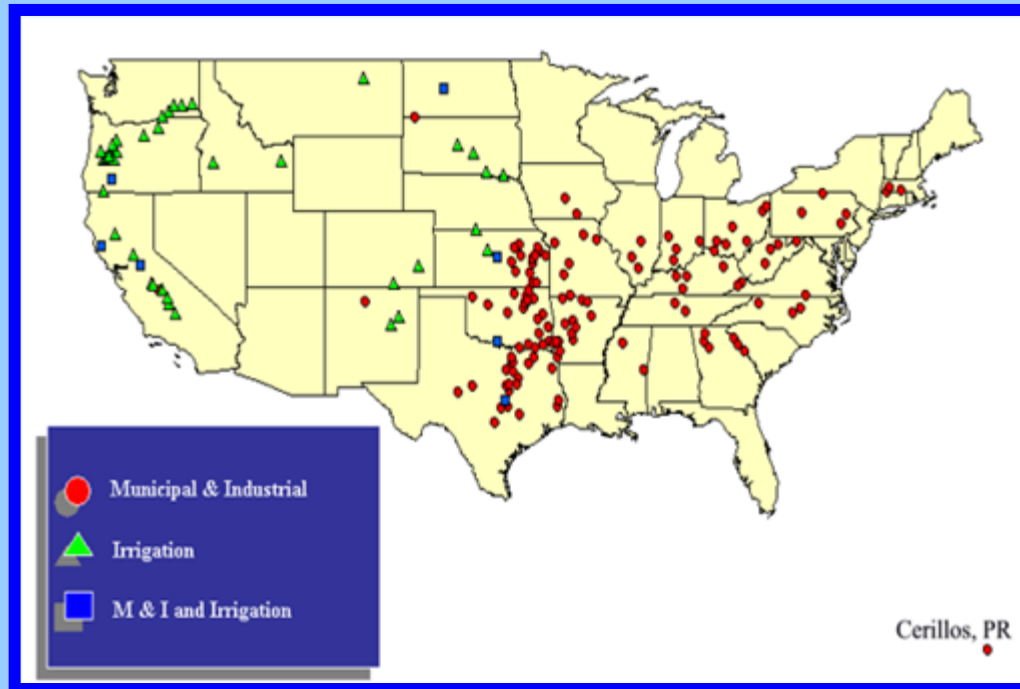




US Army Corps
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The Corps of Engineers Water Supply Program



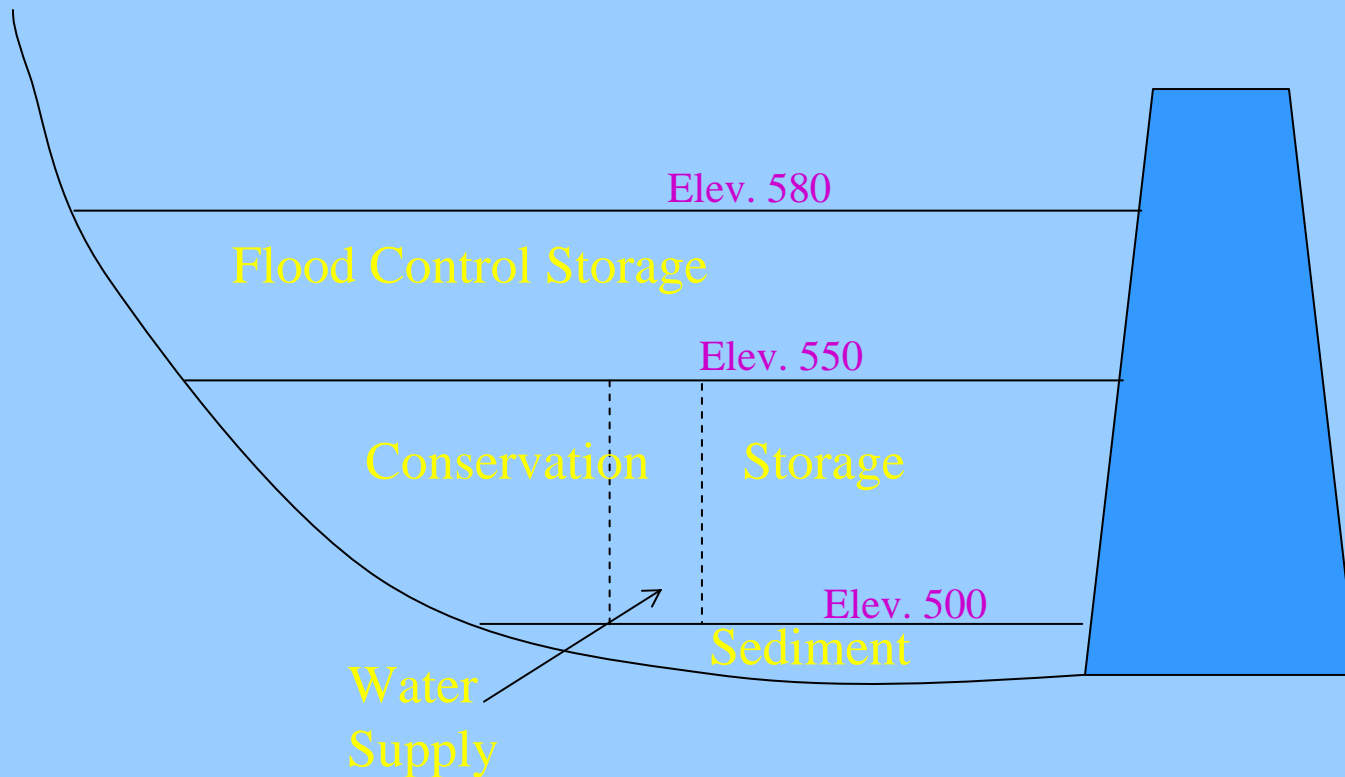
- Authorities
- Policies and
- Guidance

Presented by:
Steve Cone
Institute for Water Resources

Corps Water Supply Workshop
Tulsa, OK
2-3 June, 2009



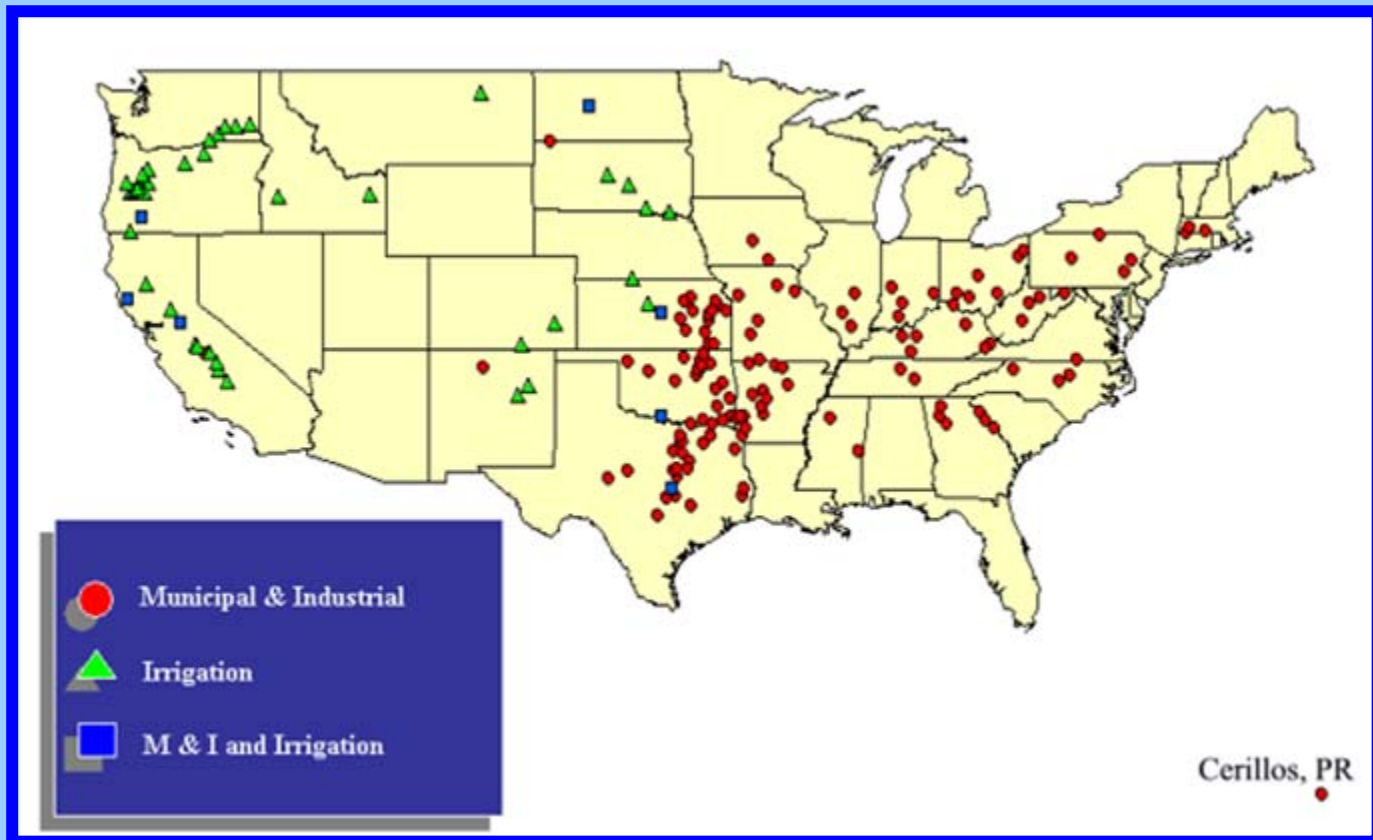
Water Supply in a Multipurpose Project





M&I and Irrigation Projects

Location and Data



www.vtn.iwr.usace.army.mil
Water Supply / Fast Facts



WATER SUPPLY

Primary Authorities

- Section 5 of the Flood Control Act of 1936
(additional storage in FC project)
- Section 6 of the Flood Control Act of 1944
(surplus water)
- Section 8 of the Flood Control Act of 1944
(irrigation water)
- **The Water Supply Act of 1958**
(storage space)
- Project Specific Authorities



WATER SUPPLY

Other Relevant Authorities

- **PL 88-140, 1963 – permits locals to have permanent rights to storage as long as they continue with OMRR&R**
- **Section 931 of WRDA 1986 (PL99-662) – unused M&I water can be used temporarily for irrigation**
- **Section 322 of WRDA 90 (PL 101-640) – provides for a reduced price where cost of reallocated storage has been priced at the updated cost method**

WATER SUPPLY

Primary Authorities

Sec. 6, 1944 FCA: (Surplus Water)

- **Sec Army can enter into agreements for surplus water with states, municipalities, private entities and individuals.**
- **Surplus is defined as:**
 - **water not required for the original purpose because the need never developed or the need was reduced by changes in demand. OR**
 - **water which would be more beneficially used as M&I than for the authorized purpose and which when withdrawn would not significantly affect authorized purposes over some specific time period.**
- **Prices and terms are as the Secretary deems reasonable. We use the same pricing system that is used for reallocations.**
- **Amounts of water are normally small.**
- **Contracts for 5-years with option for renewals with updated costs.**
- **Agreements for M&I but not for crop irrigation.**

WATER SUPPLY

Primary Authorities

Agricultural Water

- **Western States with DOI water facilities**
 - **Sec. 8, 1944 FCA for Western States**
 - **Include irrigation in Corps lakes in 17 contiguous Western States upon recommendation of Sec DOI and in conformity with Reclamation Law.**
 - **DOI constructs, operates and maintains irrigation works and enters into agreements for use of storage.**
- **Eastern States**
 - **Section 103(c)(3) of WRDA '86; Cost shared at 35% of costs + 100% OMRR&R**
- **In Western States – if no BUREC facilities**



WATER SUPPLY

Primary Authority for M&I

**Title III, 1958 R&HA, “The 1958 Water Supply Act”:
(Water Supply Storage)**

- **Act states that water supply is primarily a state and local responsibility.**
- **Include M&I water supply storage in new reservoir projects.**
- **Reallocate storage in existing projects to M&I water supply.**
- **All costs to be repaid by the non-Federal sponsor. Time of repayment varies depending on when authorized.**
- **Modification of projects to add M&I that would seriously affect other authorized purposes require congressional authorization**



WATER SUPPLY

Guidance and References

- **ER 1105-2-100, dated April 2000**
 - ✓ **Paragraph 3-8**
 - ✓ **Appendix E, Section VIII**
- IWR Report 96-PS-4 Water Supply Handbook
- IWR Report – Policy Studies- Water Supply Database 2005 Update (Information)
- Water Supply Policy of the Federal Government – Hearing before the Subcommittee on Water Resources, Apr 26, 1989

WATER SUPPLY

Repayment of Costs under 58 Act, as amended

- **Old Projects (pre-WRDA 86)**
 - **Contracts signed prior to 1986** – 50 years with 1958 interest rate formula
 - **Contracts signed after 1986** – 30 years with 1986 interest rate formula
- **New Projects (post WRDA 86)**
 - **Law permits 30 years** - policy requires to be paid during period of construction
- **Reallocations**
 - **New construction costs** – paid during period of construction
 - **Storage costs** – 30 years with 1986 interest rate formula
- **All “Plumbing” Facilities are Non-Federal** (conveyance, treatment, distribution facilities, etc.)
- **No single purpose water supply reservoirs**
 - at least 20% of benefits from FRD, Nav., Env.
 - Single purpose modifications to existing projects, O.K.



WATER SUPPLY

Reallocation Policy

- Sponsors obtain Permanent Right to Storage
- Cost based on higher of updated cost of storage, revenues foregone, or benefits foregone
- Repayment of Storage Costs over period of 30 years
- Any new construction and mitigation costs paid during modifications
- Share of OMRR&R costs
- Compensation for losses where applicable



Price of Reallocated Storage

Highest of:

1. Benefits foregone
 - opportunity costs from economic evaluation
2. Revenues foregone
 - revenues to Treasury lost due to reduced power production (current power rates)
3. Updated cost of storage in the Federal reservoir



Price of Reallocated Storage (cont.)

3. Updated Cost of Storage =

$$(TC - SP) \times \frac{\text{Storage reallocated (ac-ft)}}{\text{Total usable storage space (ac-ft)}}$$

TC = total costs of construction updated using Civil Works Construction Cost Index System (CWCCIS) and ENR

SP = specific costs = costs of identifiable project features for a specific purpose updated using CWCCIS and ENR



COSTS FOR REALLOCATED STORAGE

- Storage Space:
 - Average \$470 Ac/Ft of space
 - Range from \$90 to \$4,500 Ac/Ft of space
- Yield:
 - Average \$230 Ac/Ft/Yr of yield
 - Range from \$50 to \$980 Ac/Ft/Yr of yield

Opportunities for Reallocation

- Reallocation of Flood Control Storage
- Reallocation of Conservation Storage
 - Water Quality
 - Hydropower
 - Other
- Reallocation of Sediment Pool (temporary)



Reallocation Report Evaluations

1. Water supply demand analysis
2. Storage-Yield analysis
3. Analysis of alternatives to meet net demands
4. Cost of modifications/mitigation
5. Cost/Price for storage determination
6. Determination of Compensation to Others
7. NEPA Analysis/documentation
8. Public participation and public interest review documentation



Compensation for HP Losses

- Army/Corps Policy is to credit HP losses based on Revenues Foregone, based on current rates charged for HP
- Additional Credit for the costs of make-up power may be made, if power has to be purchased to full fill contract requirements due to reallocation for the duration of existing PMA contracts.

REALLOCATIONS

at HP Projects

1965 - 2007

- 21 Projects with Federal HP with 3,700 MW of Name-plate Capacity and 14.8 million acre-ft of conservation pool storage space
- 96 WS Contracts for 405,100 acre-ft of Storage Space
- < 3% of Cons\HP Storage
- Total Impacts on HP - ???

Large Pending Reallocations at Projects with HP

- Lakes Lanier & Allatoona, GA – 240,000 acre-ft
- Lake Cumberland, KY – 32,200 acre-ft
- Lake Texoma OK/TX – 150,000 acre-ft
- Would bring total to about 830,000 acre-ft at 23 Lakes and about 4.5% of Cons\HP Storage.

ISSUES & CHALLENGES

- Increased Demands for Water Supply
- Storage Use Accounting
 - Return Flows and Upstream Reservoirs
- Reallocations for Other Uses
 - In-stream flows and quality – Environmental and Recreation
- Dam Safety and Rehab Costs
- Differences in Corps and PMAs

Differences in Corps and PMAs

- Valuation of Power Losses
 - Corps Uses NED values (current dollars, average availability, power available to all users)
 - PMA Use Financial/Market Based values for their specific customers
- Compensation for Power Losses
 - Corps Uses HP Revenue based values
 - PMAs Prefer Market Based Replacement Cost Values



*Whiskey's
for drinkin':*

*water's for
fightin'*

*--Mark
Twain*

Questions ?