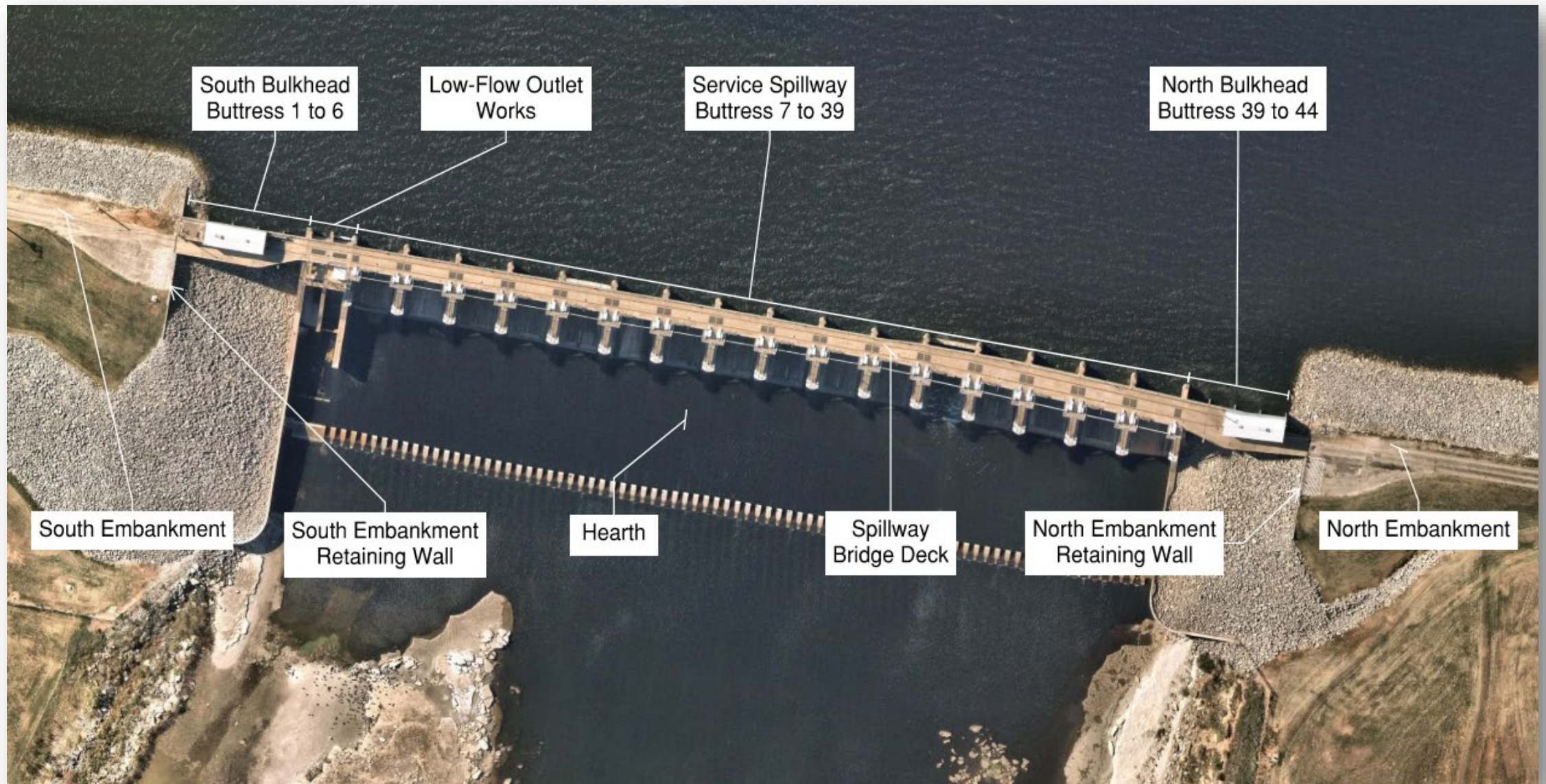




DeCordova Bend Dam Trifecta Project - Phase II

***Blake Kettler
Chief Planning Officer***



Trifecta = Buttruss 1&44 Repairs + Stoplog Replacement System + Tainter Gate Evaluation



DeCordova Bend Dam Trifecta Project - Phase II

FY-26 Approved Project Budget: \$3,131,000

Project Total: \$19,344,000

Strategic Plan Goal: *Section II b. Ensure the operation and maintenance of BRA water supplies and associated infrastructure in a safe, responsible manner in compliance with all applicable requirements.*



Phase I Key Findings



Tainter Gates & Stoplogs

- Gates generally in good condition considering service life
- Localized corrosion & coating issues
- Three gates identified that have higher effective trunnion frictions
- Both sets of low flow stoplogs need to be replaced



Phase I Key Findings

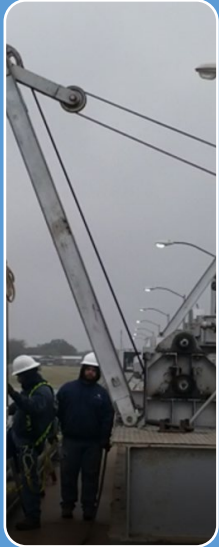
Concrete



- Concrete generally in good condition considering service life
- 19 locations identified for crack or spall repair in addition to all bridge beam seat spalls



Phase I Key Findings



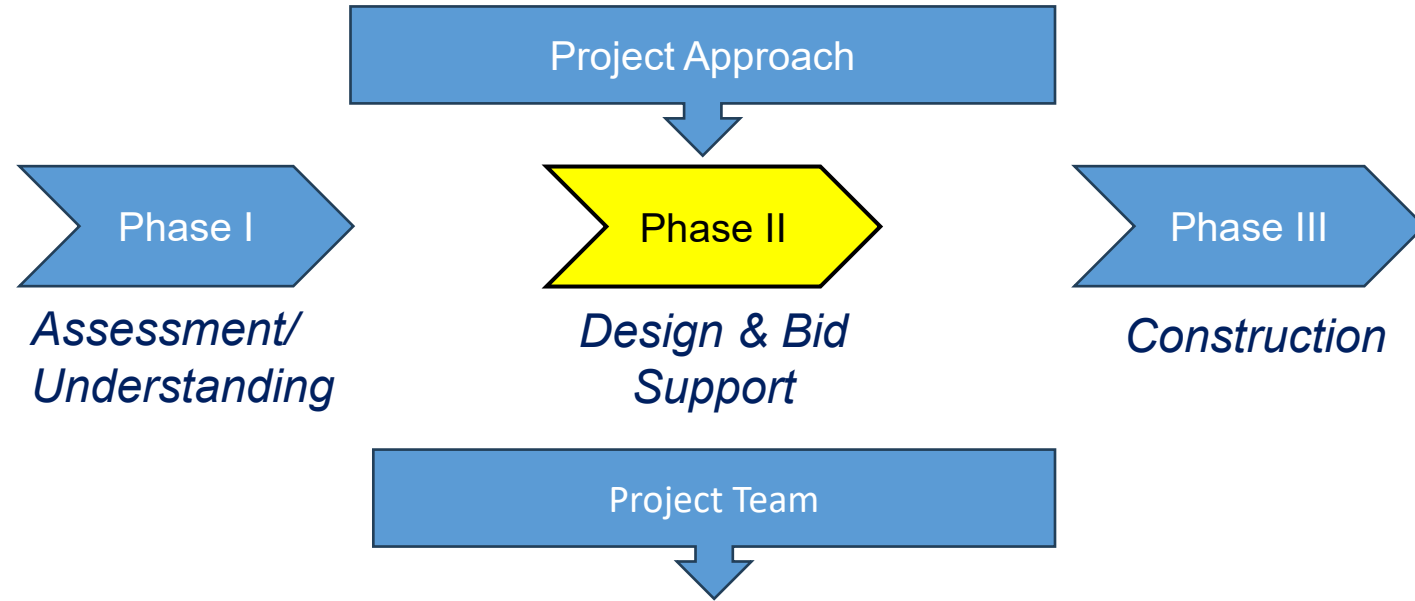
Hoist Trolley

- Hoist trolley has exceeded its useful service life and requires replacement



Foundation

- The sliding factor of safety needs further evaluation



- Walter P. Moore & Associates, Inc.
- GFT Infrastructure, Inc.
- VCS Durability, Inc. (Corrosion)
- Bridge Diagnostics, Inc.
- Integrated Engineering & Construction, LLC



Phase IIA *1 Contract*

- Concrete Rehabilitation Design
- Monorail Hoist System Design & Supplemental Geotechnical Investigation

Phase IIB *1 Contract*

- Tainter Gate Options Analysis

Purpose

The Trifecta Project incorporates multiple efforts to facilitate operational and structural improvements to DeCordova Bend Dam which achieve and/or extend the service life of the structure.



ENGINEERING TASKS / SCHEDULE / COST PHASE II A

Task / Activity	Duration	Cost
Task 1: General	595	445,976.19
Task 2: Trifecta Concrete Rehabilitation Design	574	660,734.61
Task 3: Trifecta Monorail Hoist System Design & Supplemental Geotechnical Investigation	574	2,921,934.20
Task 4: Permitting Support	425	187,410.00
Task 5: Bidding & Contract Award Services	TBD	264,945.00
Phase II A NTE Fee (TOTAL)	594	\$4,481,000.00

ENGINEERING TASKS / SCHEDULE / COST PHASE II B

Task/Activity	Duration	Cost
Task 1: General / Kickoff and Workshop	30	153,953.96
Task 2: Preliminary Gate Rehabilitation Design Alternatives	161	519,278.40
Task 3: Design Alternatives Cost and Risk Analysis	40	95,799.64
Task 4: Gate Rehabilitation Design Alternatives Summary Report	65	72,000.00
Task 5: Tainter Gate Rehabilitation Workshop and Planning	70	48,968.00
Phase II B NTE Fee (TOTAL)	366	\$890,000.00



“BE IT RESOLVED that the Board of Directors of the Brazos River Authority hereby authorizes the General Manager/CEO to execute any necessary Professional Services Agreements with Walter P. Moore to perform engineering services for Phase II of the DeCordova Bend Dam Trifecta Project in an amount not to exceed \$5,908,100.”



Brazos River Authority



Brazos
— ★ —
RIVER AUTHORITY



Backup Slides



Key Risks

Risk Description	Probability	Cost Consequence	Schedule Consequence
Cracks/spalling or corrosion is worse than originally anticipated	Medium	Medium	Medium
Tainter gate hoist capacity exceeded with new design loads	Medium	High	High
Insufficient capacity in the Tainter gate assembly due to design flaws or discovered deterioration	Medium	High	High
Existing trolley cannot be used to deploy/remove stoplogs	Medium	High	High
Malfunctioning dam operational equipment and systems	Medium	High	High



Trunnion Assembly DeCordova Bend Dam





Phase IIA

Concrete Rehabilitation Design



- Buttress 1 & 44 and embankment retaining wall repairs
- Crack and spall repairs as identified in Phase I
- Bridge beam seat spall repairs

Geotechnical Investigation



- Borings for micropile foundation on embankment
- Borings within hearth to identify potential sliding planes and characterize foundation parameters



Phase IIA

Monorail Hoist System Design



- 30% design plans and technical specification table of contents
- 60% design plans, technical specifications, and AACE Class 3 OPCC
- 95% design plans, technical specifications, and AACE Class 2 OPCC
- Final design plans and technical specifications



Phase IIB

Tainter Gate Options Analysis



- Preliminary Gate Rehabilitation Alternatives
- Alternatives Cost and Risk Analysis
- Gate Rehabilitation Alternatives Summary Report



ENGINEERING TASKS / SCHEDULE / COST PHASE II A

Task / Activity	Duration	Cost
Task 1: General	595	
Task 1 – General		445,976.19
Task 2: Trifecta Concrete Rehabilitation Design	574	
Phase IIA Subtask 2.1 – Trifecta Concrete Rehabilitation Preliminary 30% Design		193,771.61
Phase IIA Subtask 2.2 – Trifecta Concrete Rehabilitation Intermediate 60% Design		213,230.00
Phase IIA Subtask 2.3 – Trifecta Concrete Rehabilitation Pre-Final 95% Design & Final		253,733.00
Task 2 Subtotal		660,734.61
Task 3: Trifecta Monorail Hoist System Design & Supplemental Geotechnical Investigation	574	
Phase IIA Subtask 3.1 – Supplemental Geotechnical Services		1,087,655.00
Phase IIA Subtask 3.2 – Trifecta Monorail Hoist System Preliminary 30% Design		463,495.00
Phase IIA Subtask 3.3 – Trifecta Monorail Hoist System Intermediate 60% Design		617,999.20
Phase IIA Subtask 3.4 – Trifecta Monorail Hoist System Pre-Final 95% Design & Final		752,785.00
Task 3 Subtotal		2,921,934.20
Task 4: Permitting Support	425	
Task 4 – Permitting Support		187,410.00
Task 4 Subtotal		187,410.00
Task 5: Bidding & Contract Award Services	TBD	
Task 5 – Bidding & Contract Award Services		264,945.00
Task 5 Subtotal		264,945.00
Phase IIA NTE Fee (TOTAL)	595	\$4,481,000.00



ENGINEERING TASKS / SCHEDULE / COST PHASE II B

Task/Activity	Duration	Cost
Task 1: General / Kickoff and Workshop	30	
Task 1 – General / Kickoff and Workshop		153,953.96
Task 2: Preliminary Gate Rehabilitation Design Alternatives	161	
Phase IIB Subtask 2.1 – 30% Gate Refurbishment Design		293,264.20
Phase IIB Subtask 2.2 – 30% Gate Replacement Design		211,014.20
Phase IIB Subtask 2.3 – Alternatives Design Coordination		15,000.00
Task 2 Subtotal		519,278.40
Task 3: Design Alternatives Cost and Risk Analysis	40	
Task 3 – Design Alternatives Cost and Risk Analysis		95,799.64
Task 3 Subtotal		95,799.64
Task 4: Gate Rehabilitation Design Alternatives Summary Report	65	
Task 4 – Gate Rehabilitation Design Alternatives Summary Report		72,000.00
Task 4 Subtotal		72,000.00
Task 5: Tainter Gate Rehabilitation and Workshop Planning	70	48,968.00
Task 5 – Tainter Gate Rehabilitation and Workshop Planning		48,968.00
Task 5 Subtotal		48,968.00
Phase IIB NTE Fee (TOTAL)	366	\$890,000.00