NRCS Planning Process

Water Recourses Projects Covered (Project Eligibility)

- Approaching 50 years old
- Have a safety concern
- Hazard classification increased (low or significant to high)
- Operation and Maintenance (O&M) must be adequate
- Application made through State Agency
- Applications ranked for priority

Rehabilitation Process

- Sponsors make application
- NRCS develops plan with Environmental Assessment (EA) or Environmental Evaluation (EE)
- Public review by State, Federal, interested individuals
- Plan-EA or EE approved by NRCS Chief
- Final Design Phase
- Construction Phase

Sponsor's Commitment

- Sponsors are committed to project and are ready, willing, and able to carry out their responsibilities for rehabilitation work
- Sponsors have 35% local cost-share available at time of construction
- Sponsors commit to new O&M agreement (50 – 100 years)

Planning Process Steps

Public Scoping Meeting

Upper Cibolo Creek Watershed FRS No. 2
Supplemental Watershed Plan - EA

Local Project Sponsors:

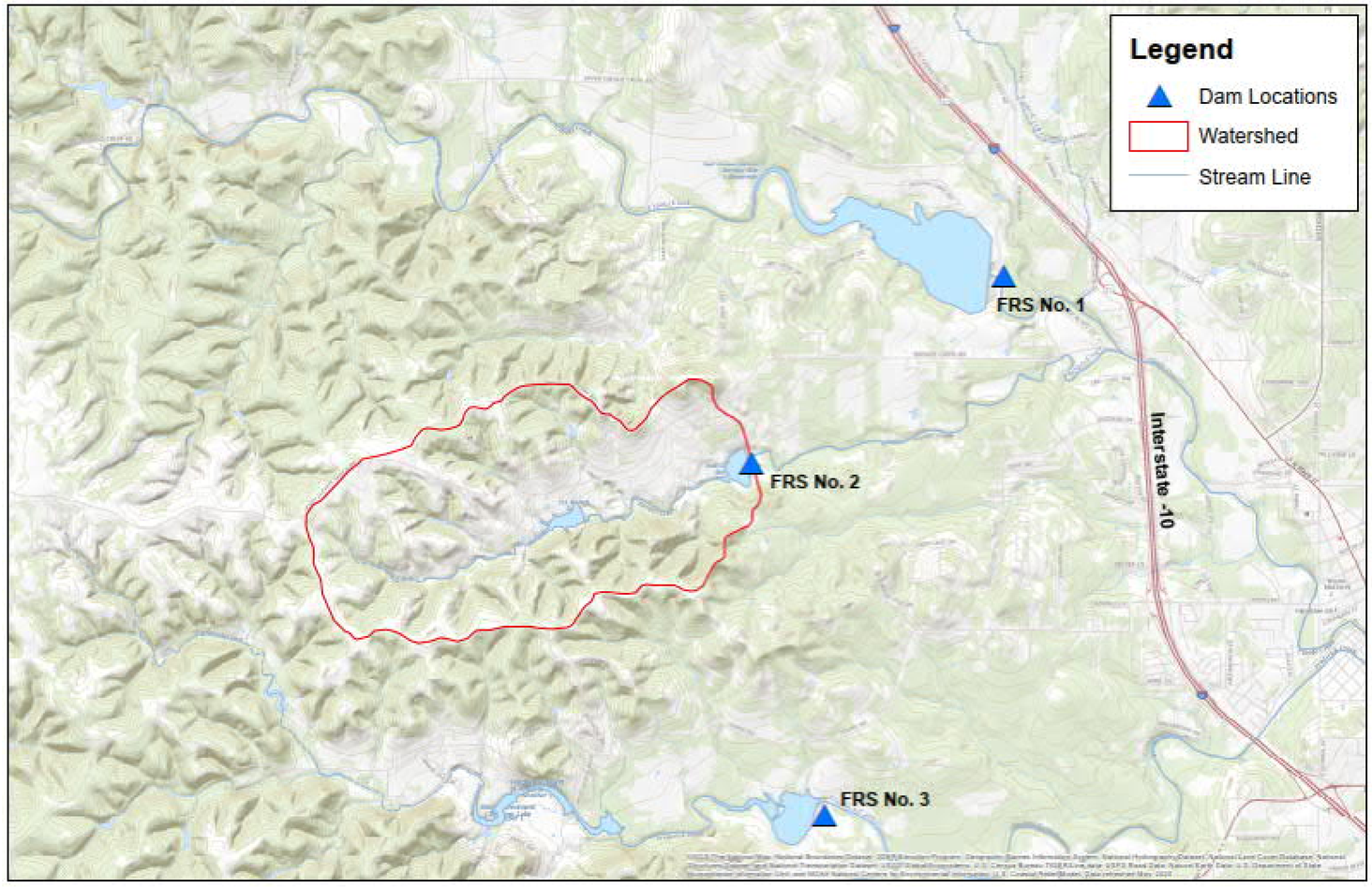
- Kendall County Soil and Water Conservation District (SWCD)
- Kendall County Commissioners Court
- City of Boerne

Technical & Contracting Support:

- Texas State Soil and Water Conservation Board
- USDA-Natural Resources Conservation Service

Technical Contractors:

- AECOM
- M&E Consultants
- Specialty Devices, Inc. (SDI)



Texas Rehabilitation Projects:

The Small Watershed Rehabilitation Amendments of 2000 (Section 313, Public Law 106-472) provides the authority for rehabilitation. It amends Public Law 83-566 ("Watershed Protection and Flood Prevention Act") to include Section 14, which adds authority for rehabilitation

Authority Provides:

- Technical assistance in planning and application
- Federal cost share – 65%
- Sponsors' cost share – 35% (part of Sponsors' cost share can be in-kind)
- TSSWCB – 95% of the Sponsors' cost share (33.25% of the total cost)

75 years: 1939 - 2014 Soil Water TSSWCB

USDA United States Department of Agriculture

AECOM

M&E Consultants Soil & Water Engineering Solutions

SDI

Upper Cibolo Creek FRS No. 2

Site History:

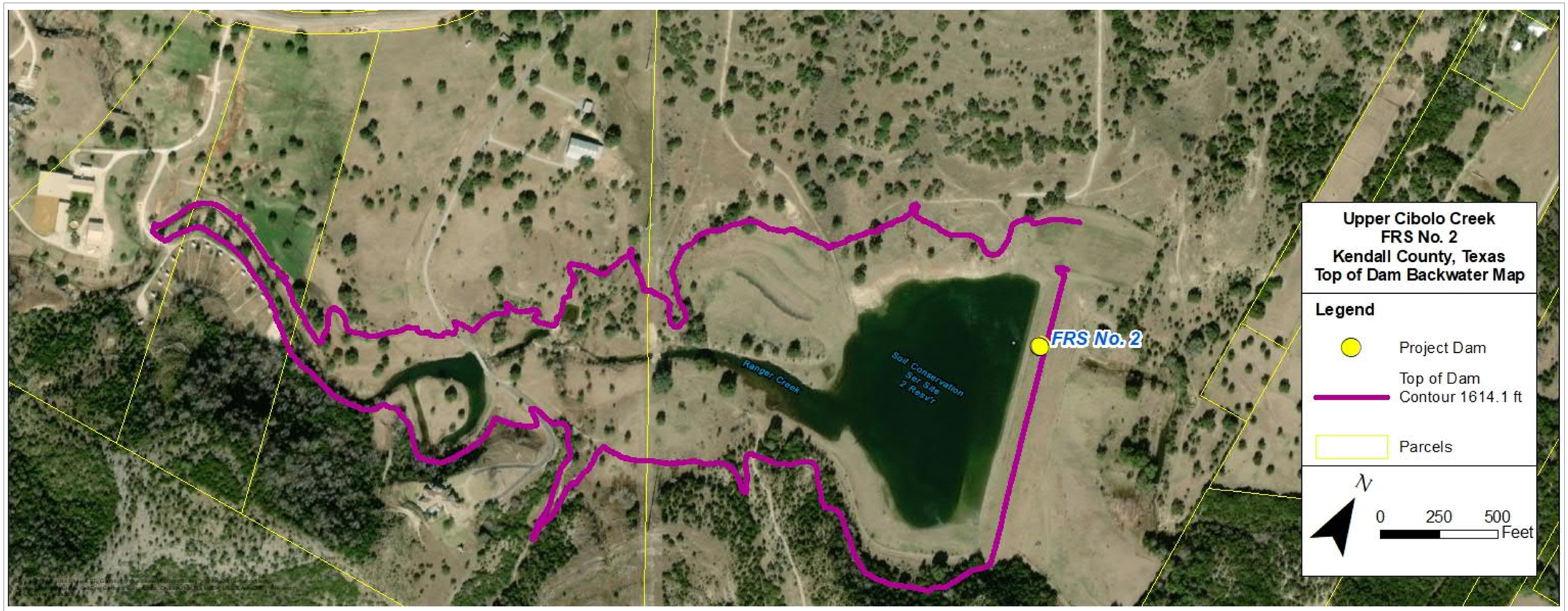
- 1968 – Watershed Work Plan published for 3 flood retardation structures and 1 multipurpose structure
- 1980 – FRS Site 2 was constructed on Ranger Creek
- 2010 – Dam Assessment completed, upgrades recommended
- 2020 – AECOM selected to develop Supplemental Watershed Plan
- Operation and Maintenance – Kendall Soil and Water Conservation District

Site Concerns and Constraints:

- High hazard classification – Built as a low hazard dam, now classified as high hazard
- Dam needs to be updated to meet current safety and performance criteria
- Structures and people at risk downstream that may be impacted by a dam breach
- Lack of suitable earthfill material nearby, which necessitates the use of a concrete parapet wall

Project Schedule

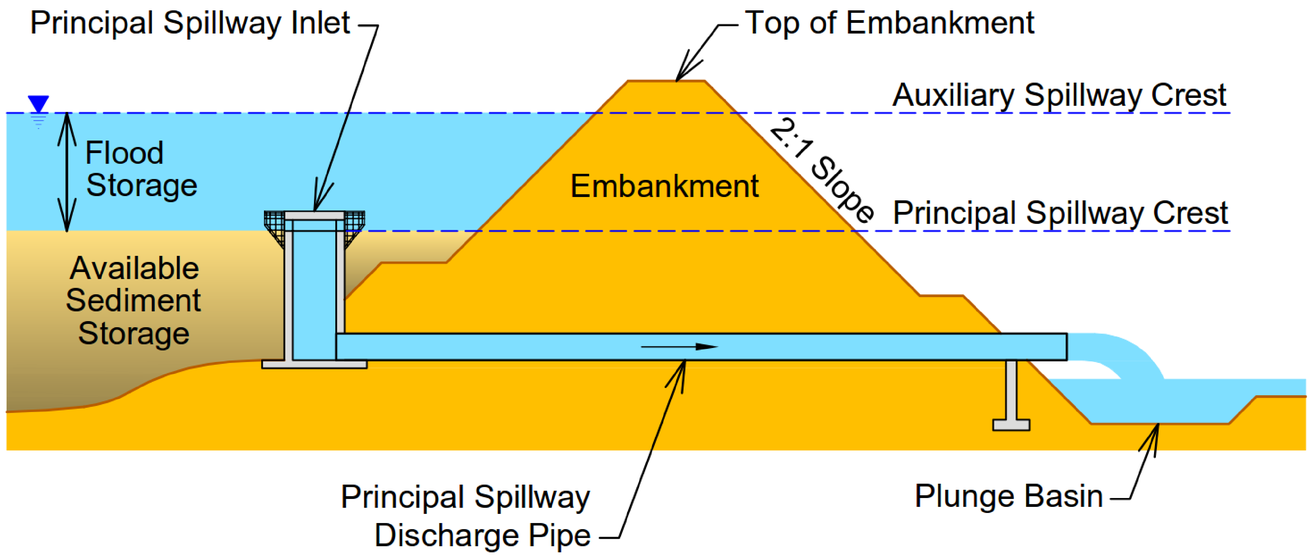
June, 2020	Sponsor Kickoff Meeting
August, 2020	Public Meeting #1
July/August, 2020	Environmental Resources Investigations
September, 2020	Cultural Resources Investigations
Fall, 2020	Develop Alternative Plans
Winter, 2020	Evaluate / Compare Plans
January, 2021	Select Final Plan
Spring, 2021	Public Meeting #2
Spring, 2021	Develop Draft Plan / EA
Summer, 2021	NRCS Reviews
Fall/Winter, 2021	Final Approval of Plan
Fall/Winter, 2022/2023	Earliest Construction Start

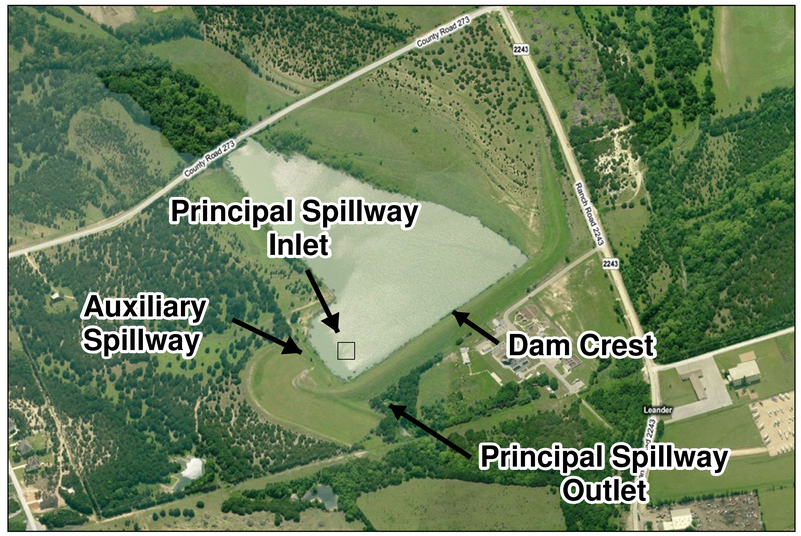

FRS No. 2
Ranger Creek
Soil Conservation Ser Site 2 Resvr
Upper Cibolo Creek
FRS No. 2
Kendall County, Texas
Top of Dam Backwater Map
Legend
Project Dam
Top of Dam
Contour 1614.1 ft
Parcels
N
0 250 500
Feet

FRS No. 1
FRS No. 2
Interstate - 10
City of Boerne
Upper Cibolo Creek
FRS No. 2
Kendall County, Texas
Breach Inundation Map
Legend
Major Road Overtopped
Breach Boundary
N
0 1,000 2,000
Feet

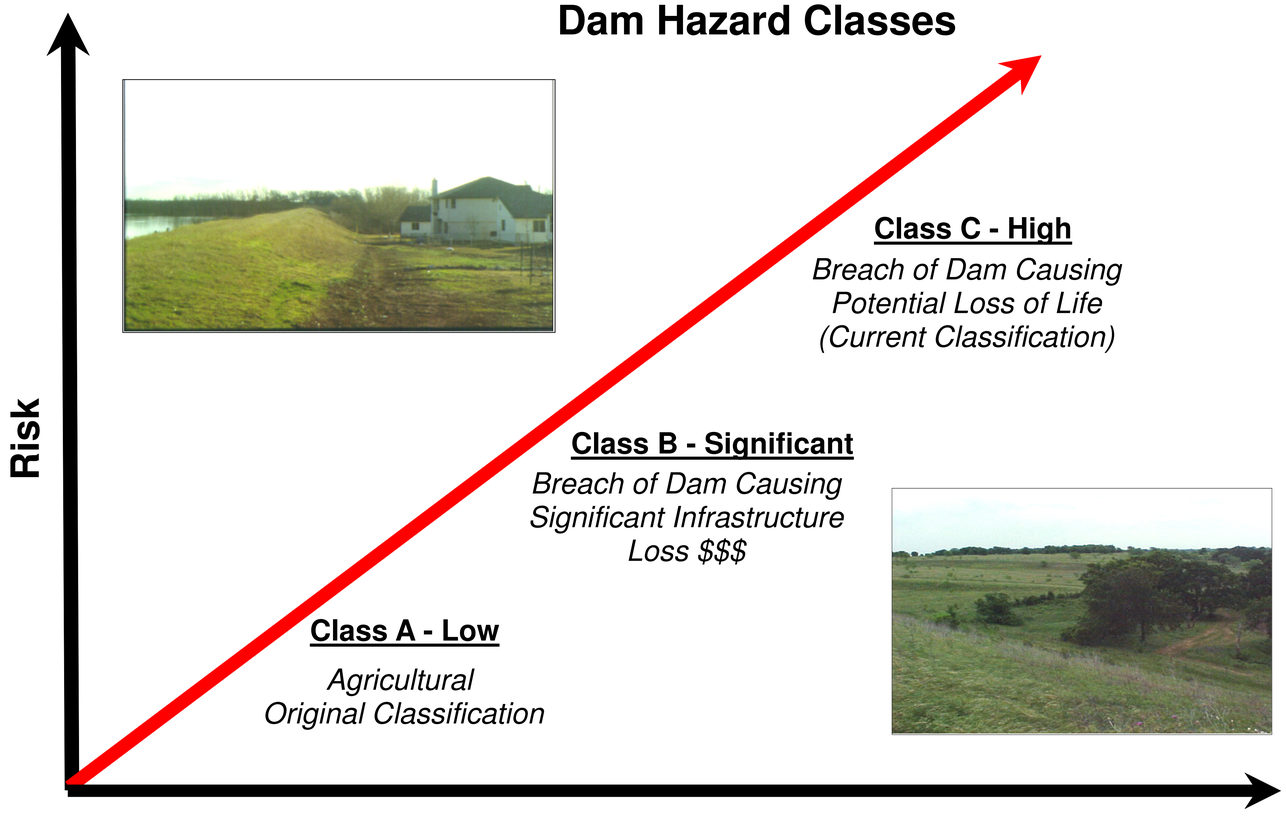
NRCS Dam Basics

Section of a Typical Floodwater Retarding Structure



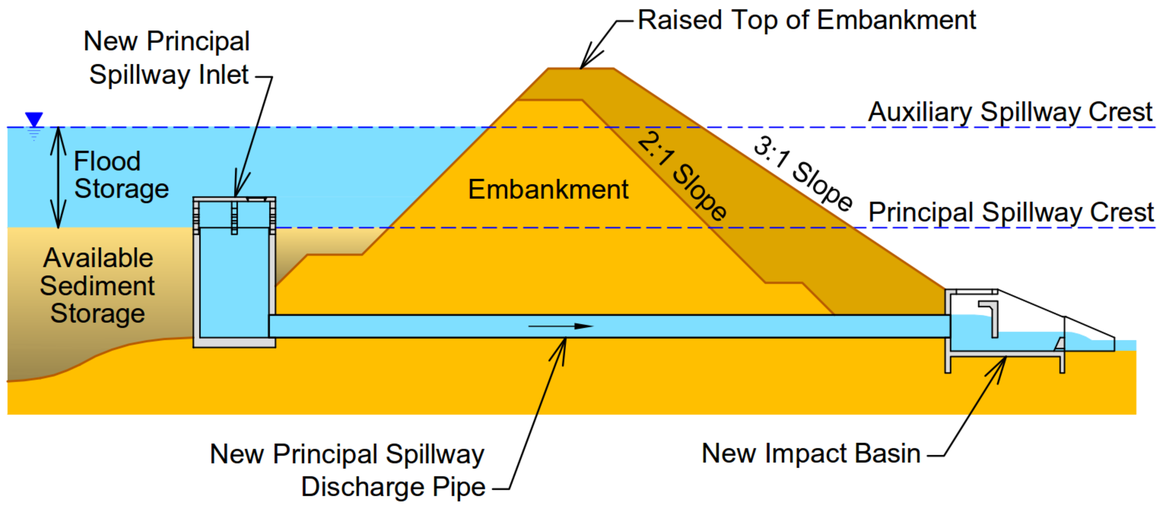


Dam Hazard Classes



NRCS Dam Rehabilitation

Section of a Typical Rehabilitated Floodwater Retarding Structure



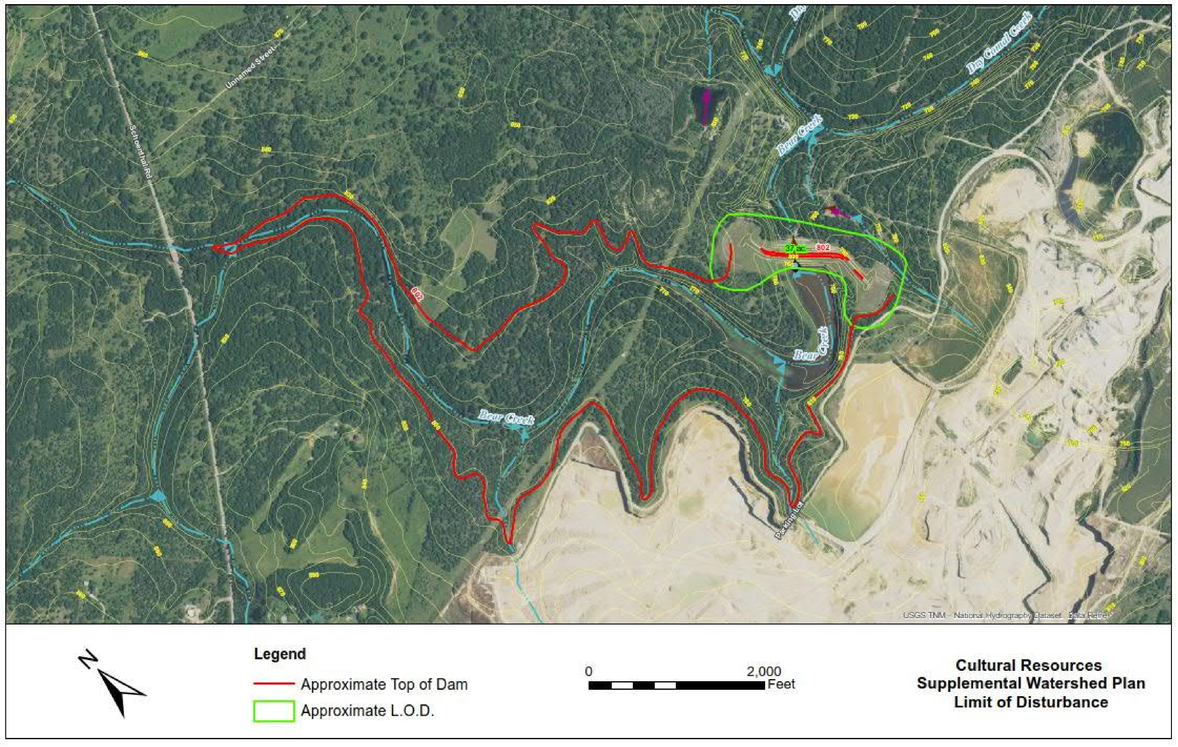
Potential Rehabilitation Features

- Increase principal spillway conduit diameter
- Replace principal spillway inlet riser structure
- Add secondary principal spillway conduit
- Add impact basin downstream of conduit
- Lower or raise principal spillway and/or auxiliary spillway crest
- Add secondary auxiliary spillway (earthen or RCC)
- Widen auxiliary spillway
- Raise top of embankment
- Flatten downstream slope

Cultural Resources

WHAT ARE THEY?

- Archaeological sites
- Historic buildings and features
- Cemeteries
- Parks
- Historic Trails
- Bridges
- Traditional and sacred places
- Historic landscapes
- Objects



CULTURAL RESOURCE COMPLIANCE

Consultation with State Historic Preservation Office (SHPO) - Texas Historical Commission (THC)

- Section 106 of the National Historic Preservation Act of 1966, as amended
- Antiquities Code of Texas

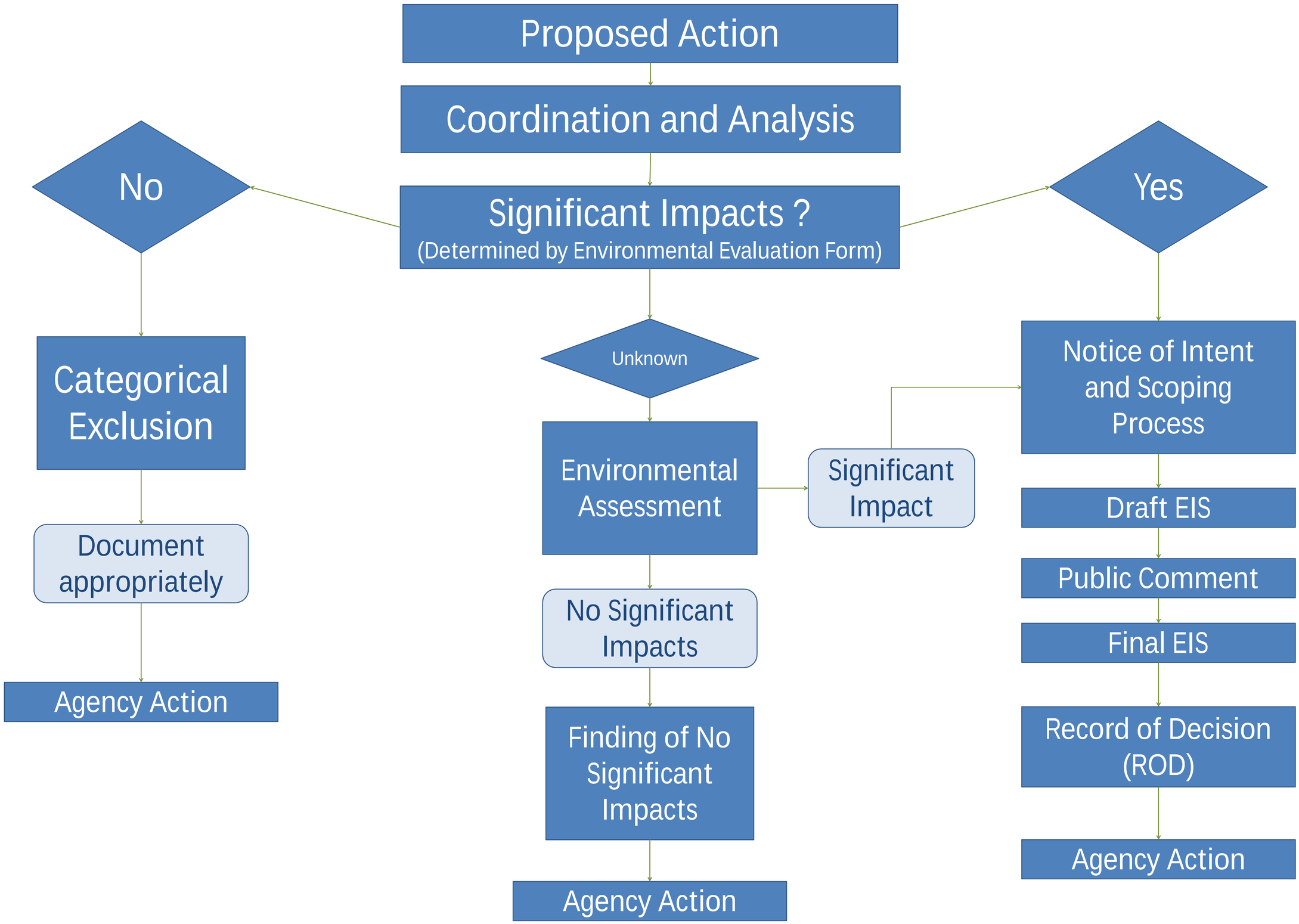
Consultation with Tribes

- There are three Federally-recognized Native American tribes located in TX, including the Alabama-Coushatta Tribe, Kickapoo Traditional Tribe of Texas, and Ysleta Del Sure Pueblo of Texas
- Many more tribes have a stated interest in TX and are often consulted as interested parties during the Section 106 consultation and review process

BASIC CULTURAL RESOURCES REVIEW PROECESS

- Identify Area of Potential Effect (APE)
- Conduct background review to identify known archaeological and historical sites within the APE
- Obtain a Texas Antiquities Permit from the THC
- Perform a field survey to locate and record all cultural resources that may be found within the APE
- Assess the significance of any identified cultural resources
- Determine whether these sites may be eligible for listing in the National Register of Historic Places
- Determine whether these sites merit designation as State Antiquities Landmarks
- Prepare report and make recommendations for site treatment
- Complete consultation

NEPA Process

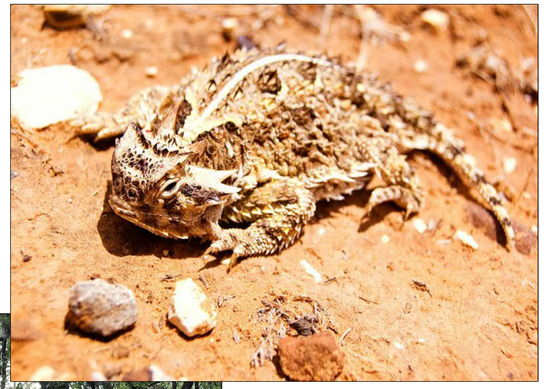


NEPA Environmental Constraints

Per National Environmental Policy Act (NEPA) requirements, environmental resources are assessed to determine the potential for significant impacts.

Investigations consist of the following types:

- Review of publicly available desktop data to identify areas of concern
- Site or Field Visit



WATER RESOURCES

What are they?

- Floodplains
- Riparian Areas
- Site visit to confirm presence and extent of stream/wetland features and riparian buffer areas
- Streams
- Wetlands
- Water bodies (ponds)
- Water quality
- Groundwater (springs & seeps)

ADDITIONAL RESOURCES – DESKTOP REVIEW ONLY

- Air quality during and post construction (ozone, particulate matter, and dust)
- Essential fish habitat areas
- Land use (i.e. agricultural, residential, and commercial)
- Community resources including Environmental Justice (minority and low-income) communities, community characteristics, and community facilities

NATURAL RESOURCES

What are they?

- Protected (threatened and endangered, migratory birds, and eagles) species and their habitat
- Prime farmland areas
- Natural areas (i.e. rookeries)
- Soil conditions (erosion)
- General wildlife (including domestic)
- General vegetation

Site visit identifies:

- Potential protected species habitat
- Natural areas
- Areas of active erosion or the potential for erosion
- Dominant vegetation types/species
- Wildlife observed

Required Planning Process Alternatives

Alternative 1: Sponsor Breach (Future Without Federal Assistance)

- In the absence of federal funding, the local sponsors will either fund rehabilitation 100% or consider other options.
- To reduce liability and eliminate the potential hazard of dam failure from a catastrophic storm event, one option is a controlled breach of each dam.

→ A large portion of the footprint of each dam and the principal spillways will be removed. The stream channels will be reconnected.

→ Efforts will be made to stabilize the sediment with vegetation.

→ Modifications to downstream roads, bridges, and utilities will be necessary.

→ No flood damage reduction benefits or protection will be provided for any level of storm event.

→ Contingency plans for catastrophic storm events will need to be implemented downstream.

Alternative 2: Decommission Dam (Controlled Breach by Sponsors/NRCS)

- To reduce liability and eliminate the potential hazard of dam failure from a catastrophic storm event, a controlled breach of each dam is considered.

→ A large portion of the footprint of each dam and the principal spillways will be removed. The stream channels will be reconnected.

→ Sediment will be stabilized by grade stabilization structures or other means. The riparian areas will be restored with vegetative plantings.

→ Modifications to downstream roads, bridges, and utilities will be necessary.

→ No flood damage reduction benefits or protection will be provided for any level of storm event.

→ Contingency plans for catastrophic storm events will need to be implemented downstream.

Alternative 3: Relocation of At-Risk Downstream Properties/Zoning

- Any residences, commercial properties, and public properties affected by a potential breach may require relocation or flood proofing.
- Must remove potential threat for loss of life during breach event.

→ Downstream breach inundation areas zoned for restricted development (greenbelt).

→ Roads, bridges downstream may need to be modified.

→ Keep dams at current hazard classification (i.e. low or significant).

Alternative 4: Dam Rehabilitation

- Upgrade to current NRCS and state criteria for high hazard dams.

→ Provide downstream protection by detaining the 100-year storm event, assuring the continuance of flood damage reduction benefits.

→ Install new principal spillway inlet towers and impact basins.

→ Install toe drain system on back slopes, if needed. Flatten embankment front and back slopes, if needed.

→ Install erosion protection if required on auxiliary spillway or over top of the dam.

→ Raise or lower spillway crest elevations; widen auxiliary spillway.

Alternative Selection

What are the Federal Objectives?

- Maximize sustainable economic development
- Avoid unwise use of the floodplains and flood-prone areas
- Protect and restore the functions of natural systems and mitigate any unavoidable damage

How are Alternatives Compared?

- Evaluate trade-offs between goals
- Consider monetary and non-monetary effects on economic, social, and environmental goals
- No hierarchal relationship among goals
- Presented through an Ecosystem Services Framework
- Determine alternative that maximizes public benefits relative to costs

What is the Ecosystem Services Framework?

- Identifies, describes, and quantifies impacts through the lens of Ecosystem Services
- Integrated approach that articulates relevant costs and benefits
- Categories of Ecosystem Services
  - Provisioning – tangible goods provided for direct human use (e.g., timber, food, fiber, water)
  - Regulating – maintains the world we live in (e.g., flood control, crop pollination)
  - Cultural – makes the world a place humans want to live (e.g., recreation, spiritual, aesthetics)

Example Project Table

	Alt. A (No Action)	Alt. B	Alt. C
Required Alternatives			
Locally Preferred			X
Non-structural		X	
Environmentally Preferred		X	
Project Investment (cost)	$0	$1,700,000	$3,100,000
Monetized Benefits	$0	$2,100,000	$2,900,000
Trade-Off Analysis			
Provisioning Services			
Wetlands Impacted	No Change	5 acres lost	12 acres lost
Agricultural Yield	No Change	25 acres improved	75 acres improved
Water Quality	No Change	Slight Increase	Slight Decrease
Regulating Services			
Flood Prevention	10% Flood Event	2% Flood Event	1% Flood Event
Water Filtration	No Change	No Change	Increase
Cultural Services			
Safety		Slight Improvement	Significant Improvement
Recreational User Days	600 User Days	450 User Days	450 User Days
Aesthetics	No Change	Slight Decrease	Increase