

Bear Branch Dam Modification Project

**Presented By
Bret Raley
Greg Lushbaugh, P.E.**

BACKGROUND

Created - 1937 by the Texas Legislature - *To develop, conserve, and protect the water resources of the San Jacinto River Basin*

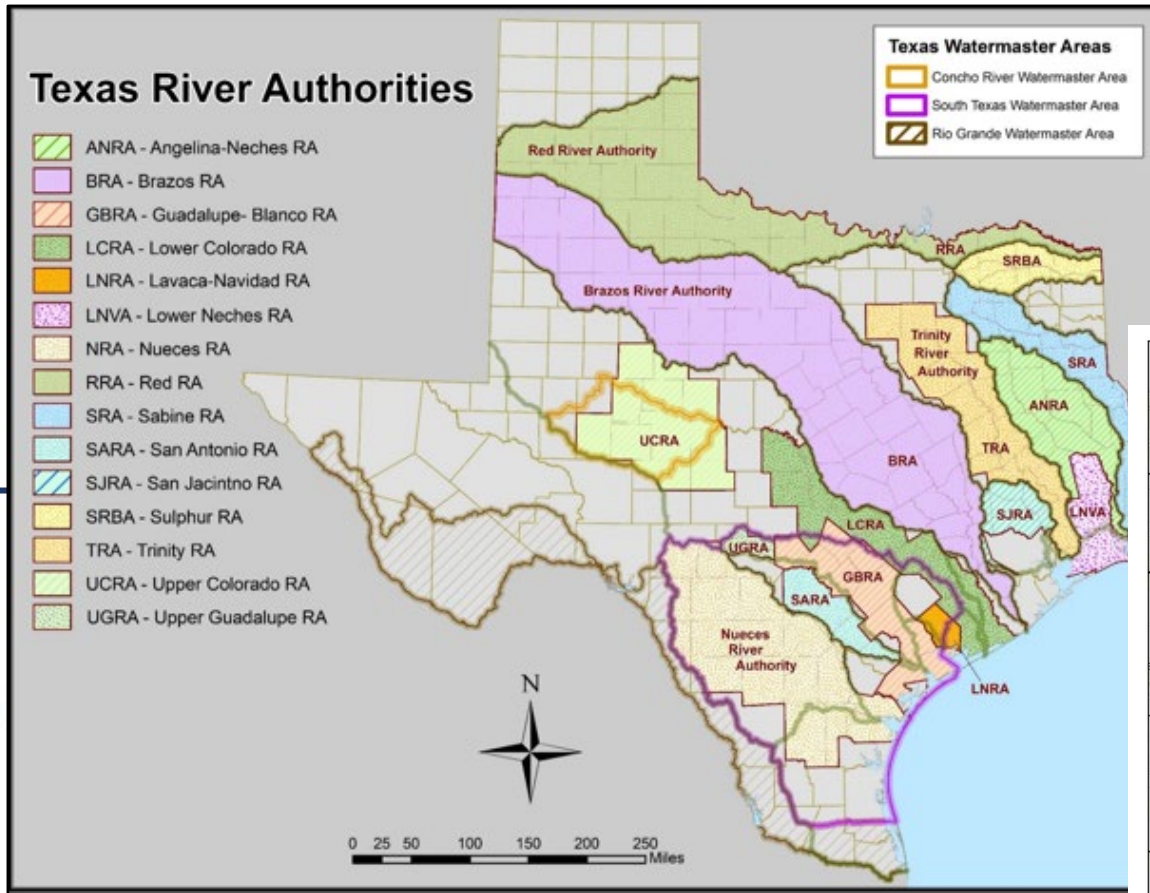
Mission - To implement long-term, regional projects related to water supply and treatment

Authorization – Broad but limited funding
Dependent on customer contracts
No tax revenue or state appropriations

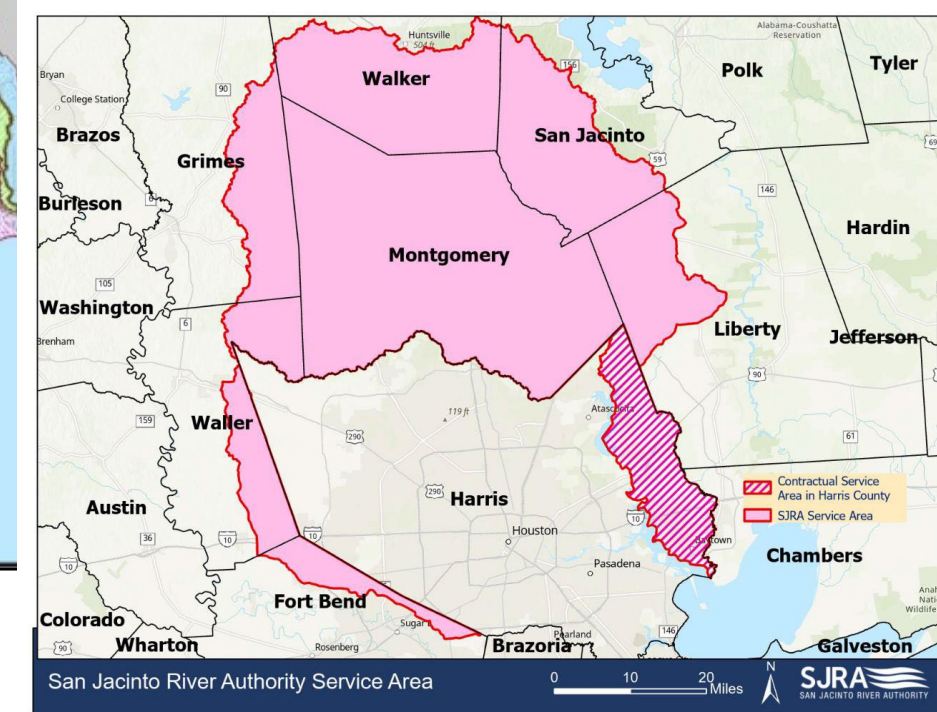
SAN JACINTO RIVER AUTHORITY



(Budget)



Service Area



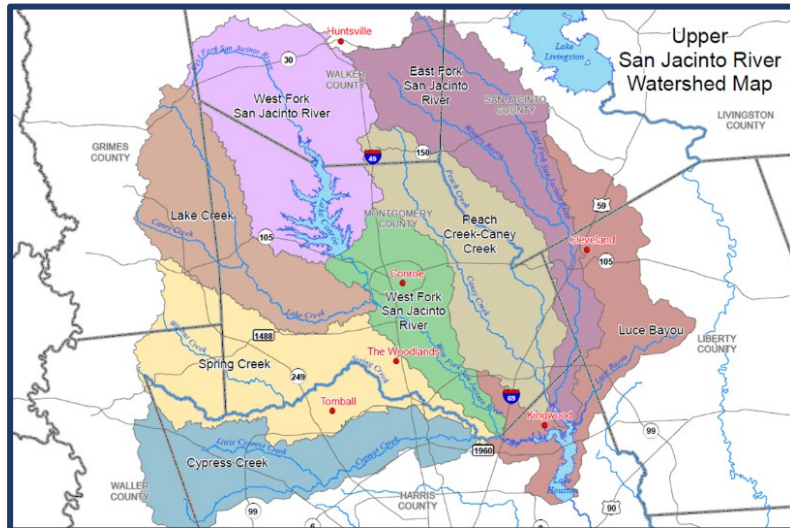
SJRA OPERATIONAL DIVISIONS



Highlands



Lake Conroe



Flood Management



Woodlands

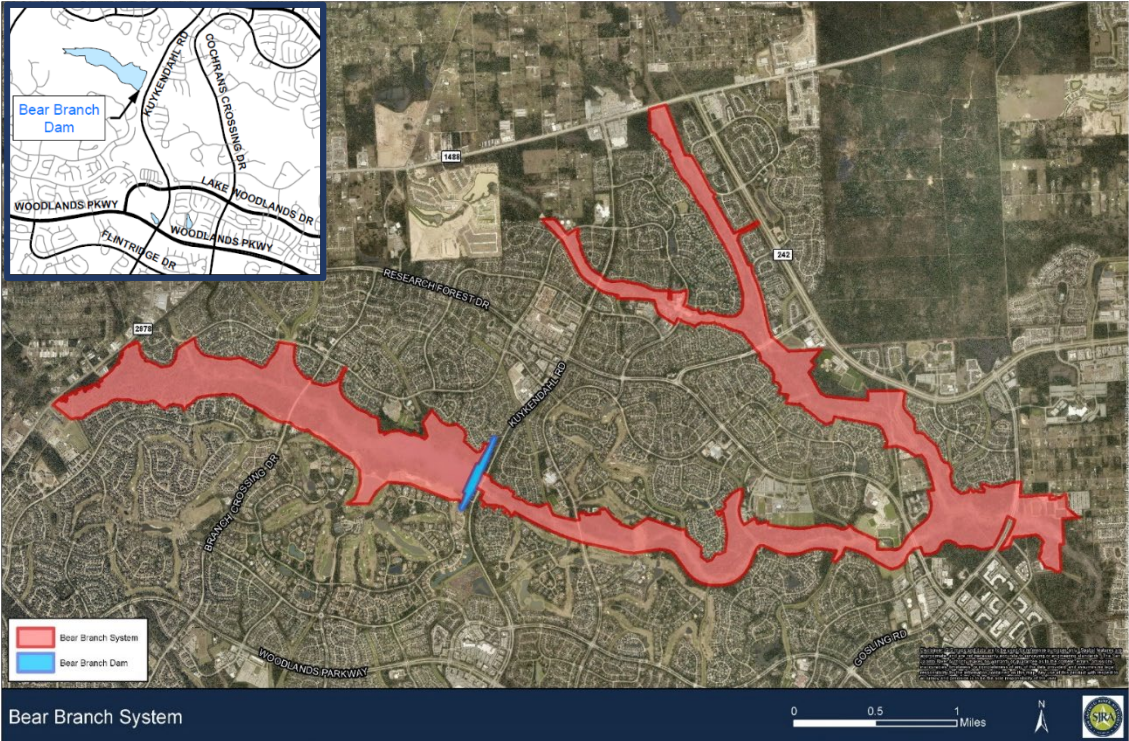


GRP

LAKE CONROE DIVISION RESPONSIBILITIES



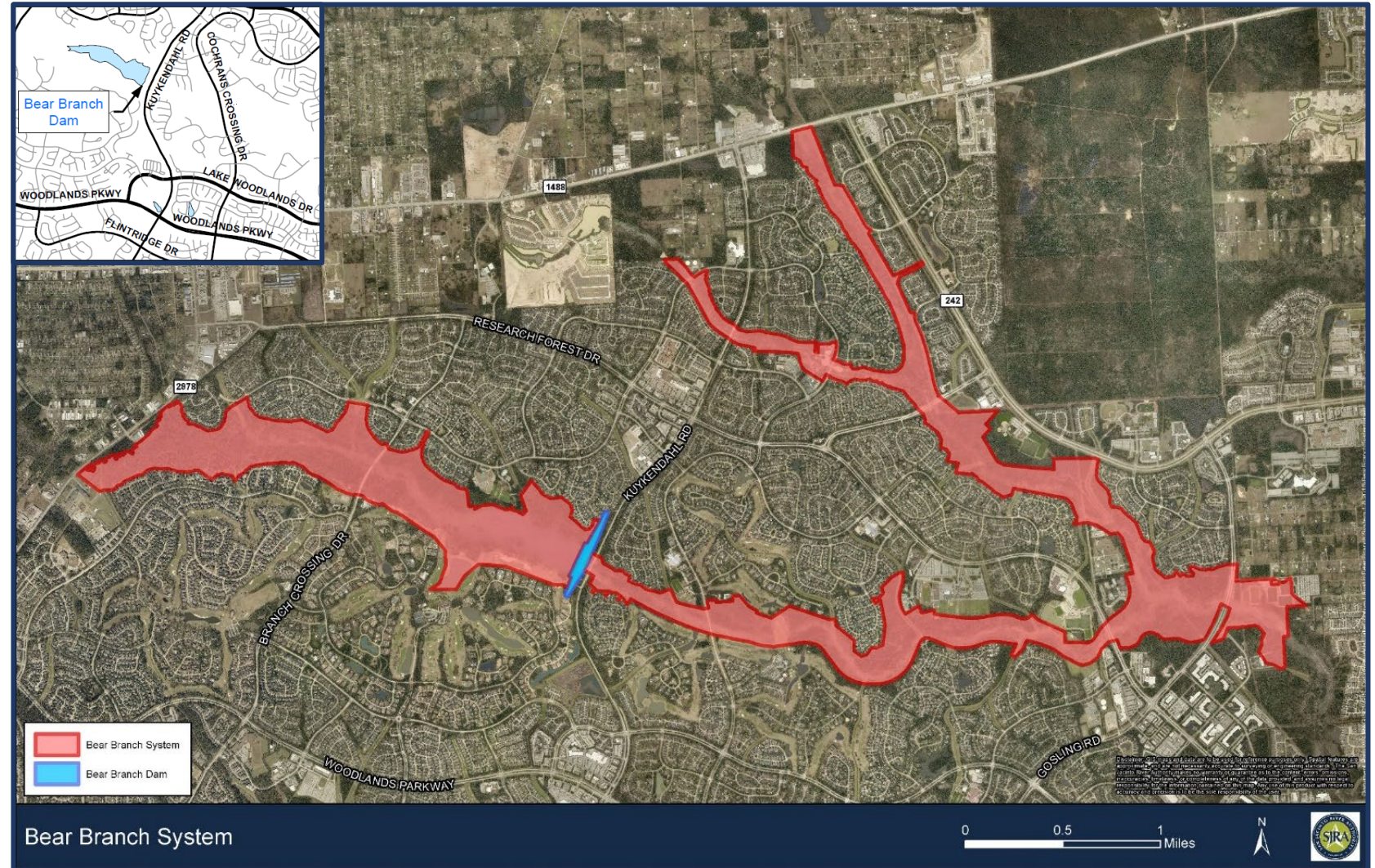
O&M Lake Conroe Dam/Reservoir



O&M Bear Branch Reservoir System

BEAR BRANCH RESERVOIR SYSTEM

- Dam and Reservoir
- Floodway Corridor
 - Alden Branch
 - Panther Branch and
 - Bear Branch

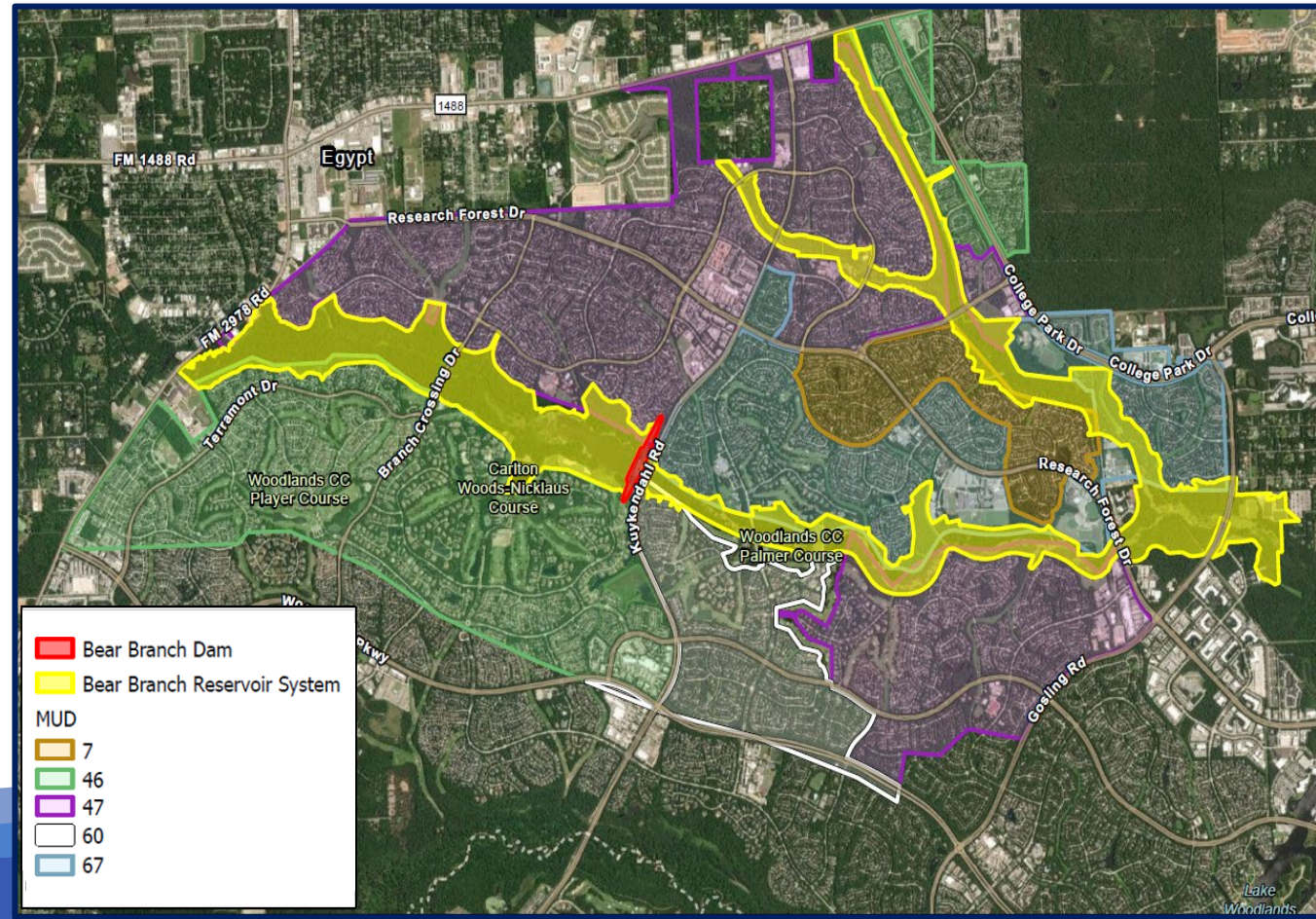


BEAR BRANCH RESERVOIR SYSTEM

Operations/Maintenance and Capital Improvements

SJRA is under contract w/ five participating MUDs.

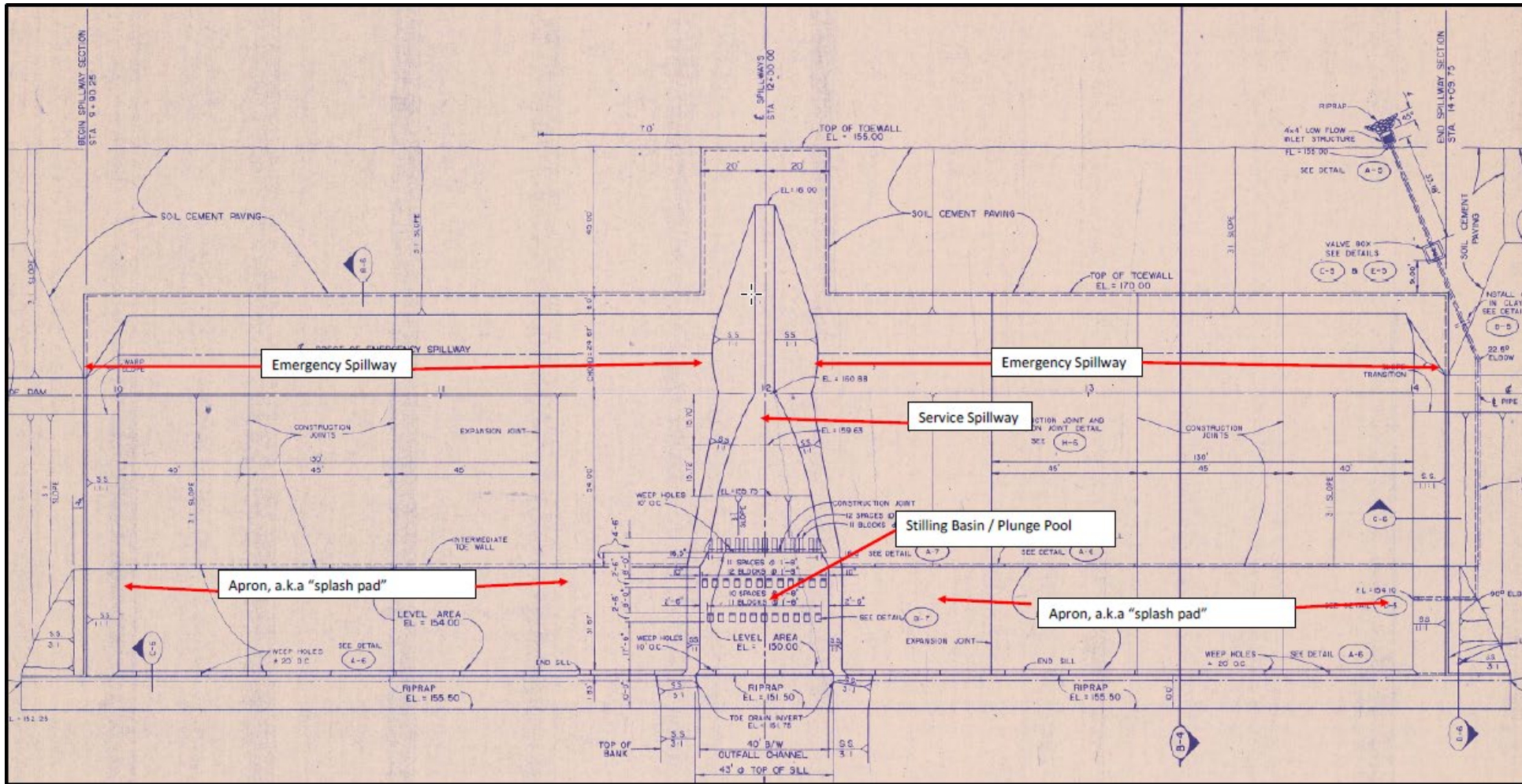
- Repairs, Parts
- Supplies, Materials & Utilities
- Professional Fees
- Salaries, Wages & Benefits
- General & Administrative



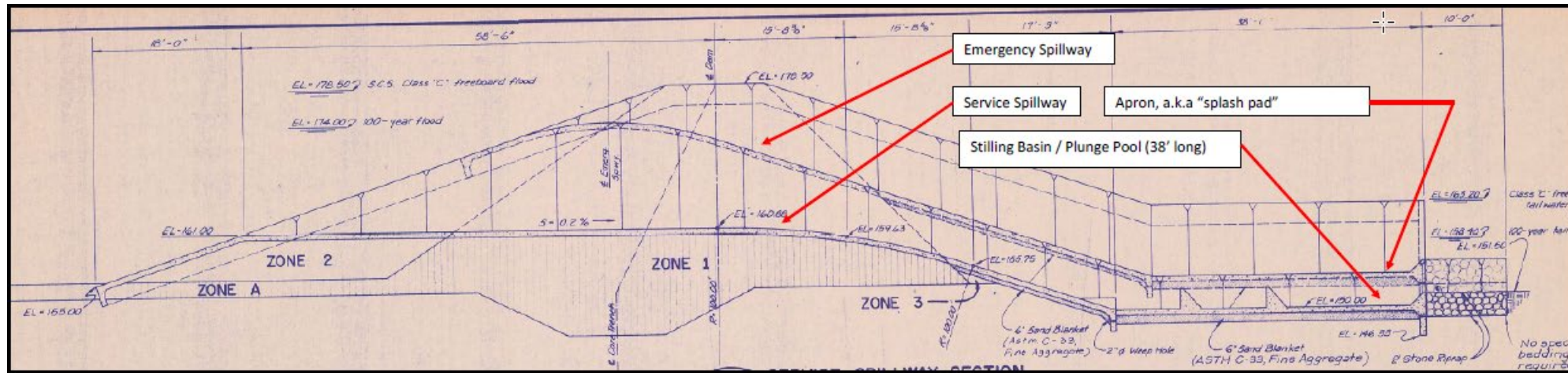
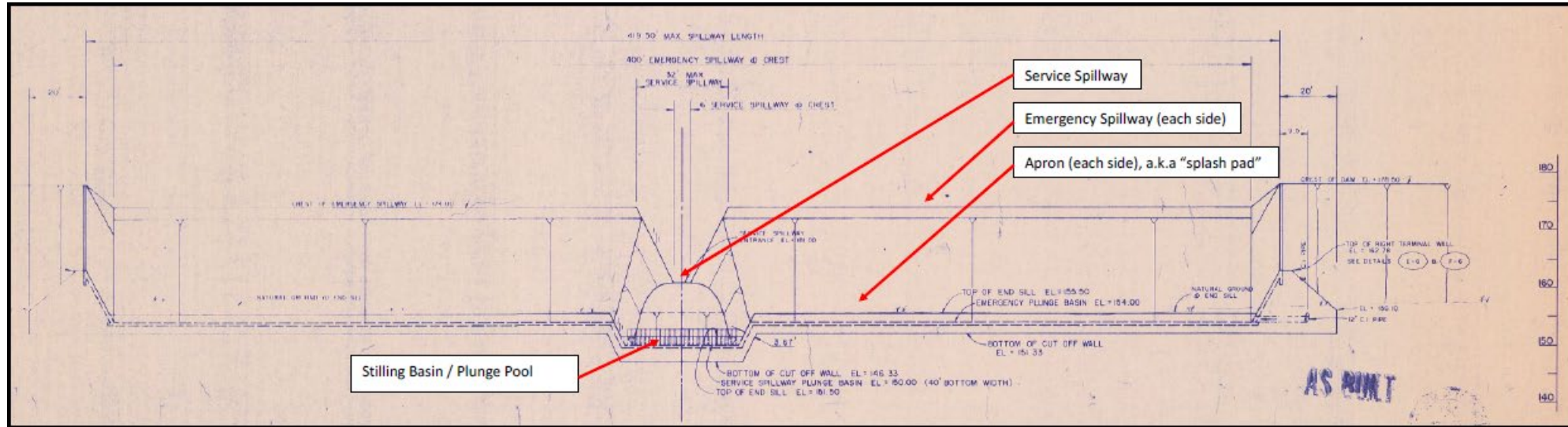
BEAR BRANCH DAM



BEAR BRANCH DAM



BEAR BRANCH DAM



ROUTINE MAINTENANCE

- **Inspections**

- In-house & TCEQ 5-year
- Continuous monitoring of soil cement for signs of degradation

- **Concrete Repairs**

- Joints
- Cracks
- Spalls



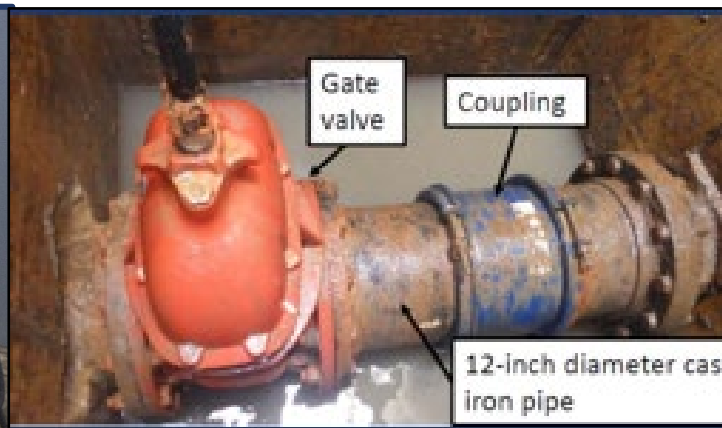
- **Grounds**

- Weeds/grass
- Invasive species



PRIOR CAPITAL PROJECTS

- Discharge channel rehabilitation
- Low-flow valve replacement
- Low-flow vault hatch replacement



2021

5-YEAR INSPECTIONS

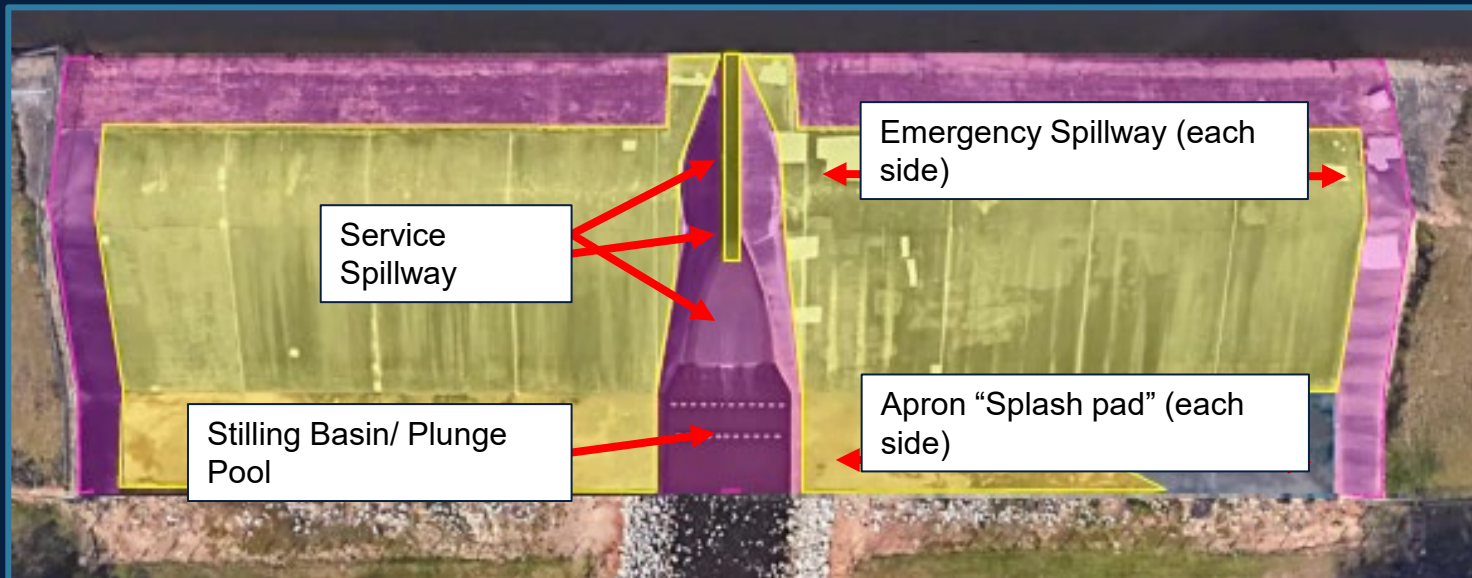
- **Soil Cement**
 - Repair/replace within next five years
 - Has reached its design life
 - Showing advanced signs of deterioration
- **Voids (beneath service spillway/plunge basin)**
 - Perform sub-surface exploration (GPR) w/in next five years
 - Drill small holes and probe
 - A chemical grouting program could be designed



SPILLWAY VOID INVESTIGATION

Bear Branch Void Investigation

FY 2022 Phase	Planning
FY 2022 Budget	\$250,000
Total Project Estimate	\$250,000



SPILLWAY VOID INVESTIGATION SCOPE

Notice to Proceed - September 1, 2021

Task 1: Project Management

Task 2: Void Investigation

- Coring
- Spillway Joint Investigation
- Technical Memorandum

Deliverables

- Coring Report
- Technical Memorandum

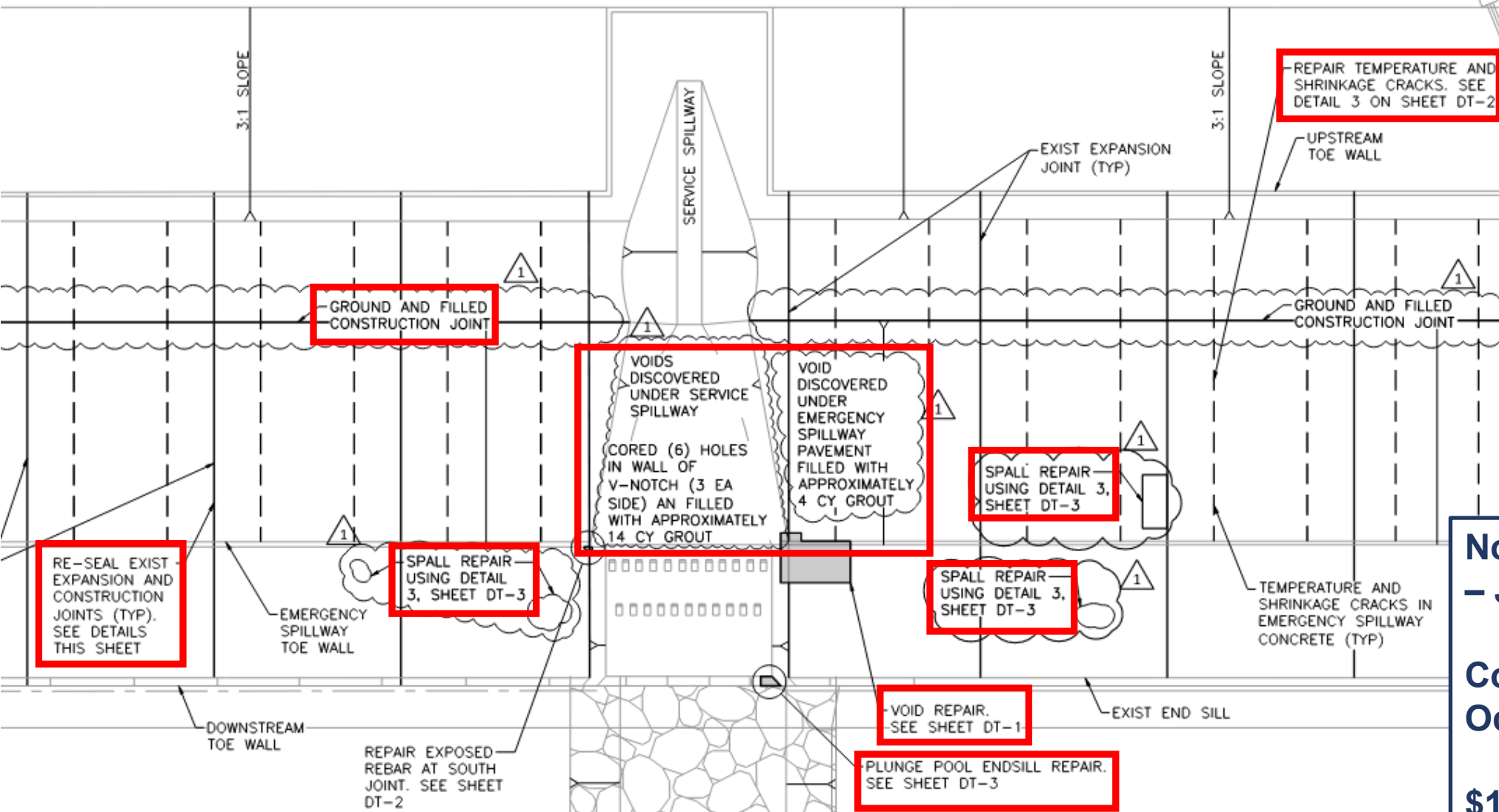
Completion - January 15, 2022

\$47,638.00



Auxiliary Spillway

CONCRETE/VOID REPAIRS

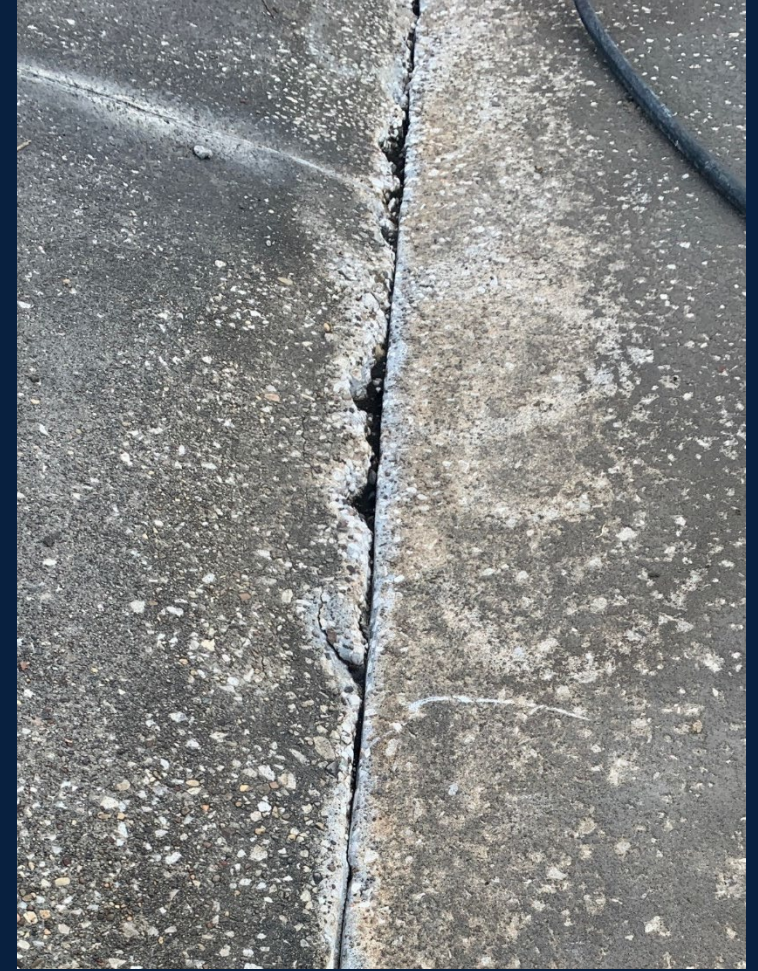
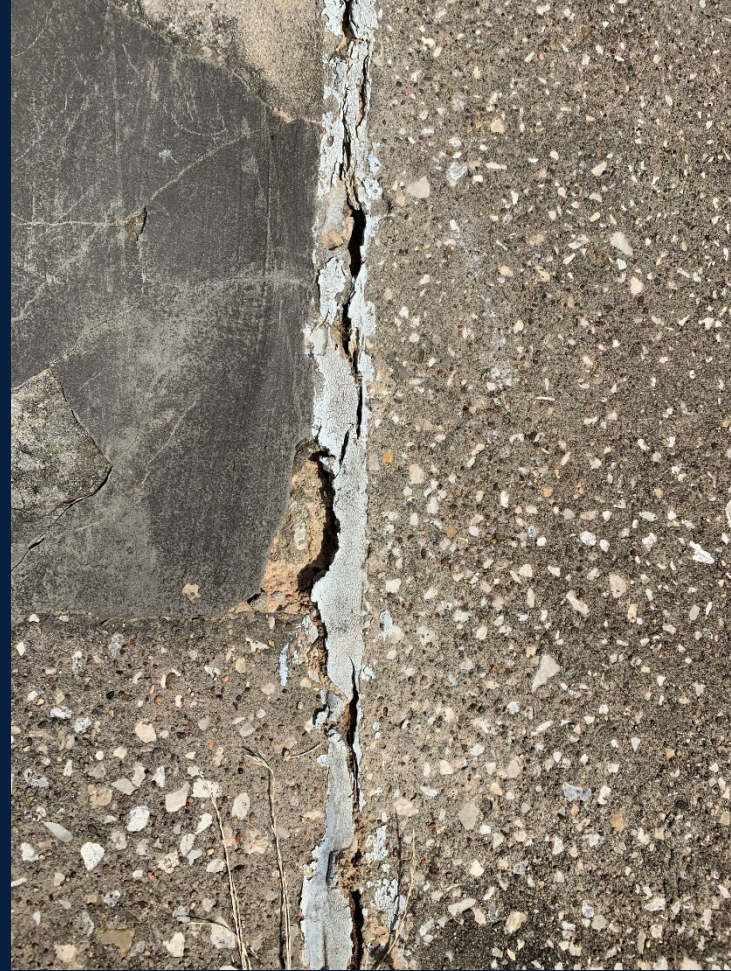


**Notice to Proceed
– July 11, 2022**

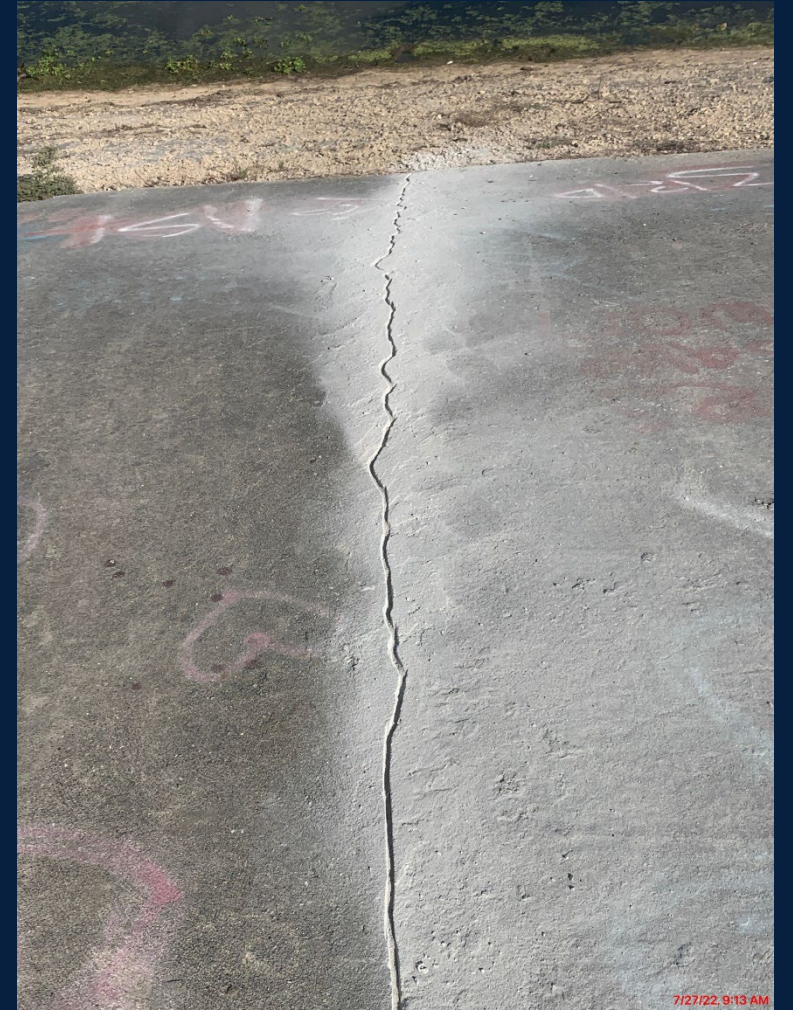
**Completion –
October 10, 2022**

\$167,690.00

CONCRETE/VOID REPAIRS



CONCRETE/VOID REPAIRS



CONCRETE/VOID REPAIRS



CONCRETE/VOID REPAIRS



BEAR BRANCH DAM MODIFICATION

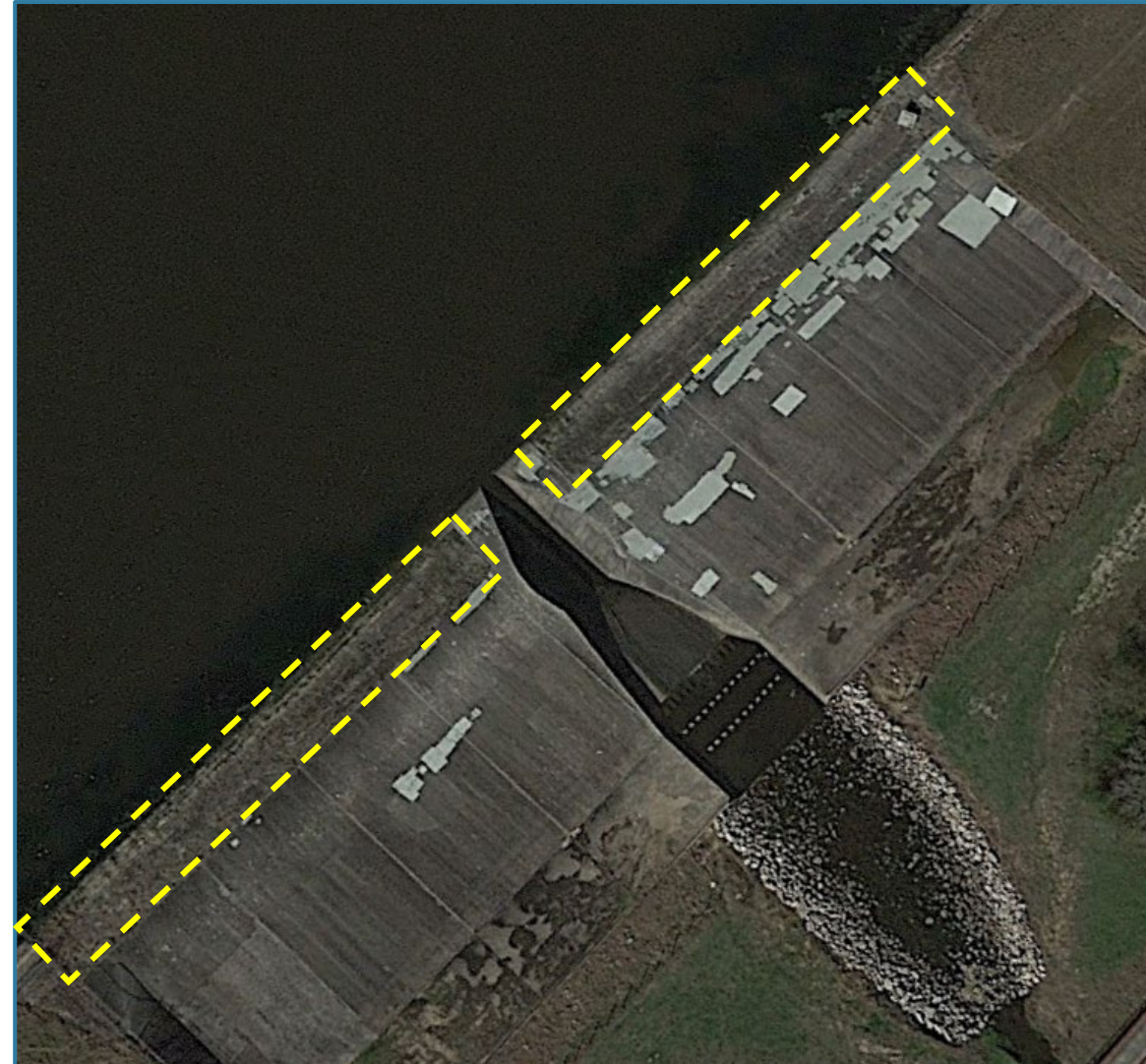
Bear Branch Dam Soil Cement Repairs

Project Period

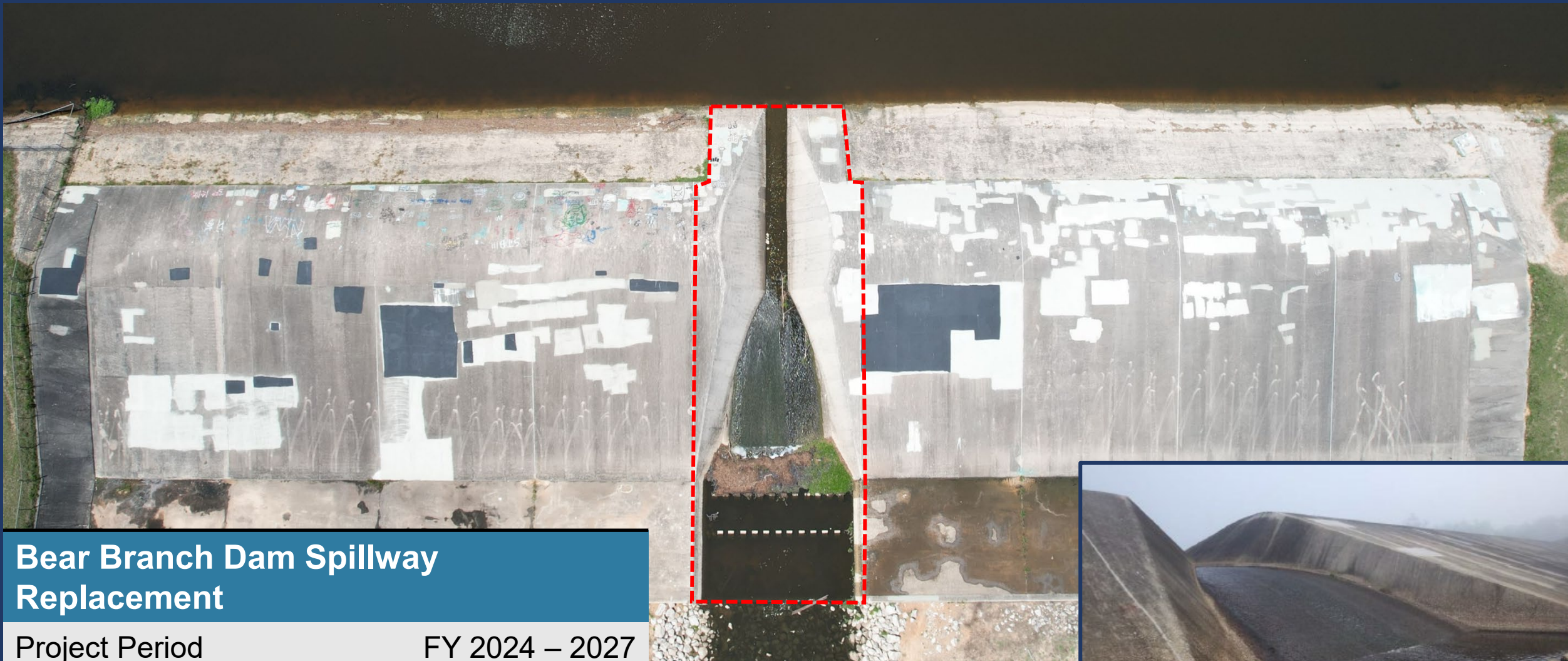
FY 2024 - 2027

Total Project Estimate

\$1,918,000



BEAR BRANCH DAM MODIFICATION



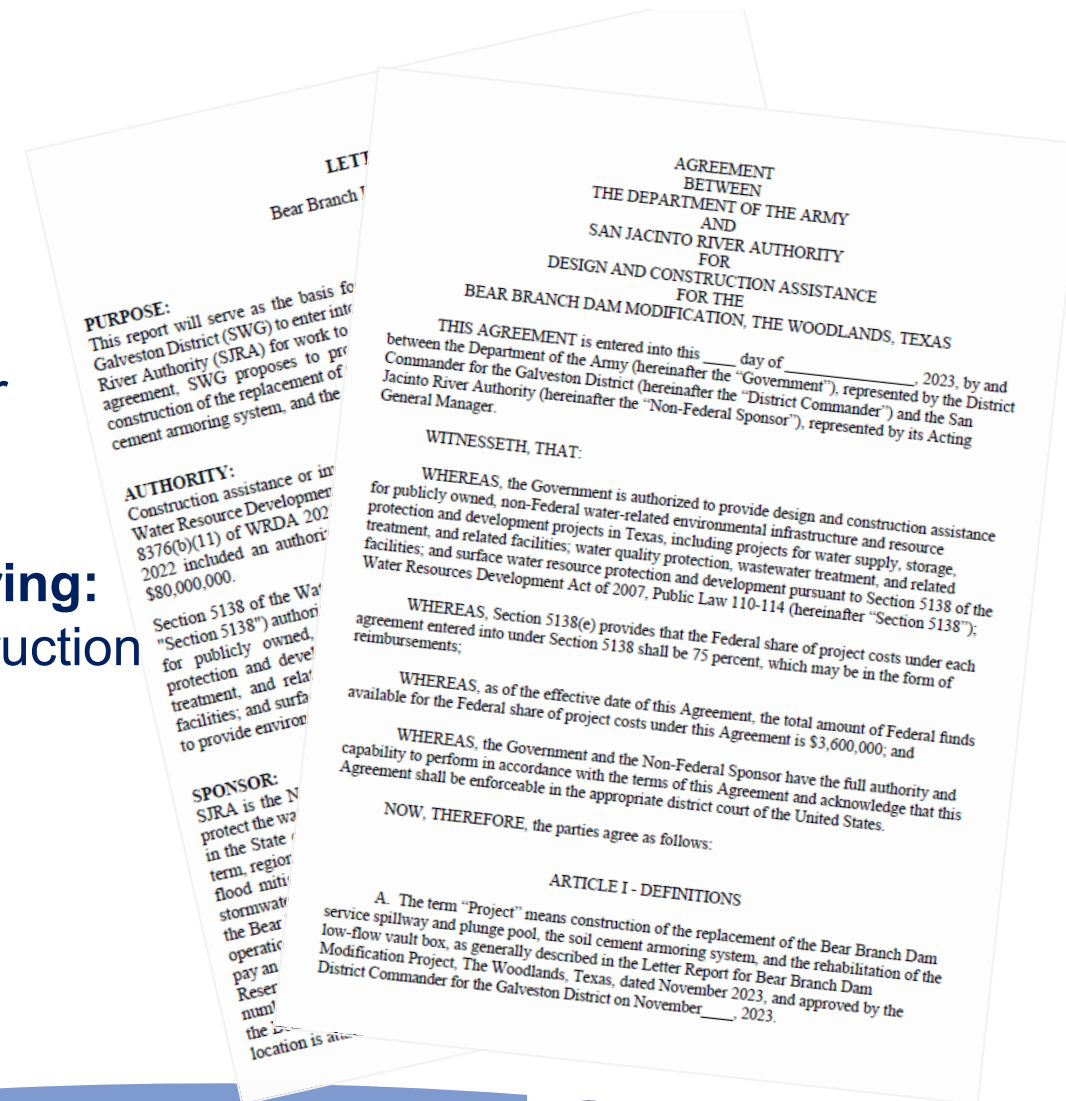
Bear Branch Dam Spillway Replacement

Project Period	FY 2024 – 2027
Total Project Estimate	\$3,132,000



BEAR BRANCH DAM MODIFICATION PROJECT

- **Repair/Replace Service Spillway and Soil Cement Armoring**
- **Project Partnership Agreement:**
 - SJRA/USACE contract authorizing \$3.6M (\$3.25M for SJRA and \$350k for USACE administrative costs)
- **Professional Services Agreement, Schnabel Engineering:**
 - Will cover preliminary design, final design, and construction phase services
- **Work Order No. 1, Preliminary Engineering:**
 - Evaluation of Spillway Alternatives
 - Surveying
 - Preliminary Coordination with USACE
 - Preliminary Coordination with TCEQ



DRAFT

PRELIMINARY ENGINEERING REPORT

- Spillway was constructed with a relatively thin concrete slab and without adequate joint details (i.e. water-stop, dowels, continuous reinforcement across the joint, etc.).
- Prior repairs to auxiliary spillway voids, joints, and concrete have not been durable.

**Bear Branch Soil Cement Repairs and
Service Spillway Replacement
The Woodlands, Texas**

Schnabel Reference 23220010.000
September 6, 2024

Prepared for:
San Jacinto River Authority
Conroe, Texas

Prepared by:
Schnabel Engineering, LLC
TBPE Registration No. 17846
12301 Research Boulevard, Building 4, Suite 150
Austin, Texas 78759

PATH FORWARD

- **Review/comment on PER**
- **Discuss PER w/ stakeholders**
- **Considerations**
 - Partial vs. full spillway replacement
 - Funding
- **Schedule**
 - Notice to Proceed (PER) – March 19, 2024
 - Final PER – October 25, 2024
 - Design Completion – FY 2026
 - Construction Completion – FY 2027

CONTACT INFORMATION

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