

CENTER HILL DAM SAFETY UPDATE



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Linda Adcock, Project Manager

27 March 2018



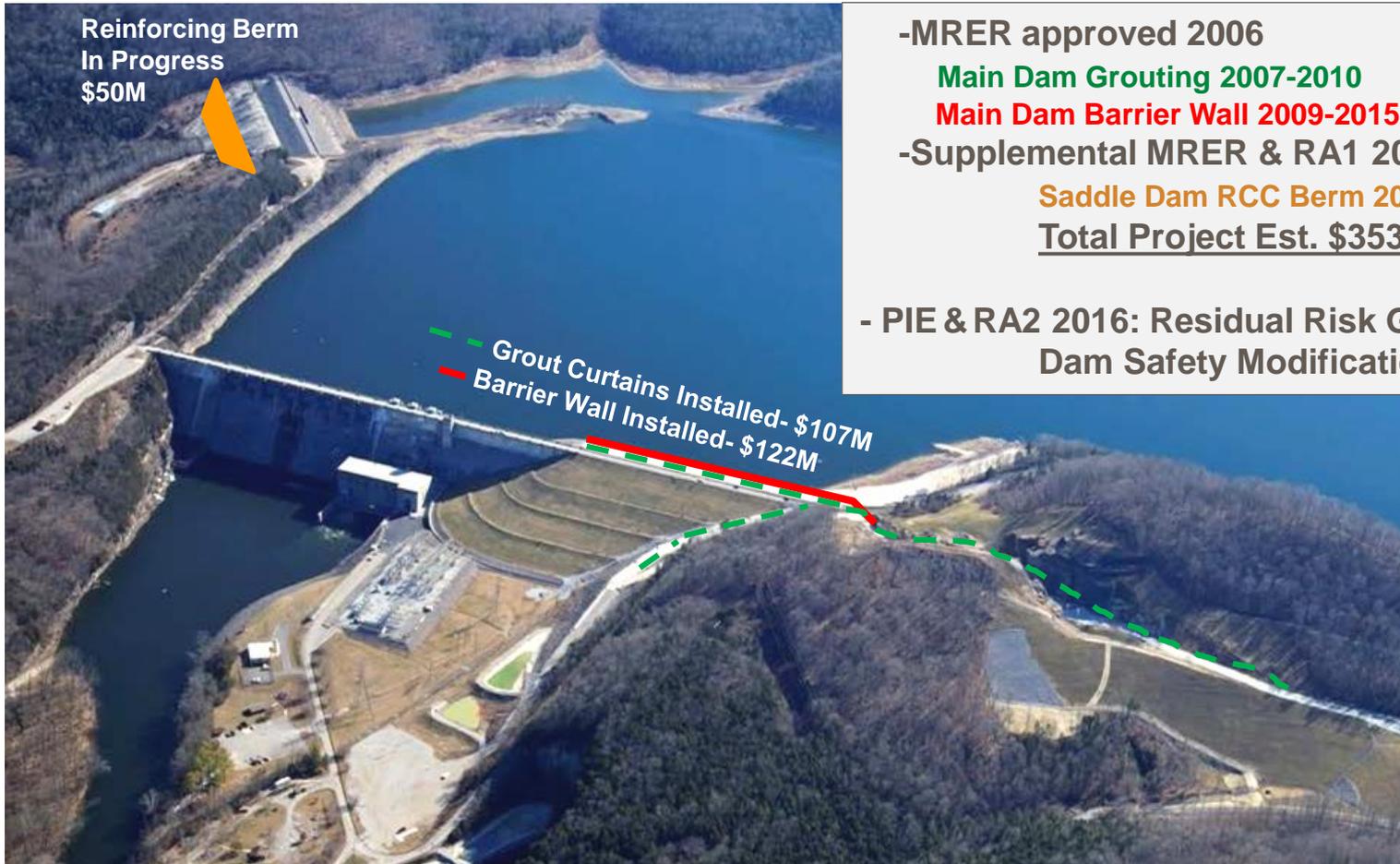
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Center Hill Dam Safety Project

2



Reinforcing Berm
In Progress
\$50M

Grout Curtains Installed- \$107M
Barrier Wall Installed- \$122M

- MRER approved 2006
 - Main Dam Grouting 2007-2010
 - Main Dam Barrier Wall 2009-2015
- Supplemental MRER & RA1 2011-2015
 - Saddle Dam RCC Berm 2016-2019
 - Total Project Est. \$353M
- PIE & RA2 2016: Residual Risk Gates:
Dam Safety Modification Study



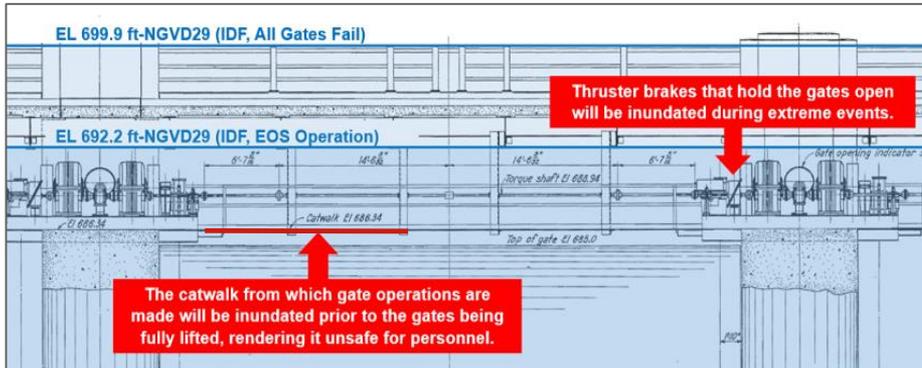
- ❑ Status of Dam Safety Modification Study
(for Gate Operability)**
- ❑ Status of Saddle Dam RCC Berm Construction**
- ❑ Update of Interim Risk Reduction Measures
(IRRM) and O&M Action Item**



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Dam Safety Modification Study, Residual Risk



Gate Scenario	Probability of Fuse Plug Operation
Emergency Operation Schedule (Gates Operate as Intended)	1/100,000
Powerhouse and Catwalk Inundation (Gates Partially Open)	1/3,600
Power Failure (All Gates Closed for the Duration of the Flood Event)	1/500
Combination of All Scenarios	1/1,500



Dam Safety Modification Study Array of Measures

1	Raise gate machinery & controls up to the road level (require elevated road OR new road & bridge downstream)
2	Replace spillway gate machinery with hydraulic machinery intended to operate under water
3	Mechanically open the gates from the top of the dam
4	Replace Fuse Plug w/ fuse gates or active gates on RCC Berm
5	Water Control Manual update: Open Gates Sooner during extreme flood events

Dam Safety Mod Study Next Steps:

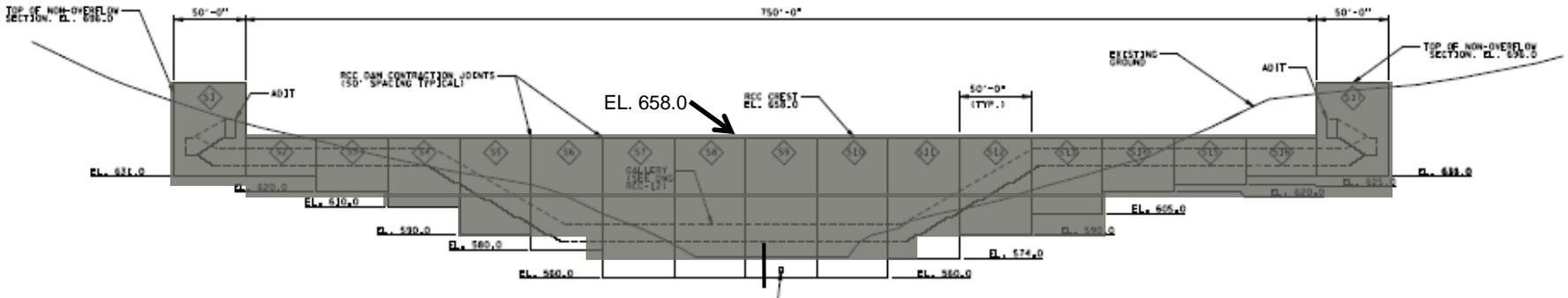
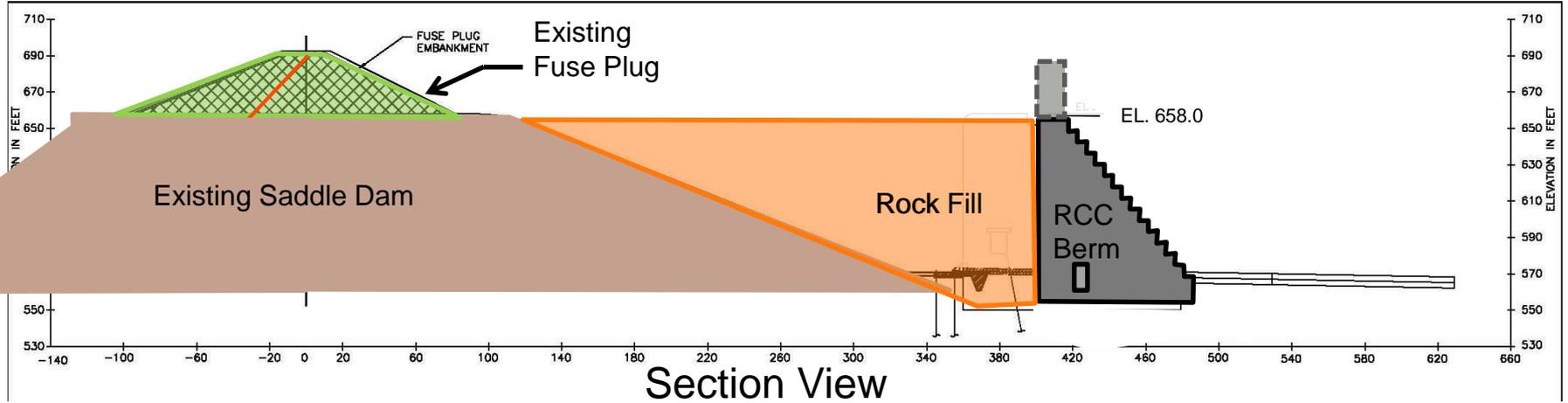
- **Tentatively Recommended Plan- July**
- **Draft Report- Fall 2018**
- **NEPA- EA or EIS?**



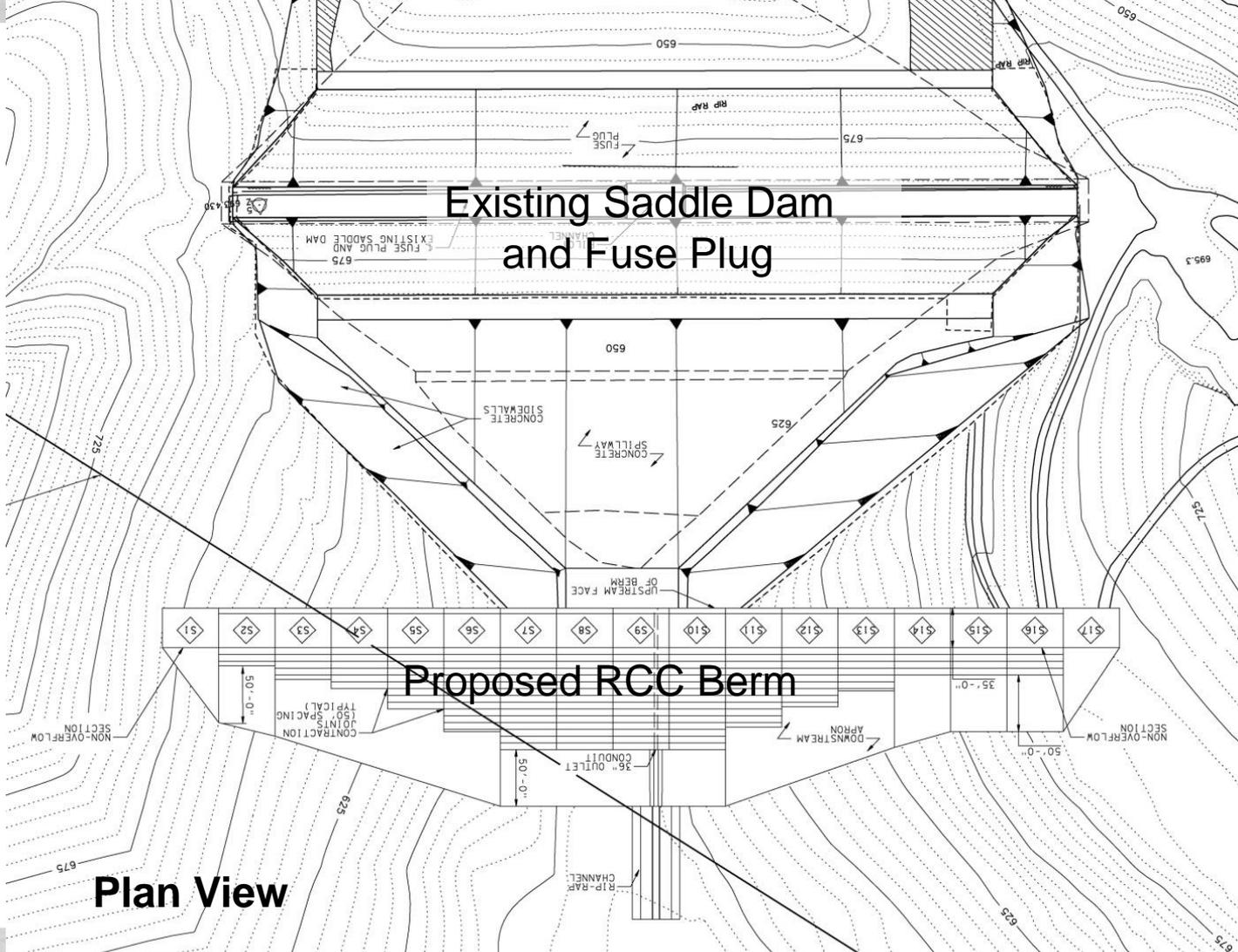
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RCC BERM AT SADDLE DAM



RCC Berm Profile

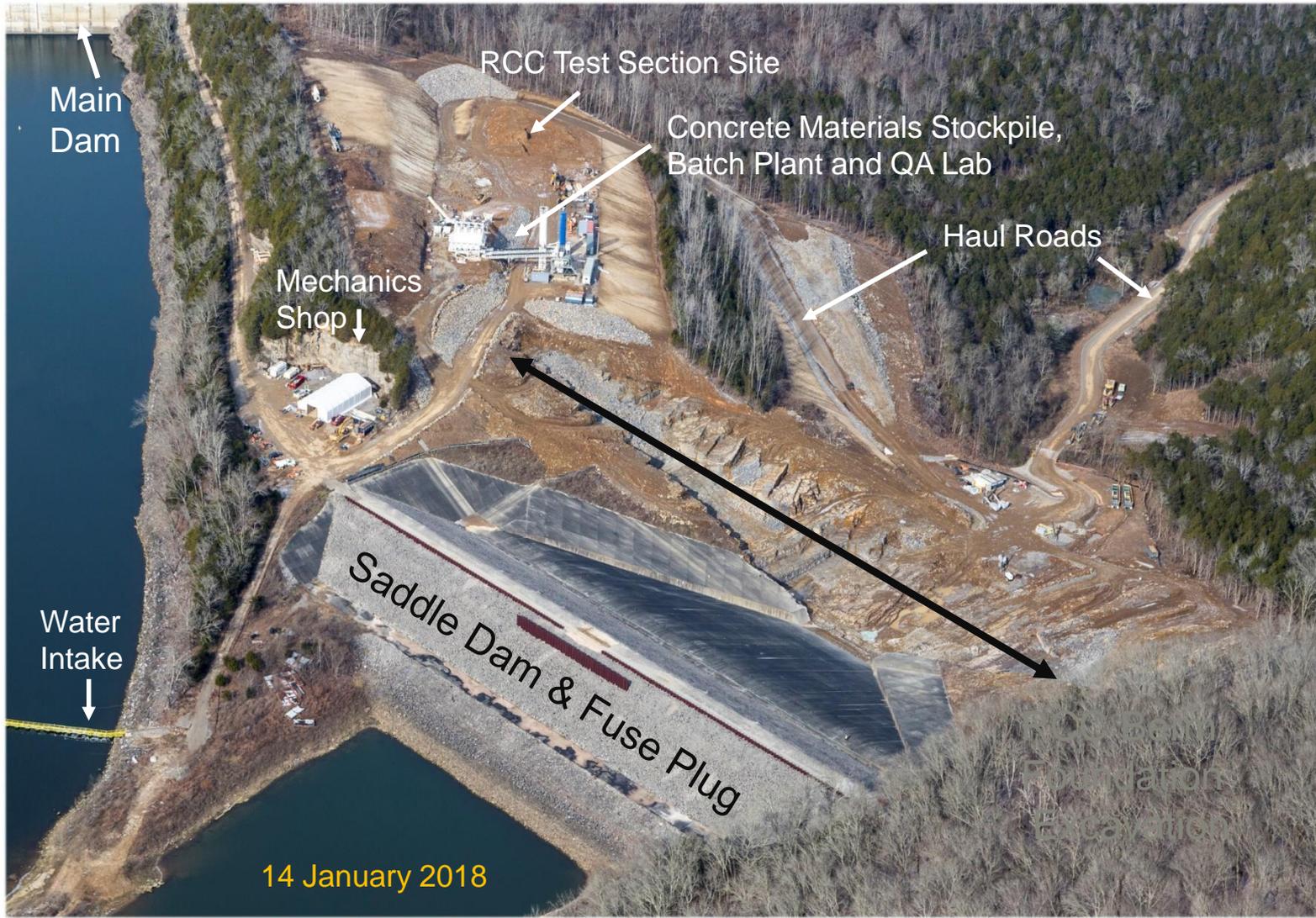


Plan View



Berm Status – September 2017





14 January 2018



File Name

THALLE
CONSTRUCTION COMPANY
A TULLY GROUP COMPANY

Center Hill Dam

March 9, 2018

14 Dec 2017 RCC berm right
abutment rock excavation



6 Feb 2018 RCC berm right
abutment rock excavation



6 Feb 2018 RCC berm right
abutment rock excavation & rock fill



6 Feb 2018 RT abutment
solution feature



2 March 2018



Feb 6, 2018 at 2:04:07 PM
Silver Point

6 Feb 2018 RT abutment
solution feature



RCC Berm Next Steps:

- **Prepare the Foundation- March to June**
 - Finish Cleaning/Mapping & Dental Concrete
 - Place Leveling Layer of Concrete
 - Consolidation Grouting
- **Concrete Test Section & Report- Apr to June**
- **Start the RCC Placement- July**



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Lake Level Reduction is an Interim Risk Reduction Measure (IRRM)

- **Update current IRRM Plan - June 2018**
- **Approval of IRRMP - Aug 2018**
- **Recommendations:**
 - Interim Raise of Lake, in increments, back to normal operating levels
 - dependent upon Modification Study Risk Estimates
- **Gate Electrical & Rehab Work- FY20**



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