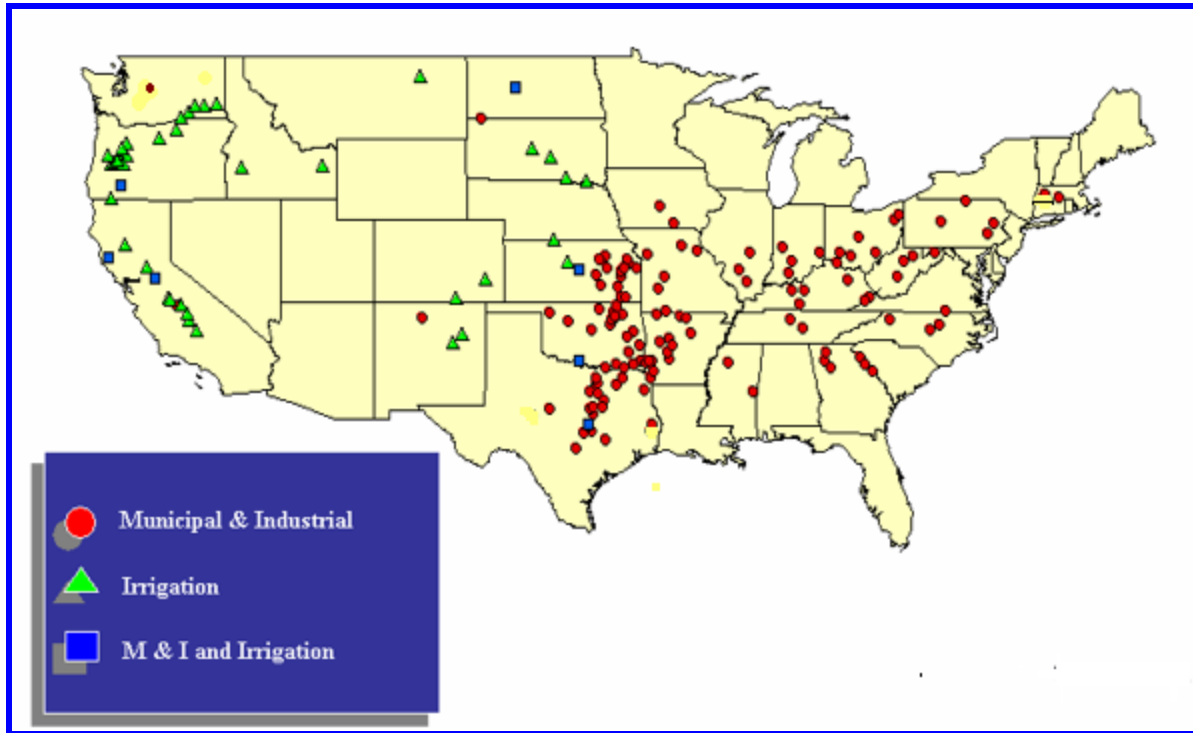




US Army Corps
of Engineers®

The Corps of Engineers Water Supply Program



- Database
- Business Line
- Future Directions

Presented by:
Ted Hillyer
Institute for Water Resources

Water Supply Workshop
Tulsa, Oklahoma
2-4 June 2009



Water Supply Database

Municipal and Industrial Water Supply (May 2009 data)

Storage Space:	9.2 million acre-feet
Reservoirs:	129 reservoirs
Location:	26 States
	22 of the Corps 38 districts
Investment Cost:	\$1.3 billion
No. Agreements	335 signed agreements

Irrigation Water Supply (2004 data)

**56.6 million AF of storage for irrigation and other uses in 48
reservoirs in the West (only 640,000 of which is specific irrigation)**

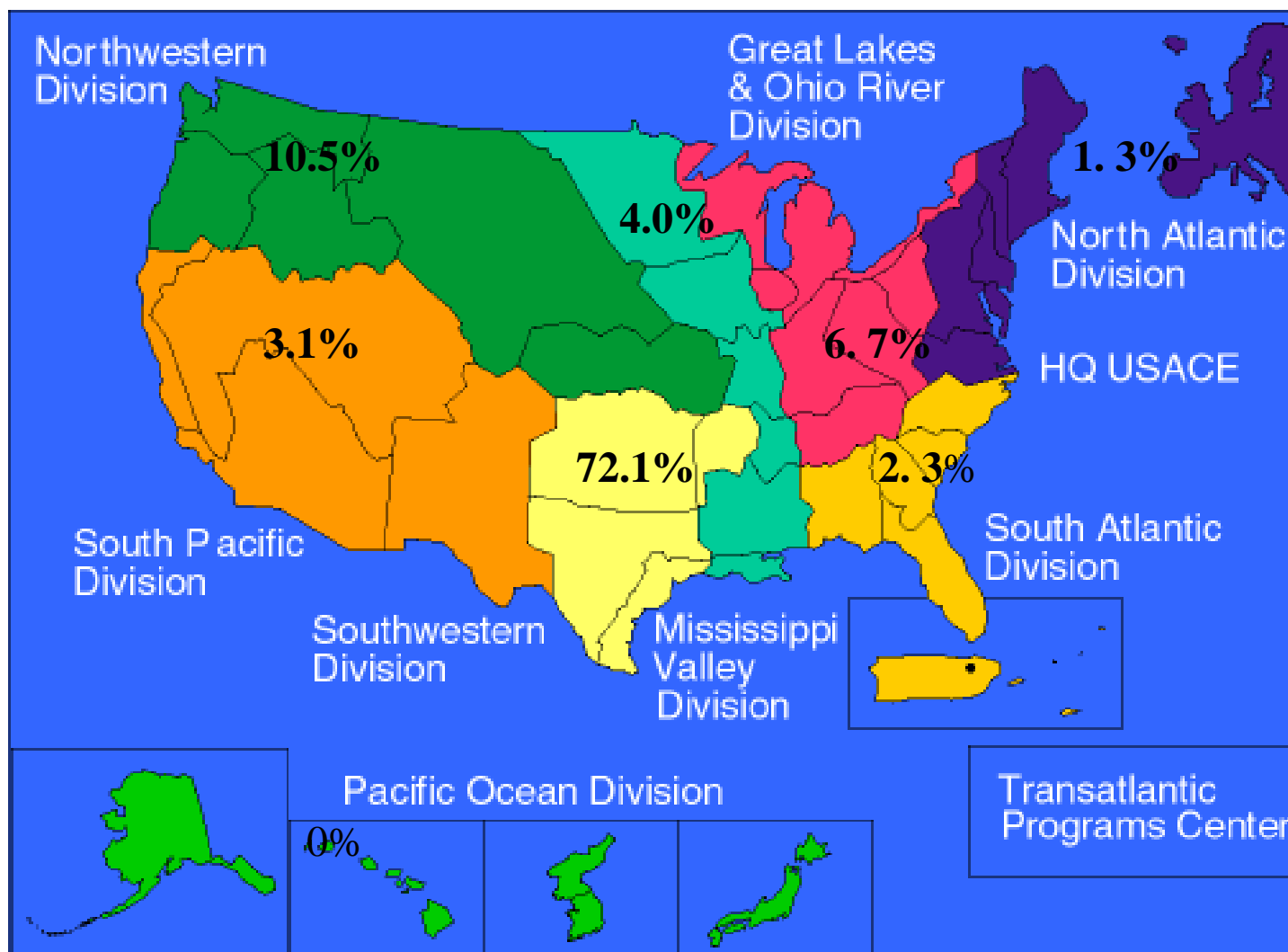


Authorized M&I Storage Space by Division

Division Projects / Contracts	Storage Space (acre-feet)			
	Present	Future Under Contract	Not Under Contract	Total
NAD: 7 / 7	114,375	4,000	0	118,375
SAD: 10 / 25	206,092	0	0	206,092
LRD: 24 / 38	582,670	1,881	21,600	611,153
MVD: 8 / 11	211,314	131,260	24,653	367,227
NWD: 16 / 33	627,519	262,230	67,032	956,781
SWD: 61 / 218	4,849,080	1,360,285	400,616	6,609,981
SPD: 3 / 3	282,000	0	0	282,000
Total: 129 / 335	6,878,052	1,759,656	513,901	9,151,609



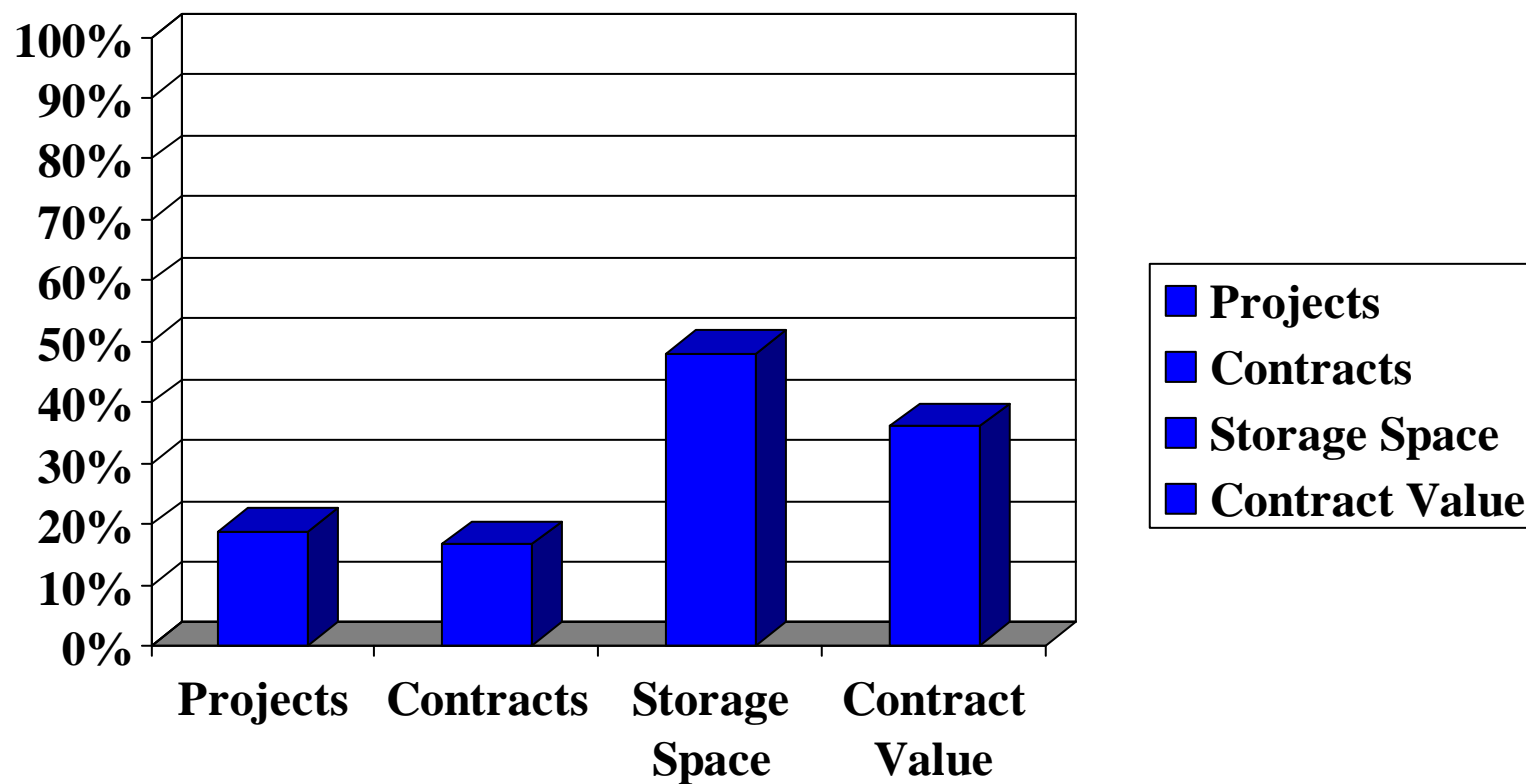
Distribution of Authorized M&I Storage Space by MSC (%)





Water Supply Database

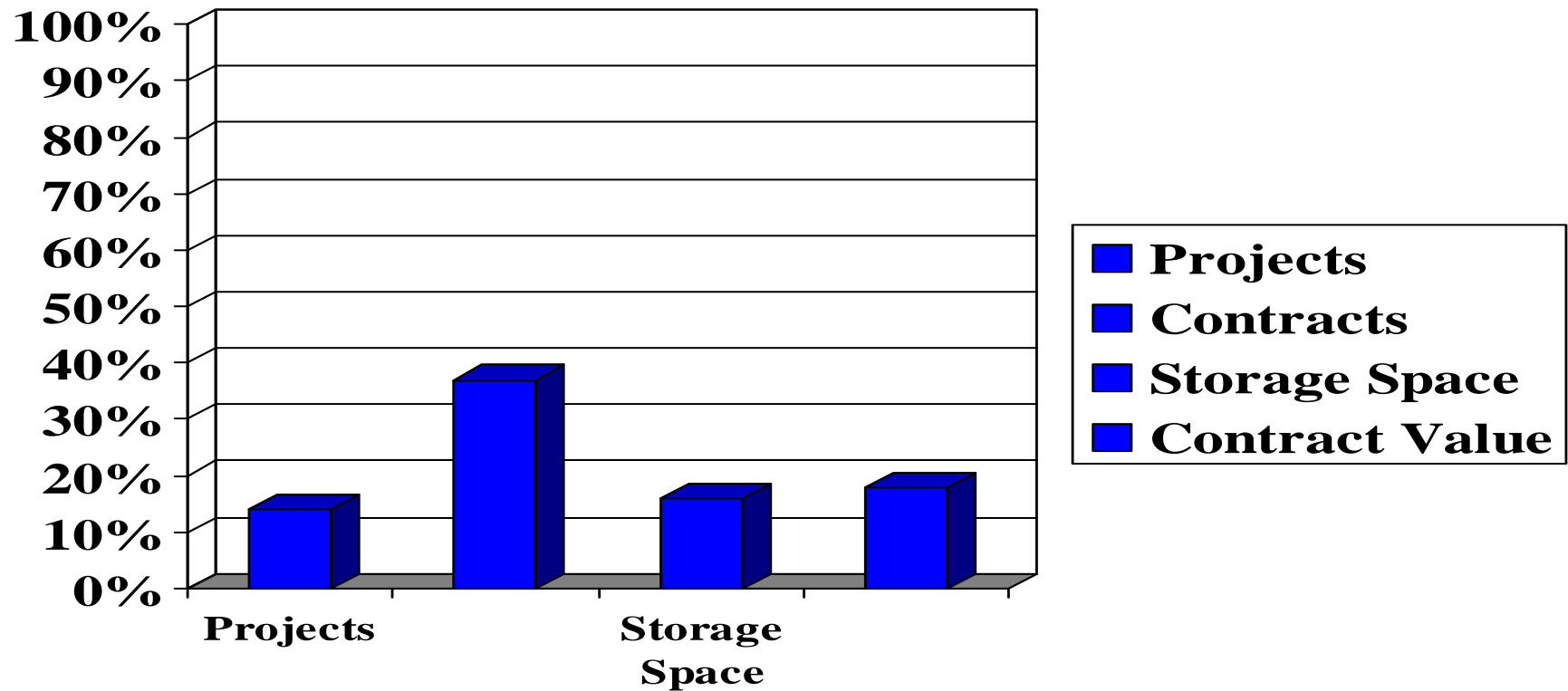
Texas as a Percent of the Nation





Water Supply Database

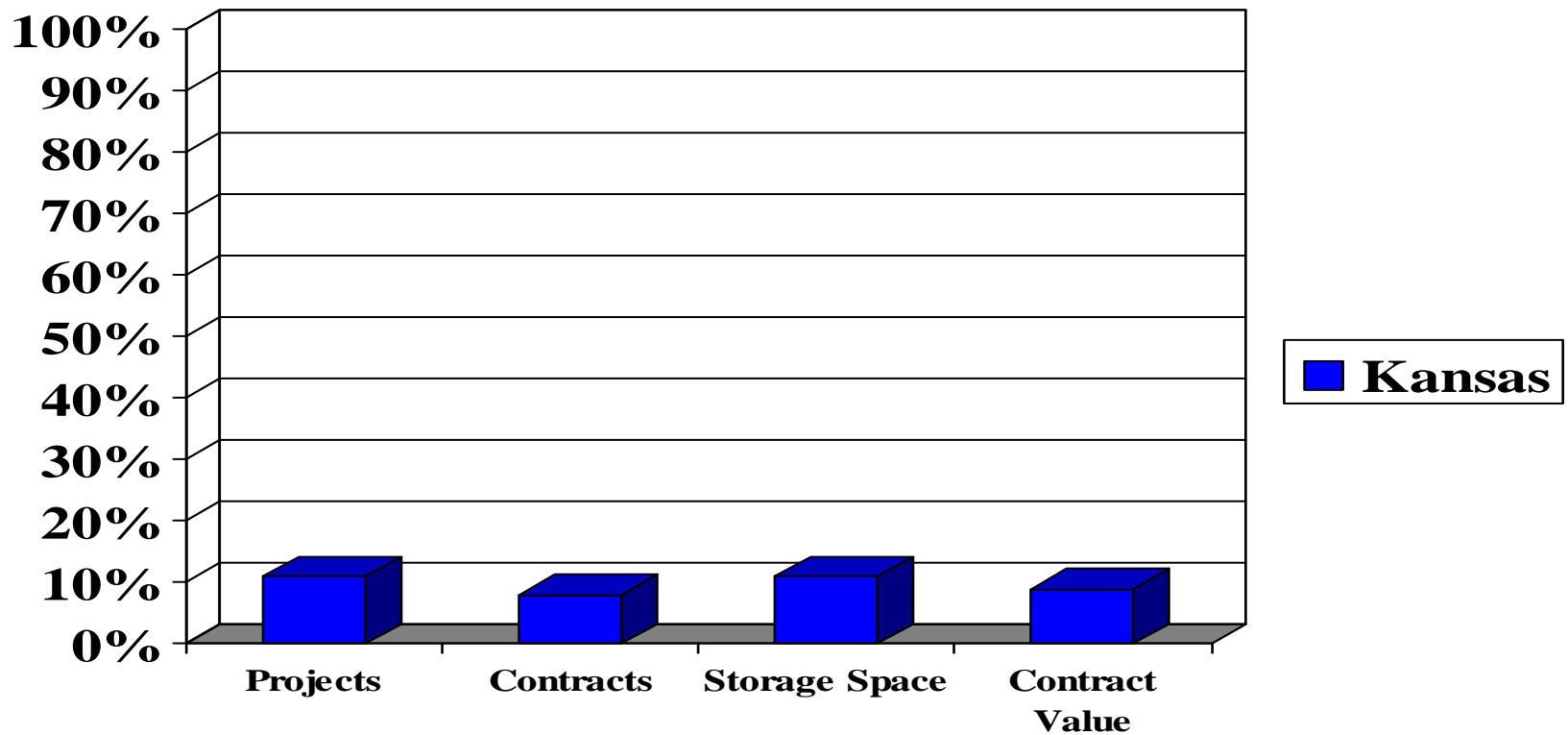
Oklahoma as a Percent of the Nation





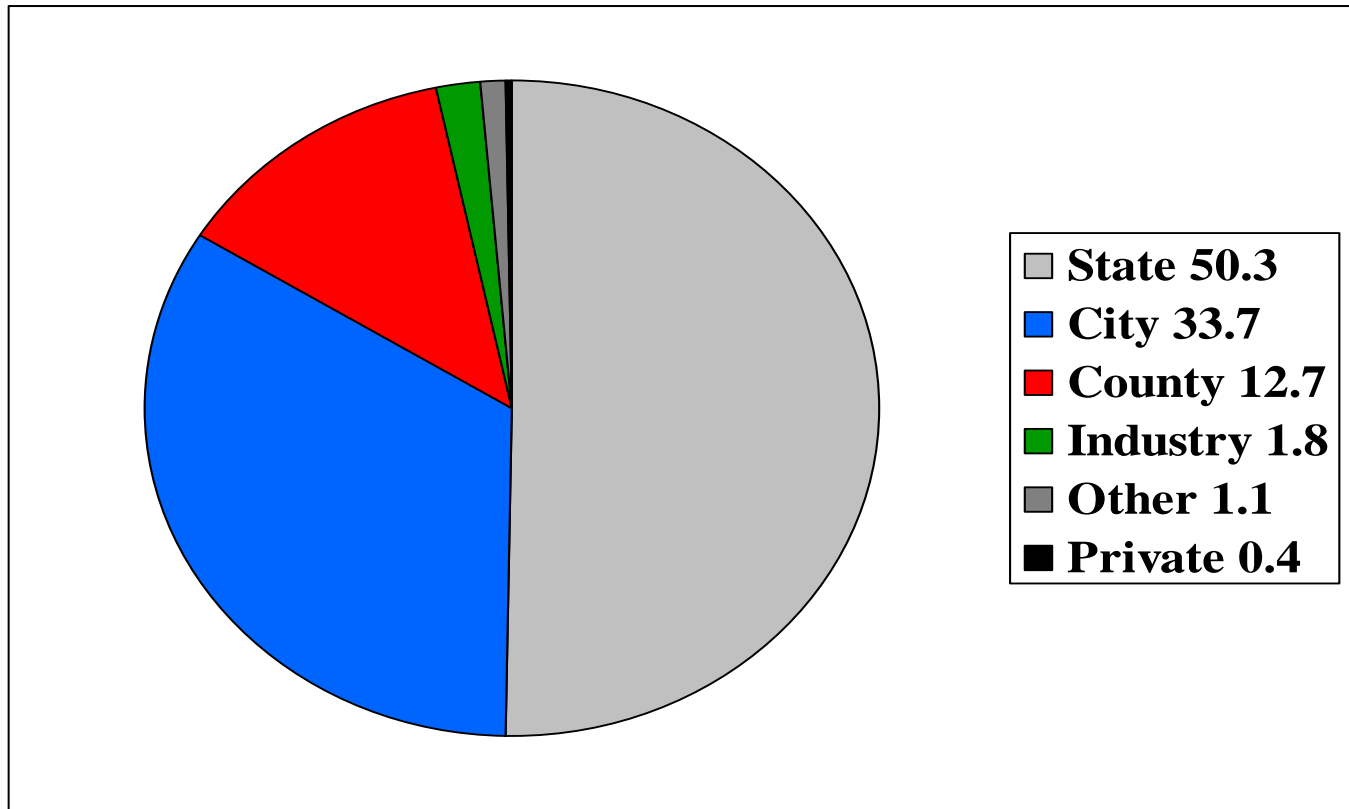
Water Supply Database

Kansas as a Percent of the Nation





% of M&I Storage Space by Type of non-Federal Sponsor





People Served

Division	Personal Needs Met	
	Household (67.5 gpd)	Total (1,200 gpd)
NAD	3, 940,740	221,664
SAD	5,520,000	310,500
LRD	9,072,592	510,333
MVD	2,045,926	115,083
NWD	2,856,296	160,667
SWD	26,616,296	1,497,167
SPD	5,749,630	323,316
TOTAL	55,801,480	3,138,830



Water Supply

Program Activities

- No new water supply projects
- Perform reallocations
 - Minimal funding for reallocation studies in the budget so most are Congressional adds at 100% Federal
 - Cost of storage based on higher of benefits or revenues foregone or updated cost of storage
 - Reallocations result in more NED benefits and more revenues to the U.S. Treasury
 - Any construction cost associated with reallocations paid by local sponsor during period of construction
- Place future use storage under present use
- Renegotiate expiring contracts
- Billing and collecting
- Other activities include legal matters, sediment studies and develop yield analysis

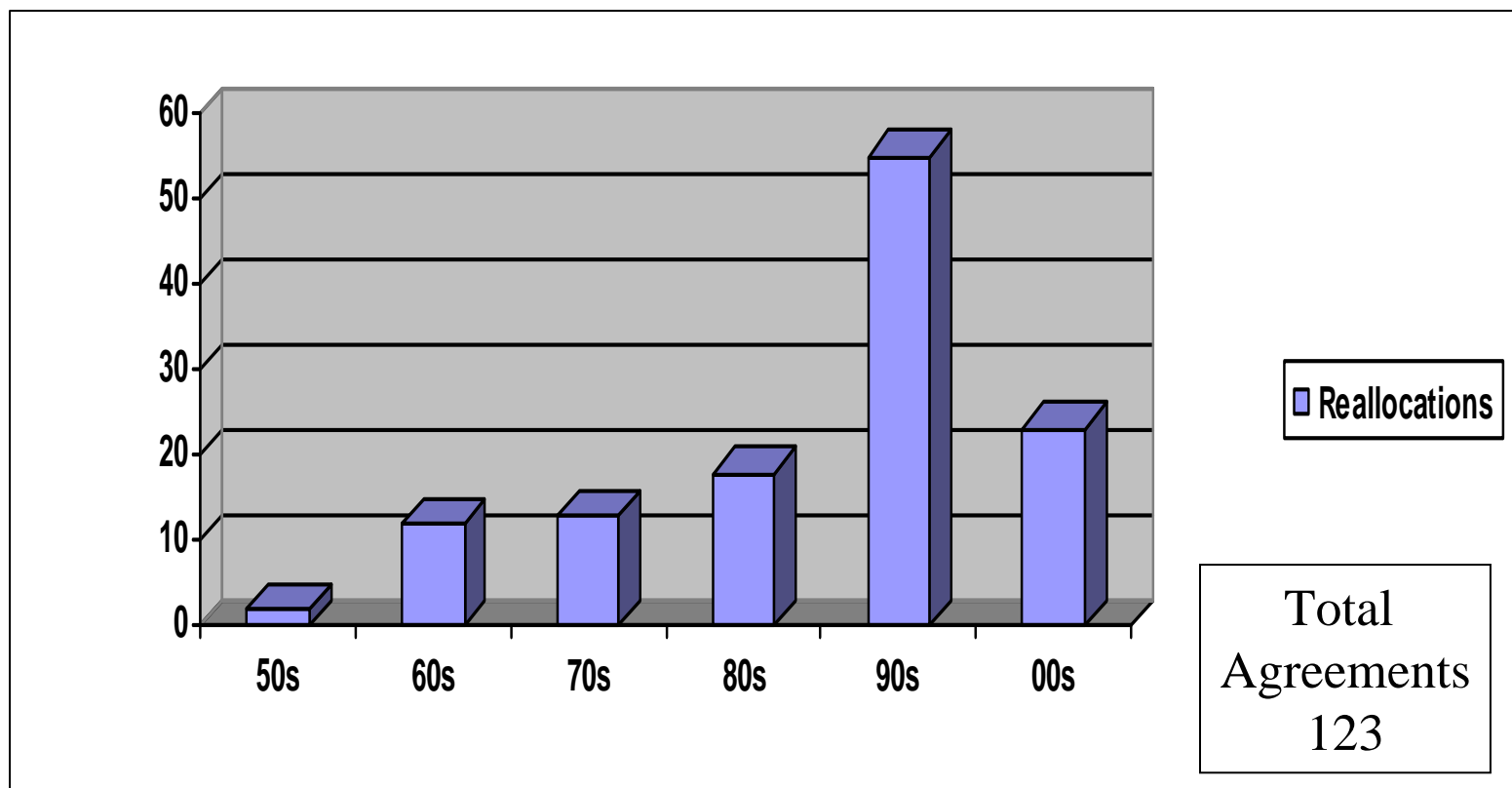


M&I Reallocations (2007 data)

Division	Number of Projects	Number of Contracts	Storage Space (acre –feet)
NAD	3	3	32,100
SAD	6	20	62,431
LRD	12	24	31,740
MVD	3	3	20,975
NWD	7	8	202,680
SWD	16	65	504, 447
SPD	0	0	0
TOTAL	47	123	854,373

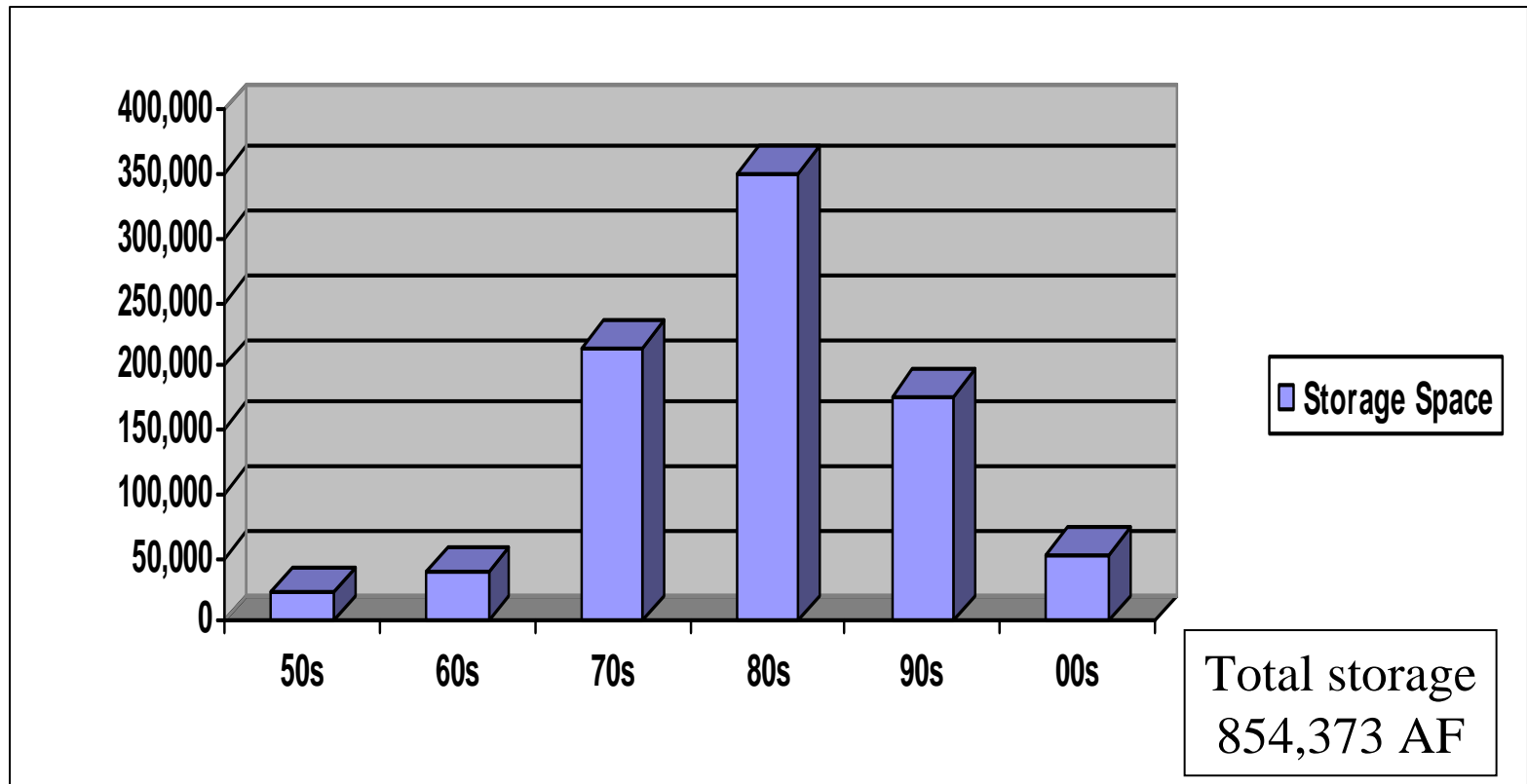


Number of Water Supply Agreements Signed as a Result of Reallocations





History of Storage Space Placed in Service as a Result of Reallocations





Water Supply Business Line Managers

- ❖ **Headquarters – Ted Hillyer IWR**
- ❖ **MSCs**
 - **William Sutyak – NAD**
 - **Terry Stratton – SAD ***
 - **Ronny Sadri – LRD ***
 - **Kevin Curran – MVD/MVS ***
 - **Jim Fredericks – NWD ***
 - **Adrienne Carter – SWD**
 - **S.T. Su – SPD**
 - **Helen Stuppelbeen - POD**



Water Supply Business Line

There are three main parts of any of the Corps business lines

- Managing the Corps budget
 - Keeping OMB happy through PART
 - Answering questions raised by Congress and local interests
- These three can be achieved through OMBIL (providing the data are loaded)



OMBIL

In 2006 we initiated an effort to get water supply into the **O**perations and **M**aintenance **B**usiness **I**nformation **L**ink. Goal to have up and running by September 2009.

This will enable us to have a water supply database that is updated on an annual basis, permit us to better manage the program and perhaps develop better performance metrics.



Water Supply Business Line Budget

O&M Work Category Codes Established in FY 07

OPERATIONS FOR WATER SUPPLY FUNCTIONS

60811 Operation of project gates, specific water supply conduits, permanent operation equipment, etc. for water supply

60812 Water supply agreements

60820 Studies and surveys for water supply

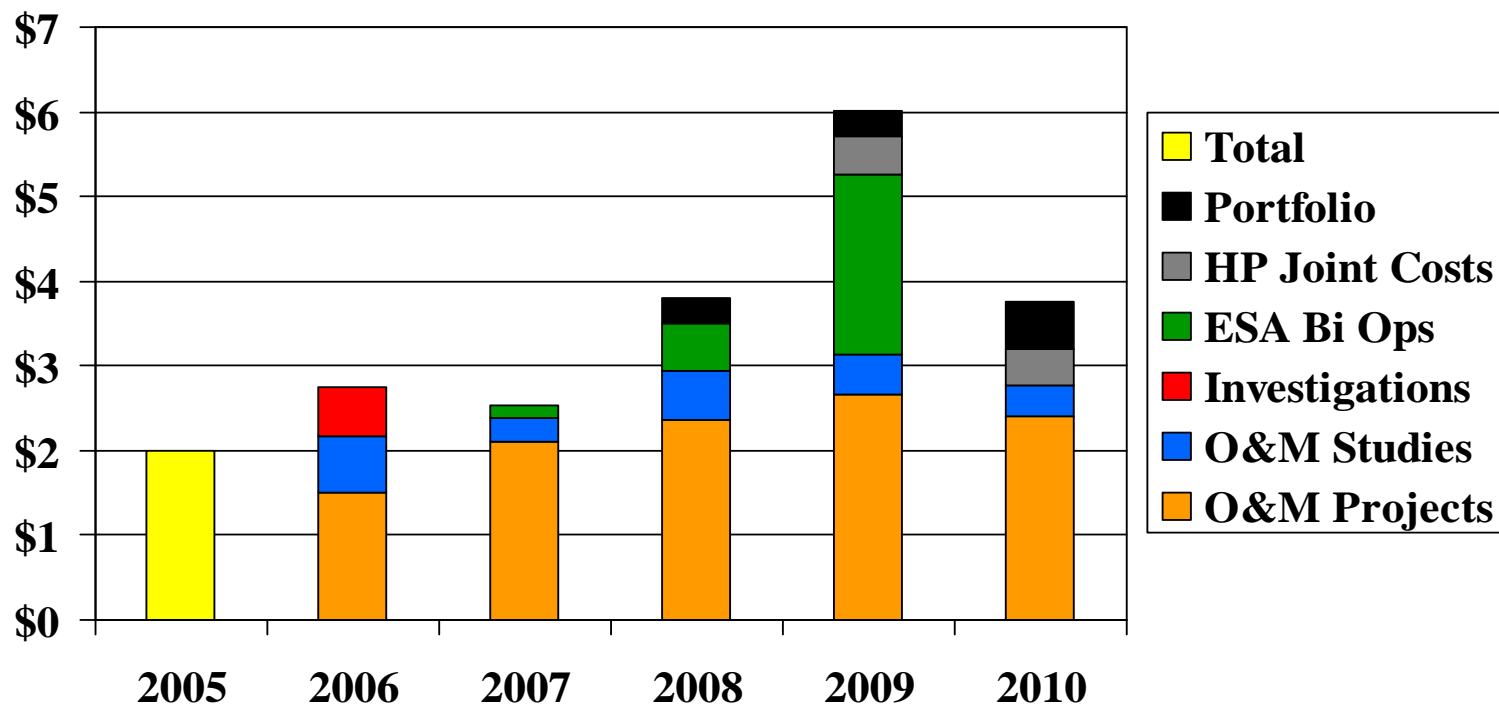
MAINTENANCE FOR WATER SUPPLY FUNCTIONS

61810 Maintenance of project gates, specific water supply conduits, permanent operation equipment, etc. for water supply



Water Supply Business Line

Historical Funding - President's Budget (millions)





Water Supply Business Line Budget

Distribution of FY 2010 Budget by MSC Costs in \$000

Division	O&M Projects	O&M Studies	Hydropower Joint Costs	Remaining Items	Total
NAD	70	0	0	0	70
SAD	248	253	0	0	501
LRD	698	0	0	0	698
MVD	208	0	64	0	272
NWD	116	0	372	0	488
SWD	1,067	100	0	0	1,167
SPD	0	0	0	0	0
Portfolio	0	0	0	571	571
Total	2,407	353	436	571	3,767



Water Supply Business Line PART

The **P**rogram **A**ssessment **R**ating **S**ystem is a tool developed and used by OMB.

- Developed to assess and improve program performance results.
- The review helps identify a program's strengths and weaknesses to provide informed funding and management decisions aimed at making the program more effective.
- PART includes a consistent series of analytical questions that allows programs to show improvements over time, and allows comparisons between similar programs.



Program Assessment Rating Tool for Water Supply

Program Objectives	Performance Measures
In partnership with non-Federal water management plans and consistent with law and policy, manage Corps reservoirs to provide water supply storage in a cost-efficient and environmentally responsible manner.	<ol style="list-style-type: none">1. Acre-feet of storage under contract versus acre-feet available.2. Percent of costs covered by revenues returned to the U.S. Treasury. <hr/> <p>Efficiency Measure</p> <hr/> <ol style="list-style-type: none">1. Administrative yearly cost per acre-foot of storage



Program Assessment Rating Tool

Performance Measure 1

Increase % of storage space under contract vs. storage available

Year	Target	Actual
1996	NA	91.8%
2004	NA	92.4%
2005	NA	95.9%
2006 [1]	95.9%	94.5%
2007 [1]	96.0%	96.8%
2008 [1]	96.9%	94.4%
2009	97.0%	NA
2010	97.2%	NA

Performance Measure 2

Increase % of costs covered by revenues returned to Treasury

Year	Target	Actual
1996	NA	52.6%
2004	NA	72.0%
2005	NA	75.0%
2006 [1]	75.2%	74.9%
2007 [1]	75.4%	67.8%
2008 [1]	70.0%	72.0%
2009	70.2%	NA
2010	70.4%	NA

[1] data in process of being converted from paper drills to OMBIL



Water Supply Business Line PART

Efficiency Measure (based on partial 2008 data)

Input Measure

Output Measure

Costs to Collect

Storage Space under a Present Use Contract

\$1,227,000

9,029,000 Acre-Feet

Or \$0. 136 / Acre-Foot



Program Assessment Rating Tool

2006 Assessment Rating (moderate)

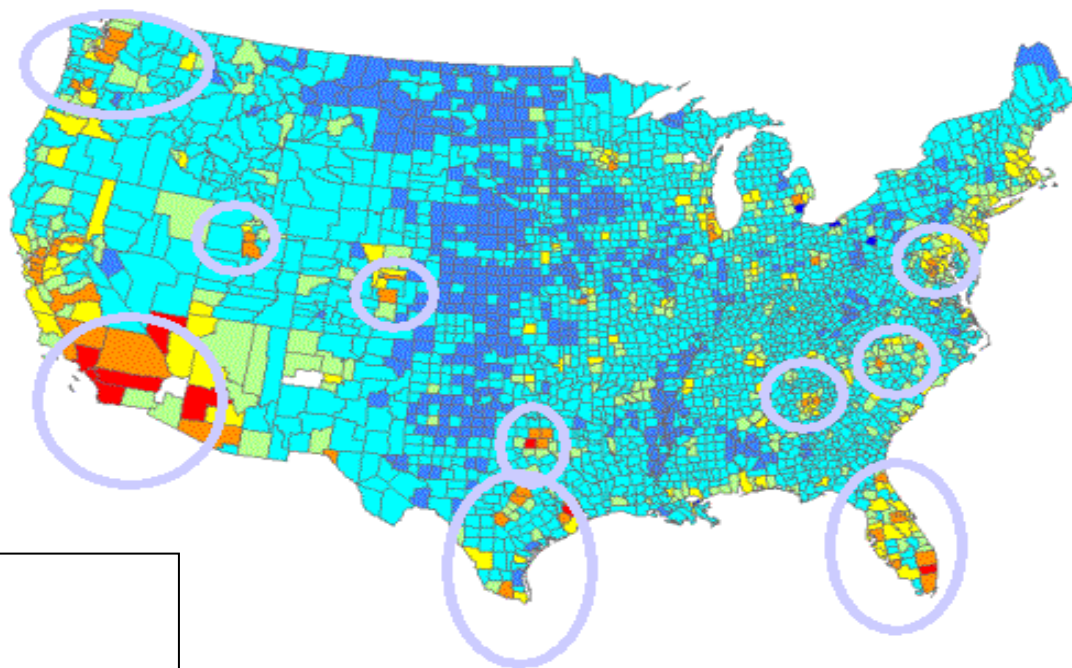
- **Program Purpose & Design** **100%**
- **Strategic Planning** **88%**
 - No independent evaluations
- **Program Management** **100%**
- **Program Results/Accountability** **58%**
 - Annual performance measures exceeded to a large extent but not completely
 - Improvement demonstrated to a large extent but not completely
 - No independent evaluations that program is effective and achieving results



Water Supply a National Issue

County Growth from 2000 to 2025

○ Significant Water Supply Issues



Population Growth

Red: 1,900,000 to 780,000

Orange: 780,000 to 220,000

Yellow: 220,000 to 28,000

Green: 28,000 to 0

Light blue: 0 to (-)28,000

Blue: (-)28,000 to (-)46,000

Dark blue: (-)46,000 to (-)167,000



Future Directions

Trends - *Associated Uncertainties*

- **Increase in population and economic growth**
 - *Uncertainty about growth rates*
 - *Potential for large shifts of water demand*
- **Increasing in-stream demands**
 - *Public resolve on environmental values*
- **Global warming and climate change**
 - *Pace and form of climate change*
 - *Impacts on water resources*
- **Demand for water for energy production**
 - *Selection of fuel alternatives (liquefaction or biofuel types)*
- **Aging water supply infrastructure**
 - *Budget priorities in funding for rehabilitation*



Future Directions

Other trends and Uncertainties

- Technological advancements and breakthroughs
- Unquantified Indian water right claims
- Development of new water supply and transmission infrastructure
- International trade and demands for “virtual” water
- Increasing investment in water desalination capacity of both sea water and groundwater
- Groundwater recharge and recovery
- Reclamation of wastewater and impaired water



Things in the Pipeline that may Alter Reallocation Policy on Updating Costs

- **Left out of WRDA 2007.** Take the lower of updated cost of storage, benefits or revenues foregone or replacement cost.
- **Lake Lanier, GA.** This has to do with reallocating storage in Lake Lanier and the law suit among GA, AL and FL on the ACT/ACF. Actions here may modify the 15% / 50,000 AF rule to put more emphasis on the extent of change not any arbitrary % or amount of storage.
- **Chatfield, CO.** This is an issue with reallocation of storage in three Corps reservoirs in CO. Actions may adjust the updated cost of storage on an annual basis, based on the likely hood that the storage will actually capture water supply.



Water Supply Assistance

- **John Micik – CECW-PC: 202/761-8643**
Policy Compliance Reviewer
- **Janet Hotubbee – CESWT-PE-P: 918-484-5135, x3114**
Water Supply Specialist 918-625-5840 (cell)
- **Peter Shaw – CESWD-PDS-P: 469/487-7038**
Technical POC for the Water Management & Reallocation Center of Expertise
- **Steve Cone – CEIWR-GW: 571/212-0087 (cell)**
WS Knowledge Expert
- **Ted Hillyer – CEIWR-GI: 703/428-6140**
HQ WS Business Line Manager



Questions ?

