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# SULPHUR RIVER BASIN FEASIBILITY STUDY

**Sulphur River Basin Authority**  
**18 May 2004**  
**Mt. Pleasant, Texas**

*Kevin Craig, P.E.*  
*Chief, Plan Formulation Section*  
*Ft. Worth District*

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# AGENDA

- **Corps of Engineers**
- **Recent Studies in Sulphur Basin**
- **Pending Watershed Study**
- **Next Steps**

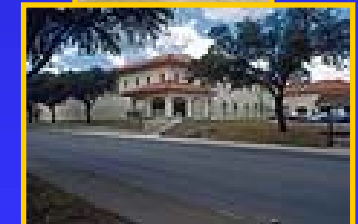
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# Corps of Engineers *Southwestern Division*



**4 districts in all or part of 7 states**

**65 years of service to the southwest**

**3,000 people**

**Civil Works --- 25 projects under construction; 100 projects operated and maintained**

**Military Construction---10 Army and 11 Air Force installations**

**Support for Others --- management for other agencies**

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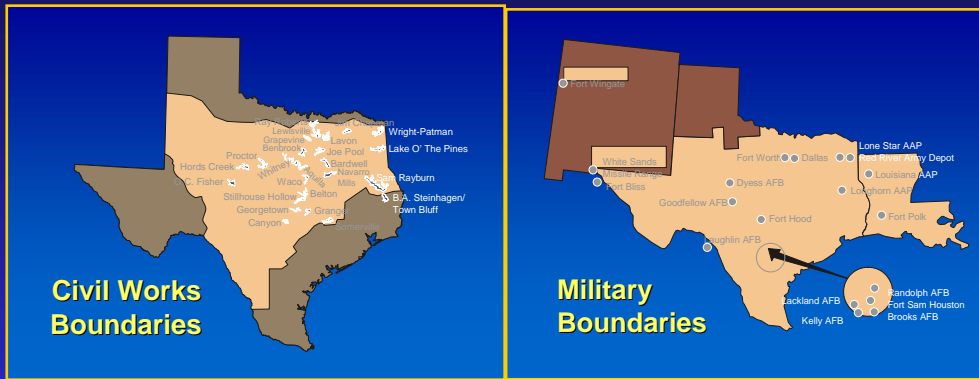


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## Fort Worth District



**Established in 1950      925 people**

**Civil Works --- area of responsibility covers 53% of state, 25 multipurpose projects, 10 river basins, three hydropower plants, 190 parks, serving more than 25 million visitors a year**

**Military Construction---10 Army and 7 Air Force installations**

**Environmental Support---to seven Major Commands including 60 Army and Air Force Installations**

**Support for Others--- management for other government agencies including Environmental Compliance support for eleven different Federal Agencies**

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## *Civil Works Missions*

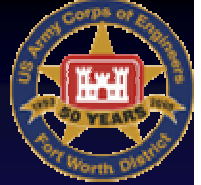
- **Primary Missions**
  - *Flood Damage Reduction*
  - *Ecosystem Restoration*
  - *Navigation*
- **Secondary Missions**
  - *Water Supply*
  - *Hydropower*
  - *Water Quality*
  - *Recreation*

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# RECENT STUDIES

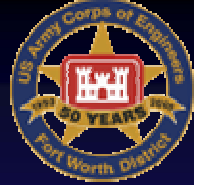
- **Reconnaissance Study (Corps)**
- **Texas Senate Bill 1**
  - *Marvin Nichols Study (SRBA)*
  - *System Assessment (Corps)*

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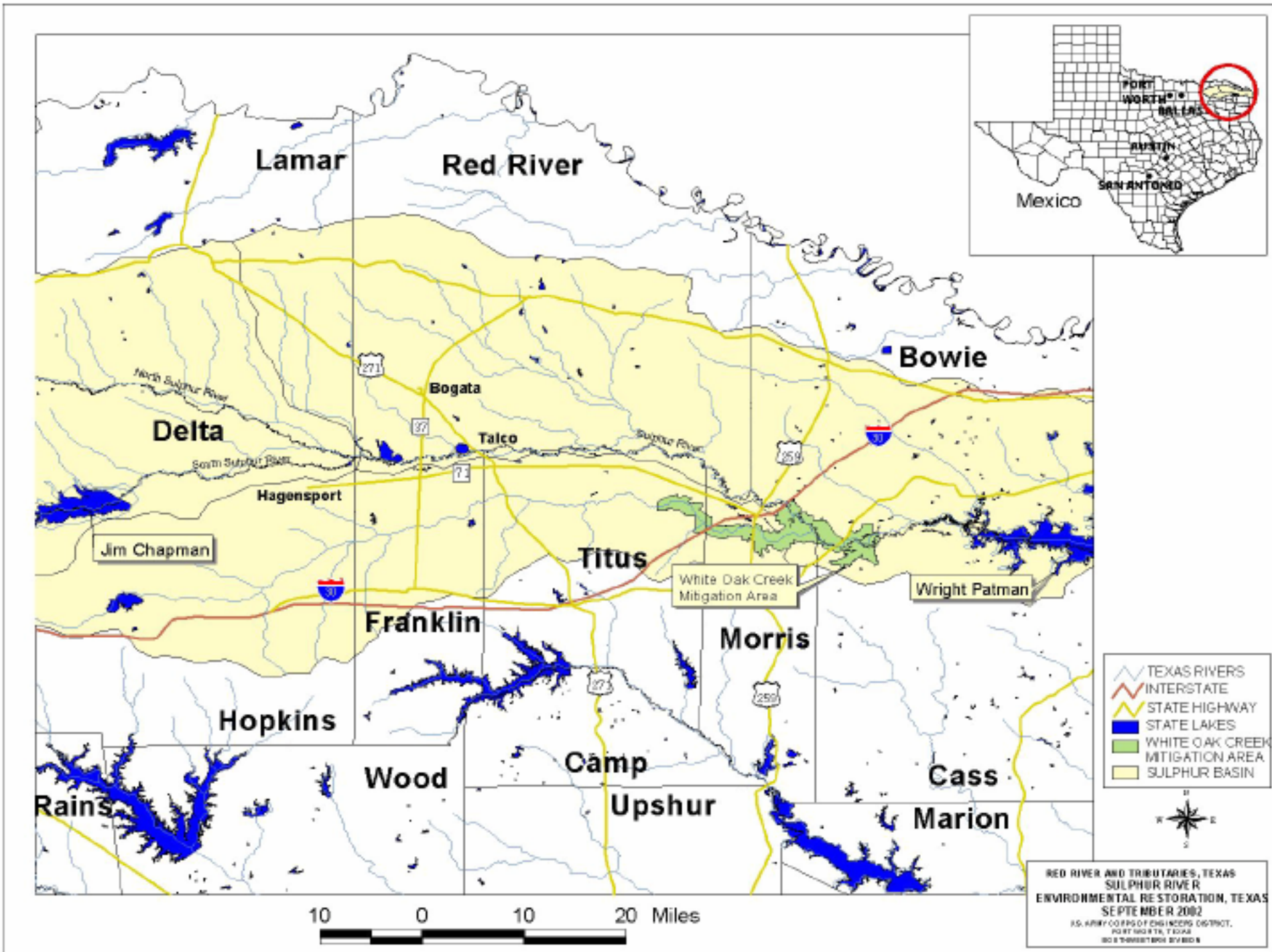
# RECENT STUDIES

## *Reconnaissance Study*

- **Initiated February 1999**
  - *Congressional add in appropriations bill*
- **Purpose:**
  - *Identify water resource problems, needs, and opportunities, with emphasis on “logjam”*
  - *Identify Federal interest*
  - *Identify potential non-Federal sponsor*
- **Initial Draft Report Completed November 1999**
  - *Federal interest identified*
  - *No non-Federal sponsor*

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RED RIVER AND TRIBUTARIES, TEXAS  
 SULPHUR RIVER  
 ENVIRONMENTAL RESTORATION, TEXAS  
 SEPTEMBER 2002  
 U.S. ARMY CORPS OF ENGINEERS DISTRICT,  
 FORT WORTH, TEXAS  
 503 TRIBUTARY BRN BY RBD-B











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# RECENT STUDIES

## *Texas Senate Bill 1*

- **Legislation Passed in 1997**
  - *State divided into 16 Regional Water Planning Groups*
- **Purpose:**
  - *Identify future water demands (50-year outlook)*
  - *Identify future water supplies*
  - *Identify water management strategies*
- **Initial State Water Plan Approved in 2002**
  - *Sulphur River Basin key factor in Water Plan*
  - *Marvin Nichols Reservoir initially identified as recommended strategy by Regions C and D*

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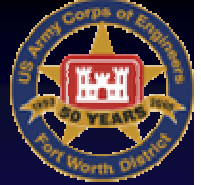
# RECENT STUDIES

## *Marvin Nichols Reservoir Study*

- **Initiated in 2001**
  - *SRBA and Region C entities active in study*
- **Purpose:**
  - *Identify optimal site for construction of reservoir*
  - *Identify economic impacts of reservoir*
  - *Prepare preliminary design of reservoir*



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# RECENT STUDIES

## *Texas Water Allocation Assessment (TWAA)*

- **Initiated in 2001**
  - *Congressional add - 100% Federally funded*
- **Purpose:**
  - *Assist the State of Texas in determining if existing water can be better allocated to support more balanced water use to meet future needs*
- **Sulphur Initiatives under TWAA:**
  - *System Assessment – Wright Patman / Jim Chapman*
  - *Preliminary Instream Flow Analysis*

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# RECENT STUDIES

## *TWAA - System Assessment*

- **Investigated Potential Additional Yield of Basin System**
  - *Stand-alone operations for each reservoir*
  - *System operation of both reservoirs*
- **Investigated Potential Impact to White Oak Creek Mitigation Area**
- **DID NOT investigate:**
  - *Impacts to environmental/cultural resources*
  - *Impacts to recreational facilities*
  - *Impacts to water supply contracts*
  - *Impacts to seasonal flood control operations*

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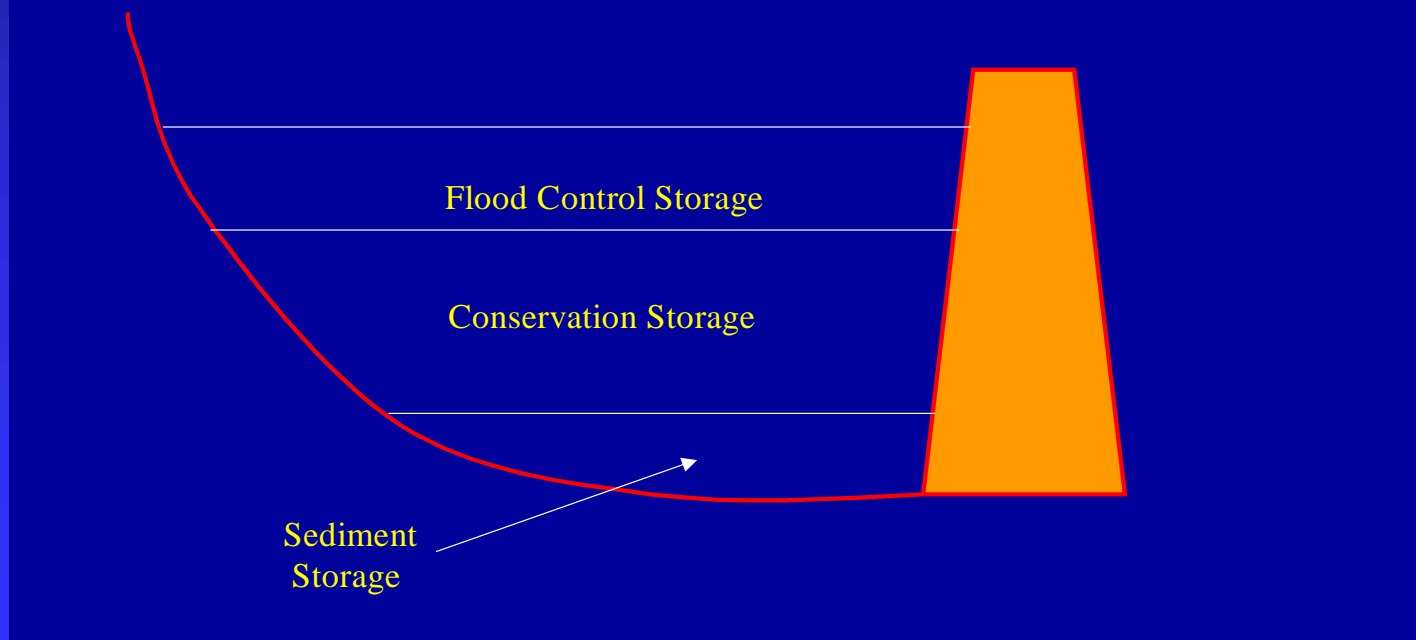
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# RECENT STUDIES

## *TWAA - System Assessment*

### Cross Section of Storage Pools



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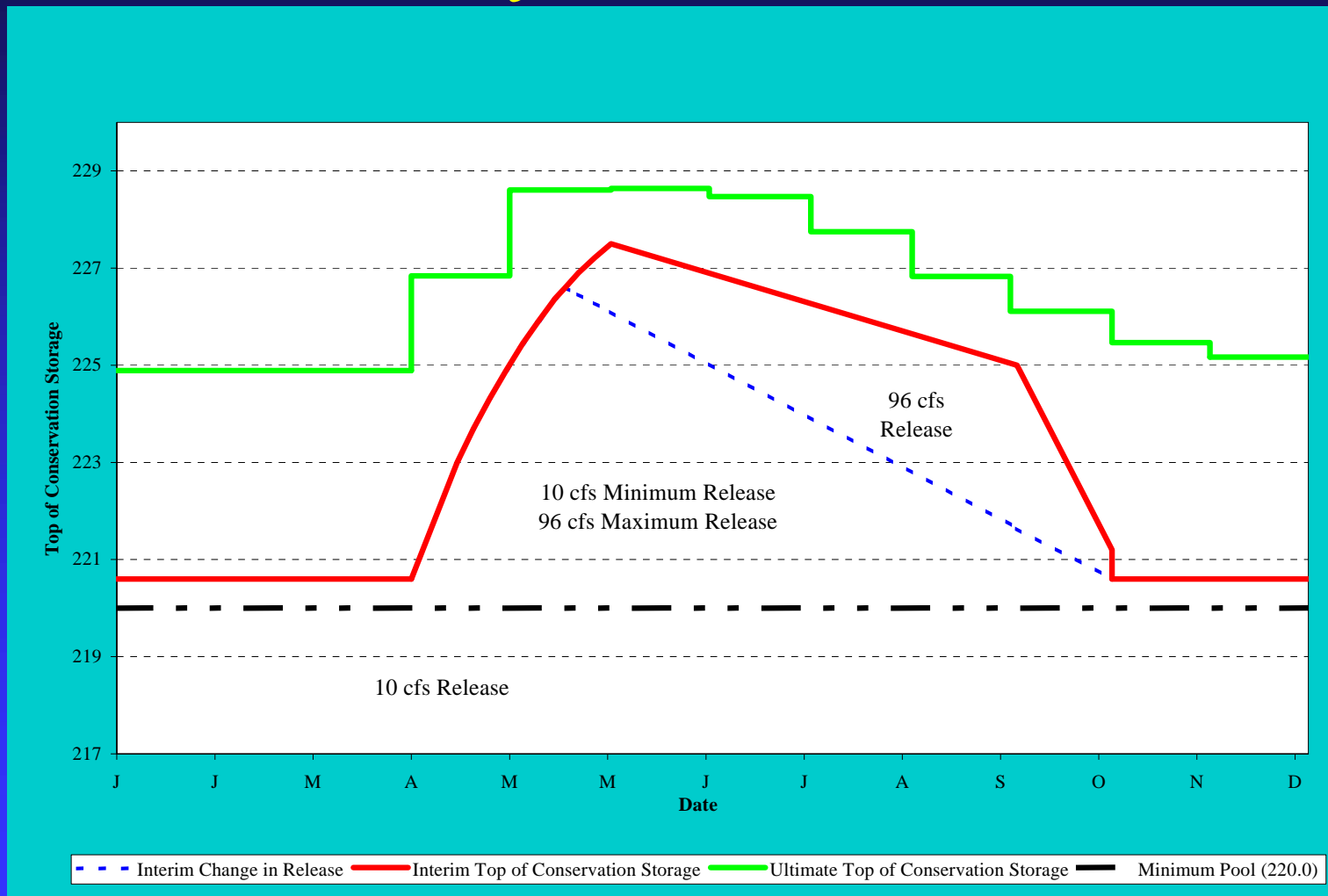


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# RECENT STUDIES

## *TWAA – System Assessment*



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# RECENT STUDIES

## *TWAA – System Assessment*

<b>Alt</b>	<b>Patman - Minimum Cons. Pool Elev.</b>	<b>Patman - Top of Cons. Pool Elev.</b>	<b>Pump Capacity (MGD)</b>	<b>System Yield (ac-ft / year)</b>	<b>Additional Yield (ac-feet / year)</b>
1	217.50	Interim Rule	N/A	232,997	-
2	215.25	Interim Rule	N/A	282,805	49,808
3	215.25	Ultimate Rule	N/A	430,180	197,183
4	215.25	Flat -228.64	N/A	492,317	259,320
5	215.25	Flat - 228.64	300	601,256	368,259

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# RECENT STUDIES

## *TWAA – System Assessment*

- **Conclusions:**
  - *Existing reservoir system provides potential opportunity for additional yield through operation modifications and reallocation of storage*
  - *Further detailed studies are required prior to selection and implementation of plan determined to provide optimal use of existing water resources*



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# PENDING WATERSHED STUDY

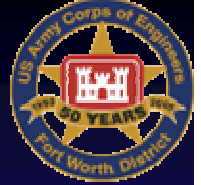
- **Objectives**
- **Process**
- **Scope**

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# WATERSHED STUDY

## *Objectives*

- **To Reduce Flood Damages within the Basin**
- **To Restore Ecosystem Values and Functions to Sustainable, Less Degraded Condition**
- **To Identify Optimal Use of Water in the Basin**

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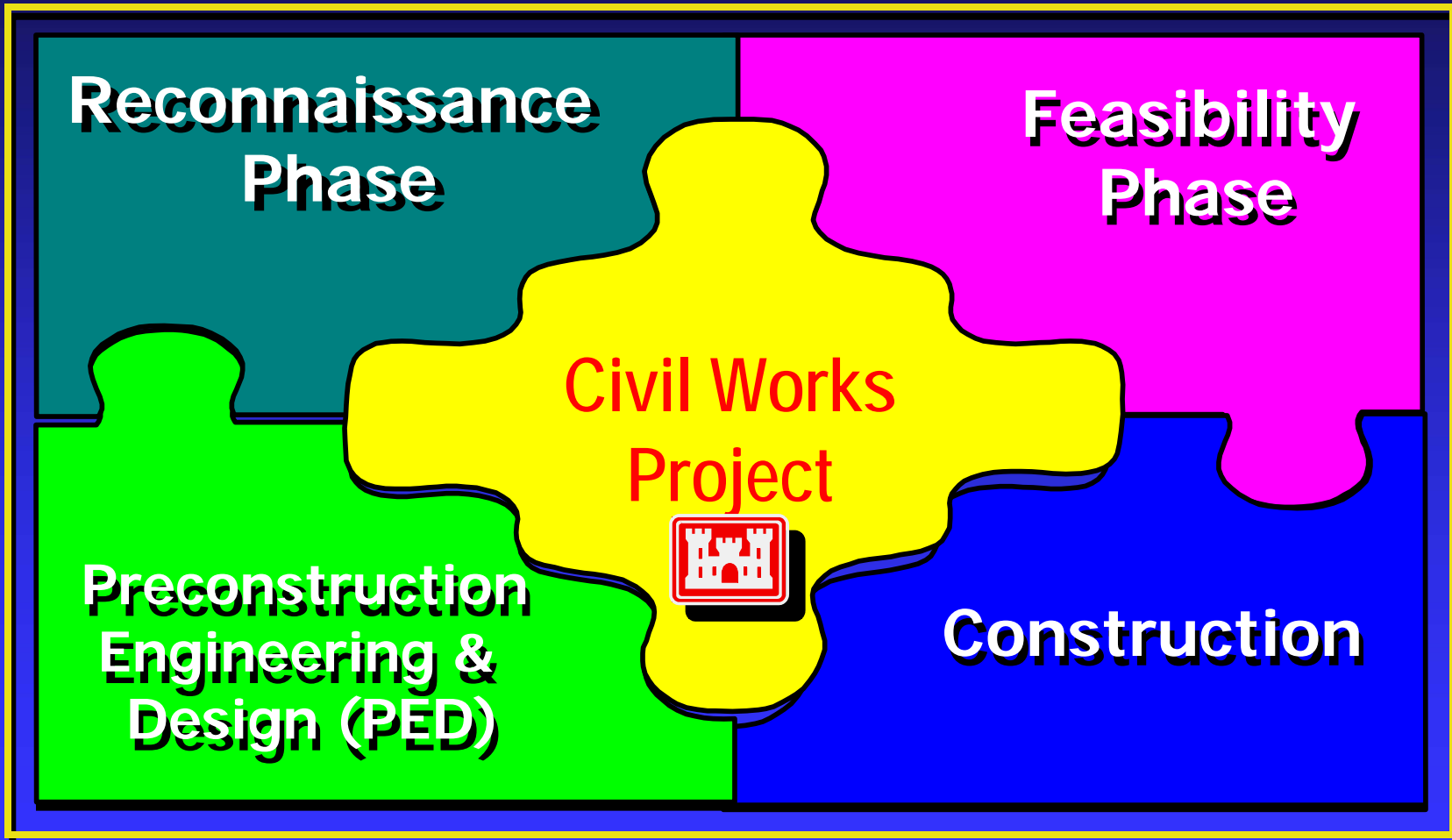
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# WATERSHED STUDY

## *Process*



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# WATERSHED STUDY

## *Process*

- **Reconnaissance Study**
  - *100% Federally Funded*
  - *Letter of Intent – Nov. 18, 2003*
  - *Report Submitted – Feb. 27, 2004*
  - *Report Certified – Apr. 15, 2004*
- **Feasibility (Watershed) Study**
  - *50/50 Cost Shared (Fed / non-Fed)*
  - *Conducted in Phases*
    - Provides for multiple checkpoint meetings
    - Promotes extensive public involvement
  - *Identification of Recommended Plan*
  - *Preparation of Feasibility Report / EIS*
  - *Submittal to Congress, if necessary*

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# WATERSHED STUDY

## *Scope*

- **Phase I**
  - ***Existing/Future Without Project Conditions***
    - Hydrology & Hydraulics
    - Environmental Resources
    - Cultural Resources
    - Economics
    - Recreation Facilities
  - ***Public Involvement***
    - Workshops
    - Meetings
  - ***Independent Technical Review***
  - ***Feasibility Scoping Meeting (FSM)***

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# WATERSHED STUDY

## *Scope*

- **Phase II**

- ***Plan Formulation***

- o Flood Damage Reduction

- ✓ *logjam, agricultural levees, other*

- o Ecosystem Restoration

- ✓ *logjam, North Sulphur meanders, other*

- o Optimal Water Use

- ✓ *reallocation, potential new reservoirs, combinations*

- ***Public Involvement***

- ***Independent Technical Review***

- ***Alternative Formulation Briefing (AFB)***

- ***Feasibility-Level Design / Cost Estimate***

- ***Final Feasibility Report***

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# NEXT STEPS

- **Complete Project Management Plan (PMP)**
  - *Scope*
  - *Schedule*
  - *Budget*
  - *Quality Control Plan*
- **Execute Feasibility Cost Sharing Agreement (FCSA)**
- **Initiate Feasibility Study**

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# CONCLUSION

- **Sulphur Basin Key Component in State Water Plan**
- **Watershed Study Allows Comprehensive Analysis of Alternatives to Meet Multiple Objectives**
  - *Flood Damage Reduction*
  - *Ecosystem Restoration*
  - *Water Supply*
- **Partnering with Corps Allows Leveraging of Local Funds**

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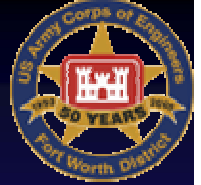


# QUESTIONS ?

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# CONTACT INFORMATION

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