SAME INFRASTRUCTURE FORUM

NOT YOUR AVERAGE CIVIL PROJECT PART 2

Bois d’Arc Lake

December 14, 2018

Steve Long
Agenda

• What has happened since the last update?
  • 404 Permit
  • Name Changed to Bois d’Arc Lake
  • Changed Mitigation Project Delivery
  • Construction Underway
  • Utility and Road Conflicts Relocation Underway
  • PUC Authorized 2 Electric Transmission Lines
  • Challenges/Risks
PLANNING AND PERMITTING TIMELINE

December 2006
State Water Rights Permit Application

June 2008
USACE Section 404 Permit Application

February 2015
USACE Issues Draft Environmental Impact Statement

June 2015
State Water Rights Permit Received – Anticipating 404 Permit in Jan 2016

July 2015
USACE Requires HGM methodology for Mitigation – Delay in expected 404 permit

March 2017
USACE Issues Revised Draft Environmental Impact Statement

November 2017
USACE Issues Final Environmental Impact Statement

Feb 2018
USACE Section 404 Permit Received
While our Executive Director signed the permit…

…BD Lake team went to action!
Major Components include several projects; projects were separated by type of work/infrastructure:

- **CMAR 1** – Dam and Reservoir Clearing/Terminal Storage Reservoir
- **Program Component 2** – Full Service Provider Mitigation Project
- **CMAR 3** – Leonard Water Treatment Plant and Pump Stations
- **CMAR 4** – Roads and Bridges
- **CMAR 5** – Raw Water and Treated Water pipelines
Program Components – Overall map

Riverby Mitigation Site

Reservoir Clearing

Dam Project

Raw Water Pump Station Project

Country Road Improvements Around Reservoir

FM 897 Extension Project

Upstream Mitigation Site

Terminal Storage Reservoir Project

Leonard WTP Project

High Service Pump Station Project

90" Raw Water Pipeline Project

Boat Ramps Around Reservoir

84" Leonard to McKinney TWPL
Goal:
By December 2020:
- Begin impounding water
- Complete terminal storage reservoir at Leonard WTP

Scope:
- Dam and Clearing
- Intake Tower
- 210 MG (420 MG ultimate) terminal storage reservoir
- Bonham Dam Improvements

Status

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<tr>
<th>Date</th>
<th>Event</th>
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<tr>
<td>April 2018</td>
<td>Dam Const. &amp; Clearing GMP</td>
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<tr>
<td>May 2018</td>
<td>Mobilization to Dam Site</td>
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<tr>
<td>November 2018</td>
<td>TSR 60% Design completed</td>
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<tr>
<td>Q4 2020</td>
<td>Commence impoundment</td>
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<tr>
<td>Q1 2021</td>
<td>Dam Completion</td>
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Lake Groundbreaking Ceremony
Construction activities at the Dam:

- Clearing of Dam footprint ~ 100%
- Reservoir acres cleared = 2,064 ac of total 3,921
- Fill progress: embankment fill placed to date = 20,677 cy of approx. 5M cy
PROGRAM COMPONENT 2 – AQUATIC AND TERRESTRIAL MITIGATION

Goal:
Replace trees, wetlands, streams, and wildlife habitat inundated by the reservoir

Scope:
• Conversion of Riverby Ranch to a mitigation area
• Turn-key approach – Full Service Provider (FSP)
• Current mitigation plan added;
  – Wetlands Reserve Property (WRP) to Riverby area – additional tree planting
  – Upstream Mitigation Area – tree planting in flood plain of Bois d’ Arc Creek

Status:

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<th>August, 2018</th>
<th>Notice to Proceed</th>
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<td>2018 – 2028 +/-</td>
<td>Mitigation permit milestones</td>
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Program Component 2 – Riverby Ranch overall map
CMAR 3 – WATER TREATMENT PLANT & PUMP STATIONS

Goal:
Complete and operational by First Quarter of 2022

Scope:
- Raw Water Pump Station (RWPS) at the dam (90 MGD – 236 MGD ultimate)
- 70 MGD Leonard Water Treatment Plant (LWTP) (280 MGD ultimate)
- High Service Pump Station (HSPS) at WTP site (90 MGD – 330 MGD ultimate)

Status:

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<td>LWTP</td>
<td>Board Action for GMP – October 2018</td>
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<tr>
<td>RWPS</td>
<td>Board Action for GMP – November 2018</td>
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<tr>
<td>HSPS</td>
<td>60% Design completed</td>
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<tr>
<td>Q3-Q4 2018</td>
<td>Mobilization to site – Site Set up and preparation for Construction full mobilization</td>
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Raw Water Pump Station – Site Map
Raw Water Pump Station - Floor Plan

DIMENSIONS/CAPACITIES:
104' W x 353' L x 100' D
4-foot and 3-foot walls; 3-foot slab
236 MGD Ultimate Capacity; 72 MGD Initial Capacity
Temporary construction roads

Start of mobilization
Site panoramic view

CMAR, CM, and NTMWD site office
CMAR 4 – ROADS IMPROVEMENTS & BOAT RAMPS

Goal:
Before impoundment, complete the following
  – FM 897 Improvements
  – Fannin County Road improvements
  – Boat ramps

Scope:
• FM 897
  – 5.1 miles of new 2-lane FM roadway
  – 1.5 miles of new 2-lane bridge
  – ROW generally 120’ wide; varies to 275’ in some locations
• County roads
  – Improvements at 9 locations
  – Bridge, culvert, and roadway embankment (3.8 miles)
  – Bridge/culvert demolition at 5 additional locations
Road Improvements – Site Map

FM 897 Extension 29,300 ft

Exist. FM 1396 to be taken over by County 6,356 ft

Exist. FM 1396 to be abandoned 12,508 ft

Exist. FM 1396 to be taken over by County 6,356 ft
Construction activities at FM897:

- Grading and earthwork at north and south embankments
- 128 out of 240 Drilled shafts installed
- 64 out of 240 columns completes
- 45 out of 300 beams installed
Goal:
Complete by early 2021

Scope:
Approximately 35 miles of 90-in raw water pipeline (RWPL) and
~25 miles of 84-in treated water pipeline (TWPL)

Status
• Design separated in five segments (A to E) of ~ 12-13 mi each
  – RWPL – 3 segments @ 90% Design completed. Procurement started on materials
  – TWPL – 2 segments @ 30% Design completed

• Coordination between CMAR and 5 design teams:
  Design standards, standard details, system surge and hydraulic analysis, survey/property
documents, corrosion protection design, and fiber optic design
PARTNERING WITH FANNIN COUNTY

**Goal: Involve and Assist our County Partner**

**LBCR Zoning Initiative**
- Protect water quality adjacent to the reservoir

**Local Business & Contractor Outreach**
- NTMWD hosted programs on 7/20 & 8/29 in Fannin County
- Approximately 180 businesses attended
- Focused on educating local businesses
PARTNERING WITH FANNIN COUNTY

Goal: Involve and Assist our County Partner

TPWD Fish Habitat Enhancement
- Construct brush piles
- TPWD provides nursery stock (ShareLunker Program)

Fannin County Road & Bridges
- Upgrade bridges to minimum TXDOT standards
- Reestablish roadway network
PARTNERING WITH FANNIN COUNTY

Goal: Involve and Assist our County Partner

Fannin County Electric Supply
  - Close coordination to maintain power network
  - Improve high voltage transmission power service
  - Two Electrical substations
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Other Significant Program Components:

- Construct 3 recreation areas, boat ramps
- Lake Office facilities in coordination with other pertinent agencies: Emergency Command Center, Nature Center, Texas Parks and Wildlife, and Fannin County Sheriff
- Dam Maintenance facilities
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Challenges/Risks

• Cost – TWDB SWIFT Funding

• Weather

• Property Acquisition

• Utility Relocations
  • Oncor, Fannin Electric, Atmos, Fannin County Roads, AT&T, Frontier Communications, Bois d’Arc MUD, White Shed WSC

• Road Relocations

• Public Utility Commission Electric Transmission Line Authorization
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WEATHER RISKS ARE REAL!
QUESTIONS?