19,400	52.60	<b>34</b>	38,085	1930s drought – firm yield
	Michael J. Kirwan, OH	52,900	73.1	113.1	<b>52,900</b>	1930s drought – firm yield
	Mosquito Creek, OH	11,000	24.8	<b>16</b>	17,922	1930s drought – firm yield
	Stonewall Jackson, WV	2,200	2.9	<b>1.9</b>	2,1289	1930s drought – firm yield
LRH	Alum, OH	29,700	61.89	<b>40</b>	<b>44,800</b>	NA
	John W. Flannagan, VA	2,125	4.64	<b>3</b>	<b>3,360</b>	NA
	North Fork of Pound, VA	29,700	17.02	<b>11</b>	<b>12,231</b>	NA
	Paint OH	721	1.55	<b>1</b>	<b>1,120</b>	NA
	Summersville,	468	3.09	<b>2</b>	<b>2,240</b>	NA
	Tom Jenkins Dam, OH	5,690	NA	NA	NA	NA
LRL	Barren River Lake, KY	1,050	27.85	<b>18</b>	20,163	Drought of record
	Brookville, IN	89,300	127.65	<b>82.5</b>	92,412	Average yield
	Caesar, KY	39,100	57.25	<b>37</b>	41,445	Average yield
	Cave Run, KY	536	3.09	<b>2</b>	2,240	Drought of record
	Green River, KY	4,315	11.60	<b>7.5</b>	8,401	Drought of record
	Monroe, IN	160,000	201.14	<b>130 (est.)</b>	145,618	Average yield
	Nolin Lake, KY	98	1.55	<b>1</b>	1,120	Drought of record
	Patoka, IN	129,800	116.04	<b>75</b>	84,011	Average yield
	Rough River Lake, KY	270	3.87	<b>2.5</b>	2,800	Drought of record
	William H. Harsha Lake, OH	35,500	57.25	<b>37</b>	41,445	Average yield
LRN	Center Hill	9,401	43.55	<b>28.15</b>	<b>31,557</b>	Drought of record
	J. Percy Priest	17,433	98.68	<b>63.78</b>	<b>71,497</b>	Drought of record

## Water Supply Database 2004 Survey

Dist	Project	Storage Space (acre-feet)	Yield [1] [2]			Dependability
			CFS	MGD	AF/Year	
<b>Mississippi Valley Division</b>						
MVR	Saylorville, IA	14,900	<b>75</b>	48.47	54,298	99%
MVS	Carlyle Lake, IL	32,692	0.26	<b>0.17</b>	<b>190</b>	Average yield
	Clarence Cannon, MO	20,000	27.85	<b>18.0</b>	<b>19,730</b>	Not given
	Lake Shelbyville, IL	24,714	26.30	<b>17.0</b>	<b>19,043</b>	50 Yr drought
	Rend Lake, IL	109,000	61.89	<b>40.0</b>	<b>44,807</b>	Not given
MVK	DeGray, AR	3,933	3.87	<b>2.5</b>	2,802	Firm yield
	Enid, MO	4,500	17.69	<b>10.9</b>	12,834	Firm yield
	L. Ouachita, AR	1,575	1.55	<b>1.0</b>	1,120	Firm yield
<b>Northwestern Division</b>						
NWS	none					
NWP	Lost Creek, OR	10,000	13.81	8.93	<b>10,000</b>	100 %
NWO	Bowman-Haley, ND	21,900	4.14	2.68	<b>3,000</b>	Not given
	Garrison, ND	No storage	<b>23.48</b>	<b>15.16</b>	<b>17,000</b>	100%
NWK	Clinton, KS	89,200	26.77	<b>17.30</b>	<b>19,400</b>	Firm yield for sedimentation in 2040 for a 50-yr. drought (2% chance)
	Harry S. Truman, MO	1,000	3.68	<b>2.38</b>	<b>2,670</b>	Firm yield, 1994 conditions, 50-yr drought (2% chance)
	Hillsdale, KS	53,000	23.52	<b>15.20</b>	<b>17,100</b>	Firm yield for sedimentation in 2040 for a 50-yr. drought (2% chance)
	Kanopolis, KS	12,500	19.93	<b>12.88</b>	<b>14,500</b>	Firm yield for sedimentation in 2040 for a 50-yr. drought (2% chance)
	Long Branch, MO	24,400	10.99	<b>7.10</b>	<b>7,960</b>	Firm yield, 1988 conditions, 50-yr drought (2% chance)
	Melvorn, KS	50,000	11.14	<b>7.2</b>	<b>8,100</b>	Firm yield for sedimentation in 2040 for a 50-yr. drought (2% chance)
	Milford, KS	300,000	171.74	<b>111.0</b>	<b>124,500</b>	Firm yield for sedimentation in 2040 for a 50-yr. drought (2% chance)
	Perry, KS	150,000	11.76	<b>74.60</b>	<b>83,700</b>	Firm yield for sedimentation in 2040 for a 50-yr. drought (2% chance)
	Pomona, KS	33,000	11.45	<b>7.40</b>	<b>8,300</b>	Firm yield for sedimentation in 2040 for a 50-yr. drought (2% chance)
	Rathburn, IA	15,000	7.10	<b>4.59</b>	<b>5,200</b>	Firm yield, 1982 conditions, 50-yr drought (2% chance)
	Smithville, MO	95,200	44.56	<b>28.8</b>	<b>32,400</b>	Firm yield, 1989 conditions, 50-yr drought (2% chance)
	Stockton, MO	50,000	46.42	<b>30.0</b>	<b>33,700</b>	Firm yield, 1987 conditions, 50-yr drought (2% chance)
	Tuttle Creek, KS	50,000	89.48	<b>57.83</b>	<b>64,882</b>	Firm yield for sedimentation in 2040 for a 50-yr. drought (2% chance)

Appendix I: Project Yields

Dist	Project	Storage Space (acre-feet)	Yield [1] [2]			Dependability
			CFS	MGD	AF/Year	
<b>Southwestern Division</b>						
SWL	Beaver, AR	128,799	214.29	<b>138.5</b>	155,140	Not given
	Blue Mountain, AR	1,550	3.09	<b>2.0</b>	2,240	Not given
	Bull Shoals, AR	880	1.55	<b>1.0</b>	1,120	Not given
	Dardanell Lake, AR	0	<b>22.0</b>	14.21	15,927	Not given
	DeQueen, AR	610	1.16	<b>0.75</b>	840	Not given
	Dierks, AR	190	0.39	<b>0.25</b>	280	Not given
	Gillham Lake, AR	200	0.63	<b>0.41</b>	459	Not given
	Greers Ferry, AR	10,413	13.74	<b>8.88</b>	9,947	Not given
	Millwood Lake, AR	44,554	121.77	<b>78.7</b>	88,155	Not given
	Nimrod, AR	143	0.65	<b>0.33</b>	370	Not given
	Norfolk, AR	2,400	1.55	<b>1.0</b>	1,120	Not given
	Table Rock, MO	95	Surplus water contract, yield not given.			
SWF	Aquilla, TX	33,600	14.96	<b>9.67</b>	10,832	Not given
	Bardwell, TX	42,800	17.41	<b>11.25</b>	12,602	Not given
	Belton, TX	360,700	162.0	<b>104.7</b>	117,279	Not given
	Benbrook, TX	72,500	10.06	<b>6.5</b>	7,281	Not given
	Canyon, TX	366,400	139.20	<b>89.94</b>	100,779	Not given
	Cooper (Jim Chapman), TX	273,000	168.65	<b>109.0</b>	122,095	Not given
	Ferrell's Bridge Dam Lake of the Pines) TX	250,000	239.82	<b>155.0</b>	173,622	Not given
	Granger, TX	37,900	25.06	<b>16.2</b>	18,146	Not given
	Grapevine, TX	161,250	32.00	<b>20.68</b>	23,165	Not given
	Hords Creek, TX					
	Joe Pool, TX	142,900	21.97	<b>14.2</b>	15,906	Not given
	Lavon, TX	380,000	68.0	<b>43.95</b>	49,230	Not given
	Lewisville, TX	436,000	123.0	<b>79.5</b>	89,051	Not given
	Navarro Mills, TX	53,200	23.0	<b>15.51</b>	17,373	Not given
	N. San Gabriel Cam (Georgetown), TX	29,200	15.94	<b>10.3</b>	11,537	Not given
	O.C. Fisher, TX	80,400	5.57	<b>3.6</b>	4,033	Not given
	Proctor, TX	31,400	21.51	<b>13.9</b>	15,570	Not given
	Ray Roberts, TX	926,700	149.0	<b>96.3</b>	107,870	Not given
	Sam Rayburn, TX	43,000	20.11	<b>13.0</b>	14,562	Not given
	Somerville, TX	143,900	56.0	<b>36.19</b>	40,538	Not given
	Stillhouse Hollow, TX	204,900	97.94	<b>63.3</b>	70,905	Not given
	Town Bluff Dam (B.A. Steinhagen), TX	94,200	Not given			
	Waco, TX	151,626	106.91	<b>69.1</b>	77,396	Not given
	Whitney, TX	50,000	25.06	<b>16.2</b>	18,146	Not given
Wright Patman, TX	91,263	16.01	<b>10.35</b>	11,593	Not given	
SWT	Arcadia, OK	23,090	17.0	<b>11.0</b>	<b>12,300</b>	Firm Yield based on drought of record [3]
	Birch Lake, OK	7,630	4.6	<b>3.0</b>	<b>3,360</b>	[3]
	Broken Bow, OK	152,500	271	<b>175.0</b>	<b>196,000</b>	[3]
	Canton, OK	90,000	7.1	<b>4.6</b>	<b>5,152</b>	[3]
	Copan, OK	7,500	4.6	<b>3.0</b>	<b>3,360</b>	[3]
	Council Grove, KA	32,400	10.3	<b>6.7</b>	<b>5,504</b>	[3]
	Denison, OK & TX	158,060	232	<b>150.0</b>	<b>168,000</b>	[3]
	El Dorado, KA	142,800	34.3	<b>22.2</b>	<b>24,864</b>	[3]
	Elk City Lake, KA	30,180	23.7	<b>15.3</b>	<b>17,136</b>	[3]
	Eufaula, OK	56,000	77.4	<b>50.0</b>	<b>56,000</b>	[3]
	Fort Supply, OK	400	0.3	<b>0.2</b>	<b>224</b>	[3]
	Heyburn, OK	2,000	1.5	<b>1.7</b>	<b>1,904</b>	[3]
	Hugo, OK	47,600	89.7	<b>58</b>	<b>64,960</b>	[3]
	Hula, OK	19,800	19.2	<b>12.4</b>	<b>13,888</b>	[3]
John Redmond, KA	37,450	83.1	<b>53.7</b>	<b>60,144</b>	[3]	

## Water Supply Database 2004 Survey

Dist	Project	Storage Space (acre-feet)	Yield [1] [2]			Dependability	
			CFS	MGD	AF/Year		
SWT cont.	Kaw, OK	171,200	258	<b>167</b>	<b>187,040</b>	[3]	
	Keystone, OK	20,000	30.9	<b>20.0</b>	<b>22,400</b>	[3]	
	Marion, KA	44,730	12.5	<b>8.1</b>	<b>9,072</b>	[3]	
	Oologah, OK	342,600		<b>154.0</b>	<b>172,480</b>	[3]	
	Optima, OK (This project has never held water)						
	Pat Mayse, TX	109,600	85.1	<b>55</b>	<b>61,600</b>	[3]	
	Pearson-Skubitz, Big Hill, KA	25,700	13.2	<b>8.5</b>	<b>9,520</b>	[3]	
	Pine Creek, OK	49,400	130	<b>84</b>	<b>94,080</b>	[3]	
	Sardis, OK	297,200	217	<b>140</b>	<b>156,800</b>	[3]	
	Skiatook, OK	62,900	21.7	<b>14</b>	<b>15,680</b>	[3]	
	Tenkiller Ferry, OK	25,400	41.2	<b>26.63</b>	<b>29,825.6</b>	[3]	
	Toronto, KA	400	0.15	<b>0.1</b>	<b>112</b>	[3]	
	Waurka, OK	151,400	561	<b>36.2</b>	<b>40,544</b>	[3]	
	Wister, OK	14,000	31.0	<b>20.03</b>	<b>22,433.6</b>	[3]	
<b>South Pacific Division</b>							
SPK	New Hogan	30,000	41.44	26.65	<b>30,000</b>	Guarantee's at least 30,000 AF/YR	
SPN	Coyote Valley Dam Lake Mendocino, CA	70,000	<b>96.7</b>	<b>62.5</b>	<b>70,000</b>	Maximum available supply	
	Warm Springs Dam Lake Sonoma, CA	212,000	<b>292.8</b>	<b>189.3</b>	<b>212,000</b>	Maximum available supply	
SPA	Abiqui, NM	170,900	66.58	43.03	<b>48,200</b>	San Juan-Chama Annual Allocation	

### Footnotes:

[1] Conversion factor: 1 cubic foot per second = 0.64632 million gallons per day = 723.97 acre-feet per year.

[2] Bold is the yield submitted by district.

[3] All Tulsa District project dependability's are "firm yield based on drought of record."

# Appendix J: 2004 Agricultural Water Supply Database

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## LIST OF AGRICULTURAL WATER SUPPLY PROJECTS

### Northwestern Division

#### Portland District

Applegate, OR  
Blue River, OR [1]  
Cottage Grove, OR [1]  
Cougar, OR [1]  
Detroit-Big Cliff, OR [1]  
Dorena, OR [1]  
Fall Creek, OR [1]  
Fern Ridge, OR [1]  
Green Peter-Foster, OR [1]  
Hills Creek, OR [1]  
John Day, OR/WA [2] (*no storage*)  
Lookout Point – Dexter, OR [1]  
Lost Creek, OR \*  
Willow Creek, OR [3] (*no storage*)

#### Walla Walla District

Ice Harbor, WA [4] (*no storage*)  
Little Goose, WA [4] (*no storage*)  
Lower Granite, WA [4] (*no storage*)  
Lower Monumental, WA [4] (*no storage*)  
Lucky Peak, ID [5]  
McNary, OR/WA [4] (*no storage*)  
Ririe, ID [6]

#### Omaha District

Big Bend, SD [7] (*no storage*)  
Fort Peck, MT [8]  
Fort Randall, SD [7] (*no storage*)  
Garrison, ND [8] \*  
Gavins Point, SD/NE [7] (*no storage*)  
Oahe, ND/SD [8]

#### Kansas City District

Harlan County, NE  
Kanopolis, KS [9] \*  
Wilson, KS

### Southwestern Division

#### Fort Worth District

Belton, TX \*

#### Tulsa District

Waurika, OK \*

### South Pacific Division

#### Sacramento District

Black Butte, CA  
Buchanan, CA  
Coyote Valley, CA \*  
Folsom, CA [10]  
Hidden, CA  
Isabella, CA  
New Hogan, CA \*  
New Melones, CA [10]  
Pine Flat, CA  
Success, CA  
Terminus, CA

#### Los Angeles

Alamo, AZ [11] (*no storage*)

#### Albuquerque District

Conchas, NM  
John Martin, CO  
Santa Rosa, NM  
Trinidad, CO

Out of a total of 48 projects, 37 have active authorized storage for irrigation.

\* Signifies the seven projects (Lost Creek, OR; Garrison, ND; Kanopolis, KS; Waurika, OK; Coyote Valley, CA and New Hogan, CA) that also contain storage for municipal and industrial water supply.

See page 65 for footnotes.

**Footnotes for page 64:**

[1] Specific irrigation storage of 1,640,000 AF has been filed for irrigation use by the USBR. Because of the projects being planned and operated as a system (Willamette Basin), none of the irrigation storage is either separable or project specific and costs are not allocated on a project bases.

[2] Irrigation is authorized as only an “incidental” purpose. No cost is allocated to the function nor storage reserved. However, there is a specific congressionally authorized project for USBR to pump water from John Day reservoir to the Umatilla River for irrigation and fish.

[3] All irrigation is for future development and no costs have been allocated to the irrigation purpose. However, temporary irrigation contracts have been issued in the recent past during drought conditions.

[4] Irrigation is authorized as an “incidental” purpose. No cost is allocated to the function nor storage reserved.

[5] Provides irrigation storage during low runoff years when storage in Anderson Ranch and Arrow-Rock (two USBR projects) would not be sufficient.

[6] Project turned over to the USBR. Joint storage is for flood control, irrigation and recreation.

[7] Accommodate water withdrawal by permit, irrigation use not allocated.

[8] Joint storage with flood control, navigation and hydroelectric power.

[9] Storage will be allocated from flood control when irrigation project is operable.

[10] Project operated and maintained by USBR upon completion of construction.

[11] Water Conservation storage has not been allocated to either M&I or Irrigation. Releases from the water conservation pool are make to maximize project benefits and are coordinated with the USBR, which operates the downstream Colorado River water system.

**DIVISION AND DISTRICT SUMMARIES [1]**

District	Number of Projects	Total Project Cost (\$1000)	Total Federal Cost to Irrigation [2] (\$1000)	Storage Reserved for Irrigation	
				Joint (1000 AF)	Specific (1000 AF)
<b>Northwestern Division</b>					
Portland	14	1,238,005	528,319	2,020	NA
Walla Walla	7	1,091,072	249,005	90	0
Omaha	6	1,153,870	313,726	47,998	NA
Kansas City	3	80,152	68,647	388	150
<b>Div. Total</b>	<b>30</b>	<b>3,563,099</b>	<b>1,159,697</b>	<b>50,496</b>	<b>NA</b>
<b>Southwestern Division</b>					
Fort Worth	1	18,400	16,300	0	45
Tulsa	1	67,100	25,800	0	19
<b>Div. Total</b>	<b>2</b>	<b>85,500</b>	<b>42,100</b>	<b>0</b>	<b>64</b>
<b>South Pacific Division</b>					
Sacramento	11	733,890	411,639	5,230	0
Los Angeles	1	14,780	0	0	0
Albuquerque	4	119,400	113,400	260	577
<b>Div. Total</b>	<b>16</b>	<b>868,070</b>	<b>525,039</b>	<b>5,490</b>	<b>577</b>
<b>National Total</b>	<b>48</b>	<b>4,516,669</b>	<b>1,726,836</b>	<b>55,986</b>	<b>NA</b>

Footnotes:

[1] See following pages 5 through 9 for footnotes that are project specific.

[2] Total cost less reimburseables.



**Appendix J: 2004 Agricultural Water Supply Database**

**Portland District**

Project Name	Total Project Cost (\$1000)	Total Federal Cost to Irrigation [1] (\$1000)	Storage Reserved for Irrigation			Percent of Project Cost Allocated to Irrigation (%)
			Joint (1000 AF)	Specific (1000 AF)	(%)	
Applegate	96,320	93,437	65.0	0	76	2.1
Blue River	31,324	NA	[2]	[2]	[2]	27
Cottage Grove	4,013	NA	[2]	[2]	[2]	30
Cougar	60,462	38,738	[2]	[2]	[2]	5.4
Detroit-Big Cliff	66,867	21,187	[2]	[2]	[2]	7.6
Dorena	14,305	NA	[2]	[2]	[2]	38
Fall Creek	21,055	NA	[2]	[2]	[2]	40
Fern Ridge	8,686	NA	[2]	[2]	[2]	43
Green Peter-Foster	90,157	34,142	[2]	[2]	[2]	6.9
Hills Creek	48,973	26,931	[2]	[2]	[2]	9.4
John Day [3]	511,000	112,075	0	0	0	0
Lookout Point - Dexter	97,473	49,575	[2]	[2]	[2]	1.5
Lost Creek	148,546	113,410	315.0	0	70	1.5
Willow Creek [4]	38,824	38,824	0	0	0	0
<b>Total</b>	<b>1,238,005</b>	<b>528,319</b>	<b>2,020 [5]</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>

Footnotes:

[1] Total cost less reimbursables.

[2] Specific irrigation storage of 1,640,000 AF has been filed for irrigation use by the USBR. Because of the projects being planned and operated as a system (Willamette Basin), none of the irrigation storage is either separable or project specific and costs are not allocated on a project bases.

[3] Irrigation is authorized as only an “incidental” purpose. No cost is allocated to the function nor storage reserved. However, there is a specific congressionally authorized project for USBR to pump water from John Day reservoir to the Umatilla River for irrigation and fish.

[4] All irrigation is for future development and no costs have been allocated to the irrigation purpose. However, temporary irrigation contracts have been issued in the recent past during drought conditions.

[5] Assumes 1,640,000 AF joint storage in Willamette Basin projects.

Walla Walla District (Based on 1996 Data)

Project Name	Total Project Cost (\$1000)	Total Federal Cost to Irrigation [1] (\$1000)	Storage Reserved For Irrigation			Percent of Project Cost Allocated to Irrigation (%)
			Joint (1000 AF)	Specific (1000 AF)	(%)	
Ice Harbor [2]	38,259	1,809	0	0	0	0
Little Goose [2]	63,850	2,382	0	0	0	0
Lower Granite [2]	341,804	76,531	0	0	0	0
Lower Monumental [2]	256,618	51,744	0	0	0	0
Lucky Peak [3]	19,080	19,080	0	0	0	0
McNary [2]	333,231	64,996	0	0	0	0
Ririe [4]	38,230	32,463	90	NA	NA	15.1
<b>Total</b>	<b>1,091,072</b>	<b>249,005</b>	<b>90</b>	<b>0</b>	<b>0</b>	<b>NA</b>

Footnotes:

[1] Total cost less reimbursables.

[2] Irrigation is authorized as an “incidental” purpose. No cost is allocated to the function nor storage reserved.

[3] Provides irrigation storage during low runoff years when storage in Anderson Ranch and Arrow-Rock (two USBR projects) would not be sufficient.

[4] Project turned over to the USBR. Joint storage is for flood control, irrigation and recreation.

**Appendix J: 2004 Agricultural Water Supply Database**

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**Omaha District**

Project Name	Total Project Cost (\$1000)	Total Federal Cost to Irrigation [1] (\$1000)	Storage Reserved for Irrigation			Percent of Project Cost Allocated to Irrigation (%)
			Joint (1000 AF)	Specific (1000 AF)	(%)	
Big Bend [2]	107,187	3,708	0	0	0	0
Fort Peck [3]	159,900	48,602	13,649	0	72	21.5
Fort Randall [2]	198,066	70,004	0	0	0	0
Garrison [3] [4]	294,915	86,692	17,560	0	73	19.9
Gavins Point [2]	49,231	13,504	0	0	0	0
Oahe [3]	344,571	91,216	16,789	0	72	18.1
Total	1,153,870	313,726	47,998	0	NA	NA

Footnotes:

[1] Total cost less reimbursables.

[2] Accommodate water withdrawal by permit, irrigation use not allocated.

[3] Joint storage with flood control, navigation and hydroelectric power.

[4] There is a major hydropower rehabilitation project underway that was initiated in FY 97. Costs through FY 03 are \$37.4 million with an FY 04 estimate of an additional \$9.6 million. These costs are 100% Federal and are not reflected in the table.

**Kansas City District (Costs Updated to FY 03)**

Project Name	Total Project Cost (\$1000)	Total Federal Cost to Irrigation [1] (\$1000)	Storage Reserved for Irrigation			Percent of Project Cost Allocated to Irrigation (%)
			Joint (1000 AF)	Specific (1000 AF)	(%)	
Harlan County [2]	47,112	35,607	0	150	18	24.4
Kanopolis [3]	12,577	12,577	163	0	39	0
Wilson	20,463	20,463	225	0	29	0
Total	80,152	68,647	388	150	27	14

Footnotes:

[1] Total cost less reimbursables.

[2] Under a revised Field Working Agreement signed in 2001, a portion of the allotted sediment reserve storage currently amounting to 46,012 AF (2000 survey) is available for irrigation use during droughts, in addition to the allocated irrigation storage of 150,000 AF. No project costs are allocated to this portion, since it is a temporary use applicable only as long as the sediment space is not filled in.

[3] Storage will be reallocated from flood control when irrigation project is operable.

**Fort Worth District (Based on 1996 Data)**

Project Name	Total Project Cost (\$1000)	Total Federal Cost to Irrigation [1] (\$1000)	Storage Allocated to Irrigation			Percent of Project Cost Allocated to Irrigation (%)
			Joint (1000 AF)	Specific (1000 AF)	(%)	
Belton	18,400	16,300	0	45	36	4.3

Footnote: [1] Total cost less reimbursables.

**Tulsa District (Based on 1996 Data)**

Project Name	Total Project Cost (\$1000)	Total Federal Cost to Irrigation [1] (\$1000)	Storage Allocated to Irrigation			Percent of Project Cost Allocated to Irrigation (%)
			Joint (1000 AF)	Specific (1000 AF)	(%)	
Waruika	67,100	25,800	0	18.8	6.5	0.2

Footnote: [1] Total cost less reimbursables.

**Sacramento District**

Project Name	Total Project Cost (\$1000)	Total Federal Cost to Irrigation [1] (\$1000)	Storage Reserved for Irrigation			Percent of Project Cost Allocated to Irrigation (%)
			Joint (1000 AF)	Specific (1000 AF)	(%)	
Black Butte	14,500	8,714	150	0	100	39.9
Buchanan	25,258	16,140	140	0	100	36.1
Coyote Valley	17,550	9,600	70	0	57	NA
Folsom [2]	100,000	63,000	1,000	0	100	NA
Hidden	30,555	25,177	85	0	100	17.6
Isabella	22,000	17,424	570	0	100	20.8
New Hogan	15,906	10,148	310	0	100	36.2
New Melones [2]	380,000	174,100	164	0	68	26
Pine Flat	39,068	24,800	1,000	0	100	36.5
Success	13,993	12,664	80	0	100	9.5
Terminus [3]	75,060	49,872	185	0	100	14.1
<b>Total</b>	<b>733,890</b>	<b>411,639</b>	<b>5,230</b>	<b>0</b>	<b>NA</b>	<b>NA</b>

Footnotes:

[1] Total cost less reimbursables.

[2] Project operated and maintained by USBR upon completion of construction.

[3] Project data updated to include spill raise.

**Los Angeles District**

Project Name	Total Project Cost (\$1000)	Total Federal Cost to Irrigation [1] (\$1000)	Storage Reserved for Irrigation			Percent of Project Cost Allocated to Irrigation (%)
			Joint (1000 AF)	Specific (1000 AF)	(%)	
Alamo [2]	14,780	14,780	0	0	0	NA

Footnotes:

[1] Total cost less reimbursables.

[2] Water Conservation storage of 230,000 acre-feet has not been allocated to either M&I or Irrigation. Releases from the water conservation pool are made to maximize project benefits and are coordinated with the USBR, which operates the downstream Colorado River water system.

**Appendix J: 2004 Agricultural Water Supply Database**

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**Albuquerque District**

Project Name	Total Project Cost (\$1000)	Total Federal Cost to Irrigation [1] (\$1000)	Storage Reserved for Irrigation			Percent of Project Cost Allocated to Irrigation (%)
			Joint (1000 AF)	Specific (1000 AF)	(%)	
Conchas	15,800	15,800	260	0	57	49
John Martin	15,200	15,200	0	357	58	0
Santa Rosa	43,400	43,400	0	200	44.5	44.5
Trinidad	45,000	39,000	0	20	17.5	17.5
Total	119,400	113,400	260	577	NA	NA

Footnote: [1] Total cost less reimbursables.