

PUBLIC MEETING # 2: NRCS WATERSHED PLANNING PROCESS







02/02/2021

Agenda & Contact Information

- Project area
- Dam Components
- Watershed Rehabilitation Planning Process
- Typical Rehabilitation
- **Proposed Alternatives**
- Economic Analysis
- Next Steps
- **Environmental Assessment** 0
- Questions/Contact information

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PROJECT AREA



FREESE VICHOLS

TEXAS STATE Soil & Water CONSERVATION BOARD



WILLIAMS CREEK SITE 2

Dam Characteristics		
Original construction:	1968	
Original Hazard Classification:	Low	
Current Hazard Classification:	High	
Dam Height:	42 ft	
Dam Length:	1303 ft	
Principal Spillway Pipe Diameter:	24 in.	
Conservation Pool Elv:	1553.1 ft	
Auxiliary Spillway Crest Elv:	1571.5 ft	
Top of Dam Elv:	1576.1 ft	

Auxiliary Spillway

300

5

W

150

Flow

FREESE NICHOLS



Principal Spillway Outlet Basin

Principal Spillway Intake Tower



GILLESPIE COUNTY SWCD

Embankment

TYPICAL DAM SCHEMATICS





FREESE

Top of Dam

Williams Creek Site 2

















PLANNING PROCESS

Sponsor submits application

NRCS develops Plan of Work

Develop Supplemental Plan and Environmental Assessment

Review by State, Federal, and Local Stakeholders

Supplemental Plan and Environmental Assessment approved by NRCS

> Consideration for Design and Construction

FRES

Complete

Complete

2020 - 2021

Beginning 2021

Stakeholders

- Gillespie County Soil Conservation District
- Freese and Nichols (Engineer)

Late 2021

To Be Determined







 Natural Resources Conservation Service (Federal interest) Texas State Soil and Water Conservation Board (State Interest) • Gillespie County Water Control and Improvement District No. 1

PLANNING PROCESS





Supplemental Plan and Environmental Assessment Process





GILLESPIE COUNTY SWCD

Next Steps

TYPICAL REHABILITATION PLANNING PROCESS

1. Dam Decommissioning

- Serves as a baseline condition for economic analysis
- Removes risk from a dam breach
- Removes benefits of flood control, sediment control, livestock, and recreation
- Portion of embankment removed and upstream area restored



FREESE ANG:015









TYPICAL REHABILITATION PLANNING SCENARIO

2. Dam Rehabilitation Objectives

- Upgrade to current NRCS and TCEQ criteria for high hazard dams
- Provide protection by detaining the 100-year storm event, assuring the continuance of flood damage reduction benefits downstream
- Extend the life of the dam for 50 to 100 years
- Increase/restore reduced sediment capacity
- Possible Rehabilitation Alternatives:

2.1 Raise Top of Dam

- Creates additional storage
- Downstream slope flattening
- Consideration: Land rights, site topography, and upstream flooding



2.2 Spillway Realignment



- Increase discharge capacity
- Address erodibility design criteria
- Consideration: Land rights, site topography, and downstream flooding

2.3 Enlarge Principal Spillway

- Minimum pipe size requirements
- Increase discharge capacity
- Replace existing pipe



2.4 Structural Spillways







GILLESPIE COUNTY SWCD

Increase discharge capacity in small footprint Consideration: Land rights, future O&M, aesthetics, and cost

DAM REHABILITATION WILLIAMS CREEK SITE 2

CROW'S SWORD MANAGEMENT TRUST

Auxiliary Spillway with ACB Armoring

Rock Riprap

CROW'S SWORD MANAGEMENT TRUST

Proposed fence Existing Fence Pipeline Easement Proposed Dam Footprint Parcels

FREESE VICHOLS

Rock Riprap

Soil & Water CONSERVATION BOARD

> The location of the gas pipe is approximate. The associated easement represents FNI's best approximation. Grading extents may need to be updated once the location of the pipe is confirmed.

Principal Spillway Pipe

> GROWIS SWORD MANAGEMENT TRUST











Alternative 3

- Raise dam crest 7.8 Ft and flatten downstream slope to 3:1
- Principal Spillway:
 - Replace and upsize pipe to 48"
- Auxiliary Spillway:

125

- Keep existing footprint and raise the crest 3.1 Ft
- Armoring with articulated concrete blocks

500

Feet

250

DAM REHABILITATION WILLIAMS CREEK SITE 2

CROW'S SWORD MANAGEMENT TRUST

Rock Riprap

CROW'S SWORD MANAGEMENT TRUST

100

Proposed fence Existing Fence Pipeline Easement Proposed Dam Footprint

Parcels

FREESE NICHOLS

TEXAS STATE Soil & Water

Rock Riprap

Principal Spillway Pipe

> GROWIS SWORD MANAGEMENT







The location of the gas pipe is approximate. The associated easement represents FNI's best approximation. Grading extents may need to be updated once the location of the pipe is confirmed



Alternative 4

- Raise dam crest 4.3 Ft and flatten downstream slope to 3:1
- Principal Spillway:
 - Replace and upsize pipe to 48"
- Auxiliary Spillway:

125

- Block existing earthen channel
- Build new Rolled compacted concrete (RCC) structure

250

500

Feet

DAM REHABILITATION WILLIAMS CREEK SITE 2

CROWS SWORD MANAGEMENT TRUST

Auxiliary Spillway

Rock Riprap

10.0

CROW'S SWORD

proposed fence Existing Fence Pipeline Easement

Parcels

FREESE VICHOLS

Principal Spillway Pipe

> GROW'S SWORD MANAGEMENT TRUST

Rock Riprap

Impact Basin







The location of the gas pipe is approximate. The associated easement represents FNI's best approximation. Grading extents may need to be updated once the location of the pipe is confirmed



Alternative 5

- Raise dam crest 4.4 Ft and flatten downstream slope to 3:1
- Principal Spillway:
 - Replace and upsize pipe to 48"
- Auxiliary Spillway:
 - Widen existing footprint by 60 ft and raise the crest 1.6 Ft
 - New service concrete spillway 30ft wide

			Carlo Carlo Carlos Carlos
0	125	250	500
			Feet

ECONOMIC ANALYSIS WILLIAMS CREEK SITE 2

Estimated Project Costs

Capital Cost

Annual O&M

Discount Rate

Project Lifespan (years)

Total Annualized Cost

Annualized Values

Flood Damage Reduction Benefi

Avoidance of Cost of Sponsor's

Total Benefits

Annual Costs

Benefit-Cost Ratio*

Net NED Benefits

* The higher the ratio, the greater the benefits relative to the cost

FREESE Sources



Sponsor Decom.	Federal Decom.	Rehab. Alt. 3	Rehab. Alt. 4	Rehab. Alt. 5
\$1.9 M	\$3.2 M	\$13.9 M	\$11.1 M	\$ 9.2 M
\$2,500	\$2,500	\$9,600	\$8,850	\$ 9,600
2.50%	2.50%	2.50%	2.50%	2.50%
100	100	100	100	100
\$53,464	\$88,680	\$389,634	\$311,149	\$260,430

	Federal Decom.	Rehab. Alt. 3	Rehab. Alt. 4	Rehab. Alt. 5
its	\$0	\$89,919	\$88,368	\$88,424
Breach	\$53,464	\$53,464	\$53,464	\$53,464
	\$53,464	\$142,383	\$141,832	\$141,888
	\$88,680	\$389,634	\$311,149	\$260,430
	0.60	0.37	0.46	0.54
	-\$35,216	-\$247,251	-\$168,251	-\$118,541





PLANNING PROCESS





Supplemental Plan and Environmental Assessment Process





ENVIRONMENTAL ASSESSMENT



- Clean Water Act
- Waters of the U.S (including wetlands)
- Costal Zone Management Areas
- Floodplain Management
- Wild and Scenic River
- Vegetation communities and Habitat
- Federally-Protected Threatened and Endangered Species and natural areas
- Riparian Areas
- Invasive Species
- Essential Fish Habitat
- Migratory Birds
- Clean Air Act
- Cultural and historic Resources
- Land Use and Recreation
- Scenic Beauty and Visual Resources







Questions?

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