SPRING LAKE DAM
Today's Purpose

1. Who is Involved?
2. History of the Dam
3. Plans for Repair
Background

- October 2015 flood
- Damage to Spring Lake Dam
- FEMA Category B grant: “eliminate or reduce an immediate threat to life, public health, or safety...”
Background (cont.)

- FNI hired in May 2017
- Preliminary design submitted to FEMA in September 2017
- FEMA provided formal request for Biological Assessment from Texas State University in November 2017
Description of Dam
(Brief) History

- Original construction: 1849 by Edward Burleson
- Current configuration probably dates to 1909
- Purchased in 1994 by Texas State University
- Major flood in 1998
- West spillway repaired in 2001
- Major floods in 2013 and 2015
2015 Flood

- Overtopped by several feet
- Overtopping continued for over a week
- Disaster declaration
- FEMA PW: Preliminary Scope of Work
  - Riprap repairs (4,000 CY)
  - Bentonite blanket upstream
  - New Concrete Cap
  - $1,065,341
- No change to pre-disaster conditions
- Statutory time limit of 6 months (extensions granted)
Existing Conditions

- Dam does not currently meet state standards for dam safety and has several outstanding recommendations from TCEQ

- With 160-year history, dam predates modern design and construction principals
FNI Site Visit

1. Embankment Scour
2. East Spillway Scour
3. Seepage
4. Low Areas on Embankment Crest
Habitat Assessment

• Potential Habitat in Project Footprint
  – San Marcos Salamander
  – Fountain Darter
  – San Marcos Gambusia
  – Comal Springs Riffle Beetle
  – American Eel (not federally-listed)

• May Affect:
  – Texas Wild Rice
Construction

Design
Temporary Stabilization

• Goal: “eliminate or reduce an immediate threat to life, public health, or safety.”
• Dam is currently vulnerable to further overtopping flows.
• Temporary stabilization will reduce likelihood of failure and will:
  – Reduce seepage to prevent further internal erosion
  – Replace lost embankment material
  – Level crest to reduce overtopping flow concentration
Temporary Stabilization

1. Rock riprap in the scoured areas of the downstream toe of the embankment
2. Repair east spillway slab
3. Install bentonite/aggregate composite along entire upstream slope of dam
4. Level the low spots of the embankment crest with installation of a cast-in-place concrete curb.
Temporary bentonite/aggregate composite liner

Selective repairs to clay liner

Concrete curb to level low areas of crest

Replace rockfill at d/s toe

East Spillway Section

Saw-cut undermined section of spillway slab

Buttress with rock riprap

Typical Embankment Section
Spring Lake Dam

- **Final Biological Assessment (BA)**: 2018
- **Regulatory Coordination Meeting (REG)**: 2018
- **Dam Safety Agreement (TCEQ)**: May
- **50% Construction Drawings (F&N)**: June
- **100% Construction Drawings (F&N)**: July
- **Award Contract (TBA)**: Aug
- **Solicit Bids (TXState)**: Sept
- **Stabilization Begins - Contractor to be Determined (TBA)**: Oct
- **Projected Possible Completion (TBD)**: Nov

**Construction Duration**
- **Flood 2015 Anniversary**
- **50% Construction Drawings**
- **100% Construction Drawings**
- **100% Construction Drawings**
- **Award Contract**
- **Solicit Bids**
- **Stabilization Begins - Contractor to be Determined**

**Timeline**
- **2018**
  - Jan
  - Feb
  - Mar
  - Apr
  - May
  - June
  - July
  - Aug
  - Sept
  - Oct
  - Nov
  - Dec

- **2019**
  - Jan
  - Feb
  - Mar
  - Apr
  - May

**Key Dates**
- **2018**: 50% Construction Drawings
- **2019**: Flood 2015 Anniversary / Construction Duration TBD

**Contractor**
- **TBA**
- **TXState**
- **TCEQ**
- **F&N**