



# ***Project Delivery Update***

***Presented by  
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# Risk Based Capital Planning and Management Support



**Morris Sheppard Dam  
Possum Kingdom Lake**



**East Williamson County  
Water System**

The Risk-Based Asset Management and Capital Planning Program formalizes the process to define the relative risk posed to operations from any single asset, as well as assess the BRA's risk profile presented by all assets. The program will leverage data collected from operations, financial software system and other various sources to integrate into an enterprise resource planning system. This will help improve decision making on asset renewal through improved prioritization of assets across BRA and also improve long-term capital forecasting efforts through improved assessment of renewal needs.

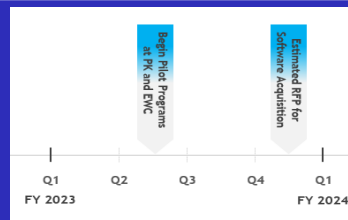
## The Project

This project includes: a) developing and coordinating the fundamental framework of the BRA Asset Management Program (AMP) aligned to industry best practices; b) facilitating the selection, procurement and implementation of an asset management/capital planning software system to support the AMP; c) implementing and applying the pilot programs and risk scoring criteria on the assets at two BRA owned facilities...Morris Sheppard Dam and East Williamson County Water Supply System; d) developing and implementing a long range and capital improvement planning program; e) coordinating with staff and providing training and education necessary to facilitate successful project implementation; and f) optionally, implementing the project at all of the remaining BRA owned facilities and/or the facilities that the BRA manages.

## Current Project Status 10/28/2022

- The BRA Asset Management Steering Committee decided to utilize The Institute of Asset Management (IAM) framework for our AMP
- Sept 27<sup>th</sup> Workshop developed a preliminary definition of an asset and review of current MicroMain process
- Working sessions the week of October 24<sup>th</sup> at PK, LG, Central Office, LL and EWC to discuss work requests, capital planning, condition monitoring and tracking equipment and parts

## Planned Schedule



Note: BRA Fiscal Year Runs Sept to

## Budget Summary

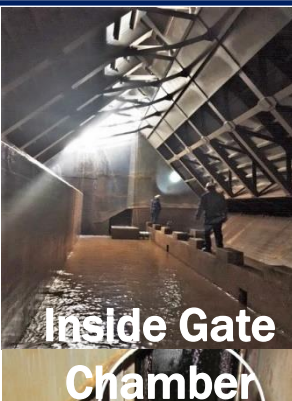
FY 2023 Budget	\$450,000
FY 2023 Project Expenses (As of 9/30/2021)	\$12,102

# Possum Kingdom Flow Control Gate Replacement

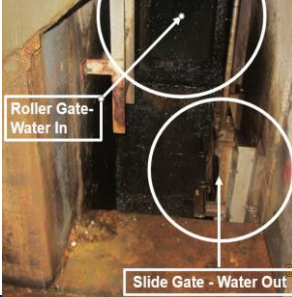


**Bear Trap Gate**

Morris Sheppard Dam creates Possum Kingdom Lake. The dam utilizes 9 Bear Trap gates to control the release of water. Each gate has a chamber underneath with smaller gates that allow water in and out of the gate chamber. Each chamber houses one roller gate and actuator that allows water into the chamber (“floating the gate”) and one slide gate and actuator that allows water out. The hydraulic process of allowing water in and out of the chamber enables dam operators to lower and raise a Bear Trap gate to control the reservoir level.



**Inside Gate Chamber**



The dam also has three Low Flow Outlets that allow water releases at reduce rates for operational needs. Each outlet is opened and closed with a slide gate that controls the release of water. All the gates are controlled by their corresponding operating pier.

**The Project**

The dam flow control systems are critical to reservoir operations and managing the release of water. This project is necessary to bring these systems up to date, improve reliability, decrease maintenance and reduce the effect of zebra mussels should they be introduced to Possum Kingdom Lake. This project will replace the current roller gates with slide gates and replace the associated actuators, gate stems and pedestals. The current slide gates are in good condition and remain serviceable; however, the actuators, gate stems and pedestals will be replaced. This project will also replace the three Low Flow slide gates with a newer design and replace the actuators, gate stems and pedestals.

**Current Project Status 11/4/2022**

- Gannett Fleming (GFI) will provide engineering design and construction oversight services; PK Reservoir System Maintenance Unit (RSMU) will execute construction
- Received all LiDAR Point Cloud data and Revit Model on 5/6/2022 from GFI
- Piers Gate Replacement 60% Design received 7/20/2022. All comments have been addressed.
- GFI is currently working on 90% Design.

**Planned Schedule**



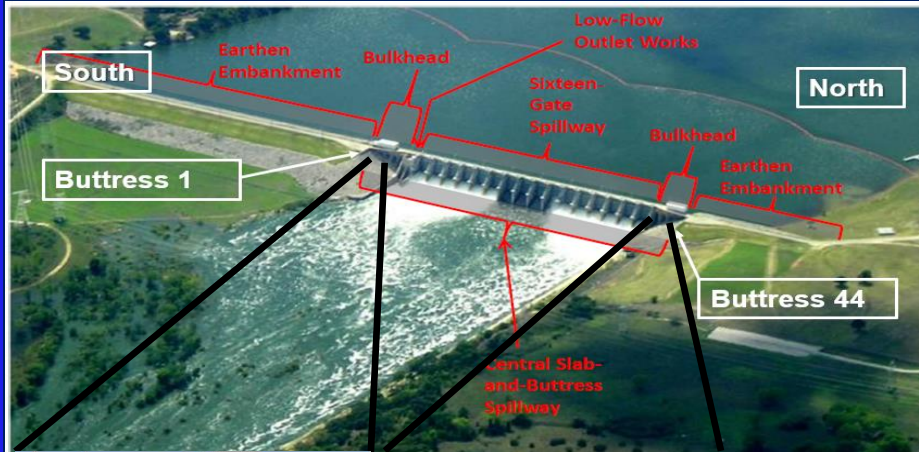
Note: BRA Fiscal Year Runs Sept to Aug

**Budget Summary**

<b>FY 2023 Budget</b>	<b>\$726,000</b>
<b>FY 2023 Project Expenses (as of 9/30/22)</b>	<b>\$0</b>



# Lake Granbury Reinforced Concrete Component Project



Buttresses



Slab

DeCordova Bend Dam was completed in 1969. It is a composite structure consisting of north and south earthen embankments and an Ambursen-style concrete slab and

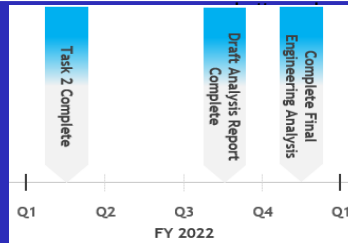
## The Project

During recurring inspections, BRA staff have monitored minor settlement where Buttresses 1 and 44 meet adjacent embankment retaining walls. The purpose of this project is to conduct a structural analysis of Buttresses 1 and 44 and the adjacent embankment retaining walls for strength, safety, and serviceability. The BRA has contracted with Walter P. Moore (WPM) for this project. The first phase of the project has produced a Preliminary Engineering Analysis Report (Task 1). Based on the findings and recommendations from WPM, the BRA authorized testing and additional analysis (Task 2). WPM will compile the findings from Task 2 into a comprehensive Engineering Analysis Report (Task 3) that will evaluate the necessity of repairs; provide viable repair options with a risk analysis; and opinion of probable costs for those options. If warranted, the BRA will move forward with Phase 2: Design and Construction. The concrete joints and retaining walls associated with this project do not pose a dam safety issue.

## Current Project Status 11/4/2022

- Task 3 is complete; The Final Engineering Analysis Report has been completed and provided to BRA
- Repairs for Buttresses 1 and 44 will be performed as a task in a larger project that will begin in FY 24

## Planned Schedule



Note: BRA Fiscal Year Runs Sept to

## Budget Summary

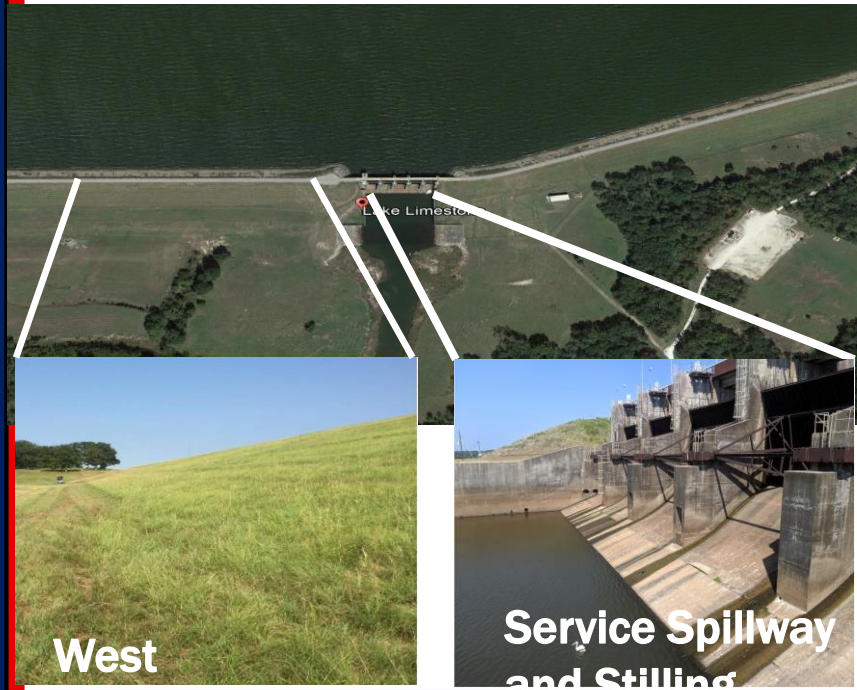
FY 2022 Budget	\$690,000
FY 2022 Project Expenses (As of 8/31/2022)	\$428,689



# Lake Limestone Hydrostatic Relief System Assessment and Replacement



Brazos River Authority



West

Embankment

Service Spillway  
and Stilling

The Sterling C. Robertson Dam was completed in 1978 to form Lake Limestone. The dam is an earthen embankment structure with a concrete spillway that houses five Tainter gates. The spillway contains a stilling basing that reduces velocity and turbulence of released water to prevent scouring. A Hydrostatic Pressure Relief System (HPRS) was constructed within the Service Spillway, Stilling Basin, West Embankment and East Embankment to provide drainage, control hydrostatic pressures and improve stability. Inspections have noted that due to the age (est. 40+ years) and material of the piping for the HPRS, it is necessary to assess the system and to design and replace components, as required.

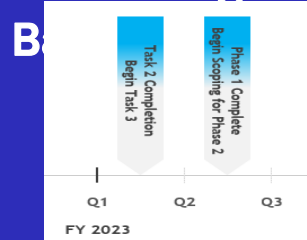
### The Project

This project will be conducted in three phases. Phase 1 will be an Initial Assessment and Evaluation of the functionality of the dam's Hydrostatic Pressure Relief System and will recommend viable improvements (as needed) so that all components in the West Embankment, East Embankment and the Service Spillway will achieve a minimum additional service life of 40 years. Based on the results of Phase 1, the BRA may authorize Phase 2 to design improvements to HPRS. Phase 3 will construct the designed improvements and complete the project.

### Current Project Status 9/30/2022

- NTP for Phase 1: *Initial Assessment and Evaluation* issued on 2/1/2022
- Task One: Project Information Evaluation and Data Gaps Assessment is complete
- Task Two: *Evaluate HPRS Instrumentation* is in progress
- Instrumentation field work completed in August 2022
- Draft Instrumentation Evaluation Memorandum (part of Task Two: Evaluate HPRS Instrumentation) is under review

### Planned Schedule



Note: BRA Fiscal Year Runs Sept to

### Budget Summary

FY 2022 Budget	\$755,000
FY 2022 Project Expenses (as of 8/31/22)	\$244,889



# *Planned Agenda Items Upcoming*

- *CB-WCR-WCRRWL Copper Ion Generator-  
Construction Contract Approval*
- *UB-PK-Spillway Pump and Piping –  
Construction Contract Approval*



**Brazos  
River  
Authority**