Reconstruction of the Buffalo Creek and Gauley Rail Trail

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Presentation Outline

- Introduction
- Project Background/History
- 2016 Flood and Damages
- Funding Assessment
- Engineering Assessment
- Engineering Design
- Construction
- Future of the Trail
- Q&A and Closing

Introduction – Who is ELR?

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Project Background and History

- **Period 1 – 1904-1965**
  - Opened in 1904 by J.G. Bradley and operated as the “Buffalo Creek and Gauley (BC&G) Railroad”
  - Runs along Buffalo Creek 18.6 miles from Dundon (near Clay) to Widen on the Clay/Nicholas county line
  - Powered by steam engines
  - Used to transport coal from Widen, and lumber from Swandale

Project Background and History

- **Period 2 – 1971-1985**
  - Reopened in 1971 by the Majestic Mining Company to serve a mine at Widen
  - Diesel powered locomotives were used
  - Max speed was 10 mph
  - At least 2 derailments

Project Background and History

- **Period 3 – The 1990's**
  - Bright Enterprises leased 61 miles of track between Gilmer and Hartland, WV, then purchased the BC&G spur and renamed it the "Buffalo Creek Railroad"
  - Bright Operated as The Elk River Railroad (TERRI)
  - TERRI refurbished the Elk River track and a portion of the BC&G track and ran coal from 1996-**1999 (this was the last time coal was hauled on the BC&G)**

Project Background and History

- **Period 4 – 2005-2016**
  - 2005-2011”ish” - Nonprofit groups (Buffalo Creek & Gauley Cooperative and the Central Appalachian Empowerment Zone) tried to buy the track from Bright to open a tourism train
  - The nonprofit Clay County Business Development Authority CCBDA) was formed and leased the track for recreation and tourism
  - CCBDA responsible for maintenance and clearing the track

June 2016 Flood – Damage Overview

Mine War Bridge

- ~15 mi. upstream of confluence
- Displaced center pier and girders
- One girder carried ~ 100 yards downstream

June 2016 Flood – Damage Overview

Sand Fork Bridge

- Track displaced from rail alignment for hundreds of feet
- Displaced girder section

June 2016 Flood – Damage Overview

Culvert Washouts

June 2016 Flood – Damage Overview

Slope Failure Sites

June 2016 Flood – Damage Overview

Debris Accumulation

June 2016 Flood – Damage Overview

Loss of Trail Section and Scour

June 2016 Flood – Damage Overview

Sedimentation and Over-wash

Initial FEMA Assistance

- Flood event occurred between **June 22-29, 2016.**
- FEMA and/or WVDHSEM and CCBDA conducted damage assessments around **August 16, 2016**.
- A FEMA PA grant application was submitted by CCDBA and WVDHSEM on **March 3, 2017**.
- On **March 14, 2017**, CCBDA received notice of the approved grant for **~$630K** ($472K FEMA and $158K State).

Initial FEMA Assistance

- CCBDA procured a disaster recovery consultant to manage the programming and review the funding application and project worksheet.
- CCBDA then procured and engineering consultant to conduct additional assessments and inspections, preliminary designs, cost estimates, and mapping.
- The application was ultimately revised and resubmitted as a major scope change.

Engineering Assessments

- Multiple site visits, studies, and evaluations performed over a 20-month period.
- Total number of damage sites increased from:
  - ~25-30 individual damage sites to ~80 damage sites
  - 2 slope failure sites to 4 slope failure sites
- Many of the sites were loss of trail section, debris removal, culvert clean/inspect/replace, overwash, etc

Engineering Assessments

- **Culvert Assessments**
  - Many culverts were found to be plugged, needing jetted
  - H&H analyses performed at various culverts to justify increasing the size through HMP.
  - Several culverts were completely washed away from the track

Engineering Assessments

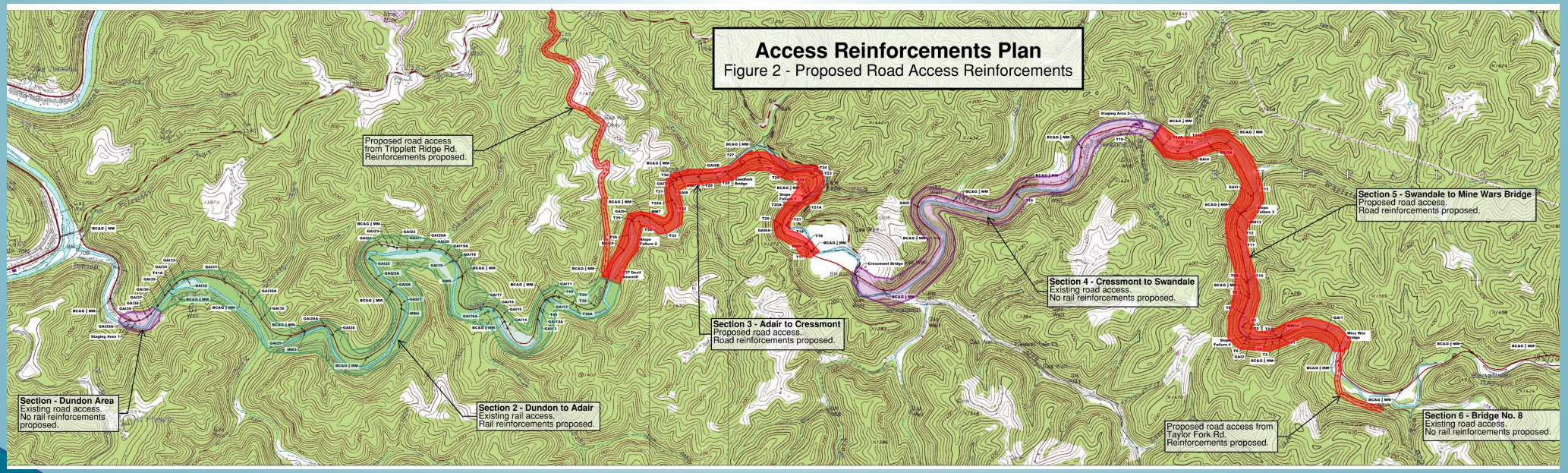
- **Slope Failure Sites**
  - Loss of embankment due to erosion and scour
  - Difficult to repair due to topographic constraints
  - Required geotechnical evaluations
  - Repair methods proposed gabion walls or riprap slope protection

Engineering Assessments

- **Bridge Sites**
  - Scour assessments
  - Construction accessibility limitations
  - SHPO requirements
  - What load rating?
  - Value engineering

Engineering Assessments

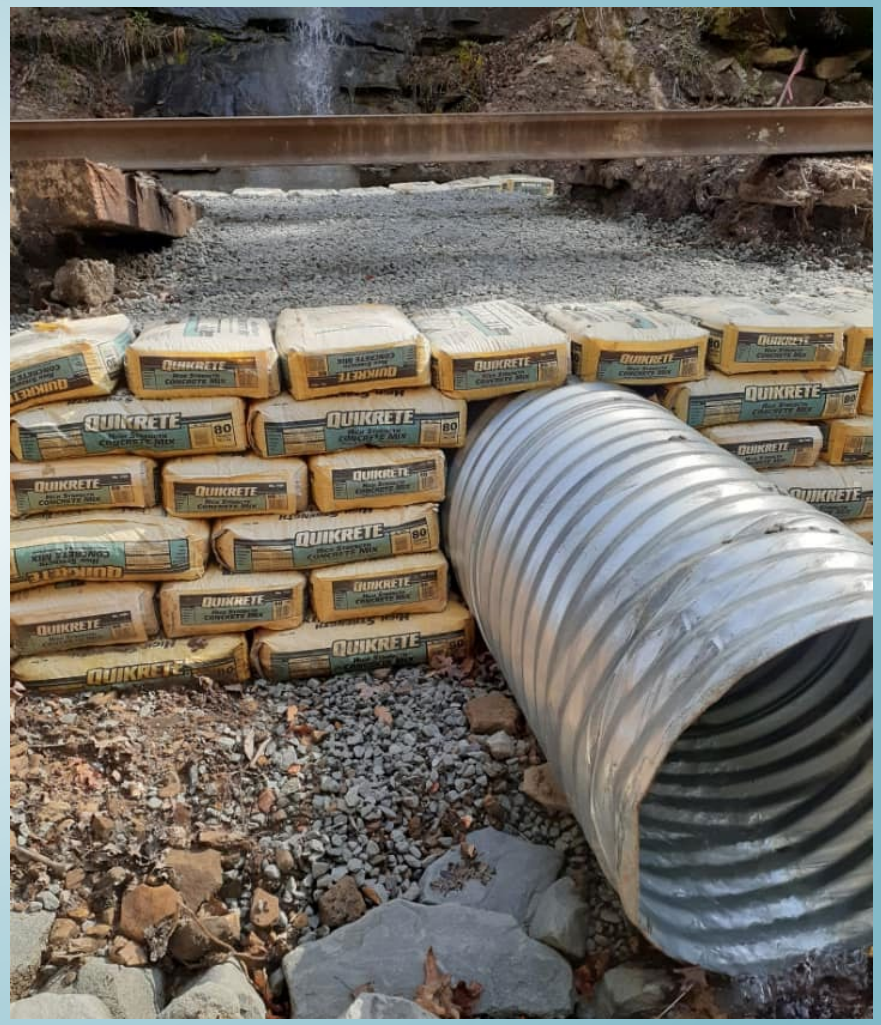
- **Site Assess Study**
  - Only 3 points of vehicular access (2 would need major upgrades)
  - 1 of every 3-5 ties would need replaced, most of the system would need regauged
  - Not enough space for a road beside the rail
  - Concluded that constructing from rail mounted equipment would save the project over $1M, and offer other benefits.
  - Cost for reinforcing the rail to allow for construction was included in the revised funding application.



Engineering Design

- The application was resubmitted **summer/fall 2019** and approved for **$4.7M** (compared to the initial award of $630K)
- Engineering consultants were selected to prepare the detailed design and construction documents.
- Construction bids were received in **May 2021**. The contract was awarded to the low bidder for **$5.6M.**

Construction – (Culverts)



Construction – (Bridges)

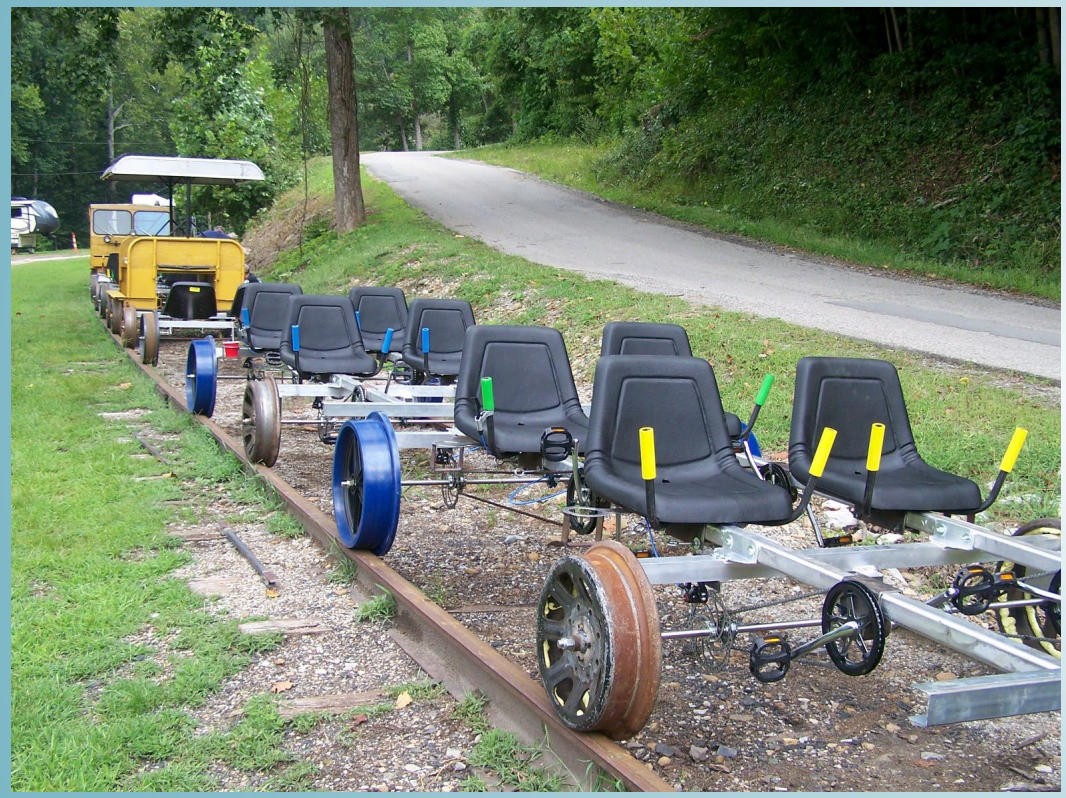
Construction – (Slope Failure Sites)

Construction – (Rail and Trail)

Construction

- Construction was competed in February 2023. Total construction cost was about **$6.6M** (compared to the $5.6M bid price).
- Total project costs, including soft costs, ended up at about **$8.3M** (compared to the revised grant allocation of $4.7M).

The Future of the BC&G



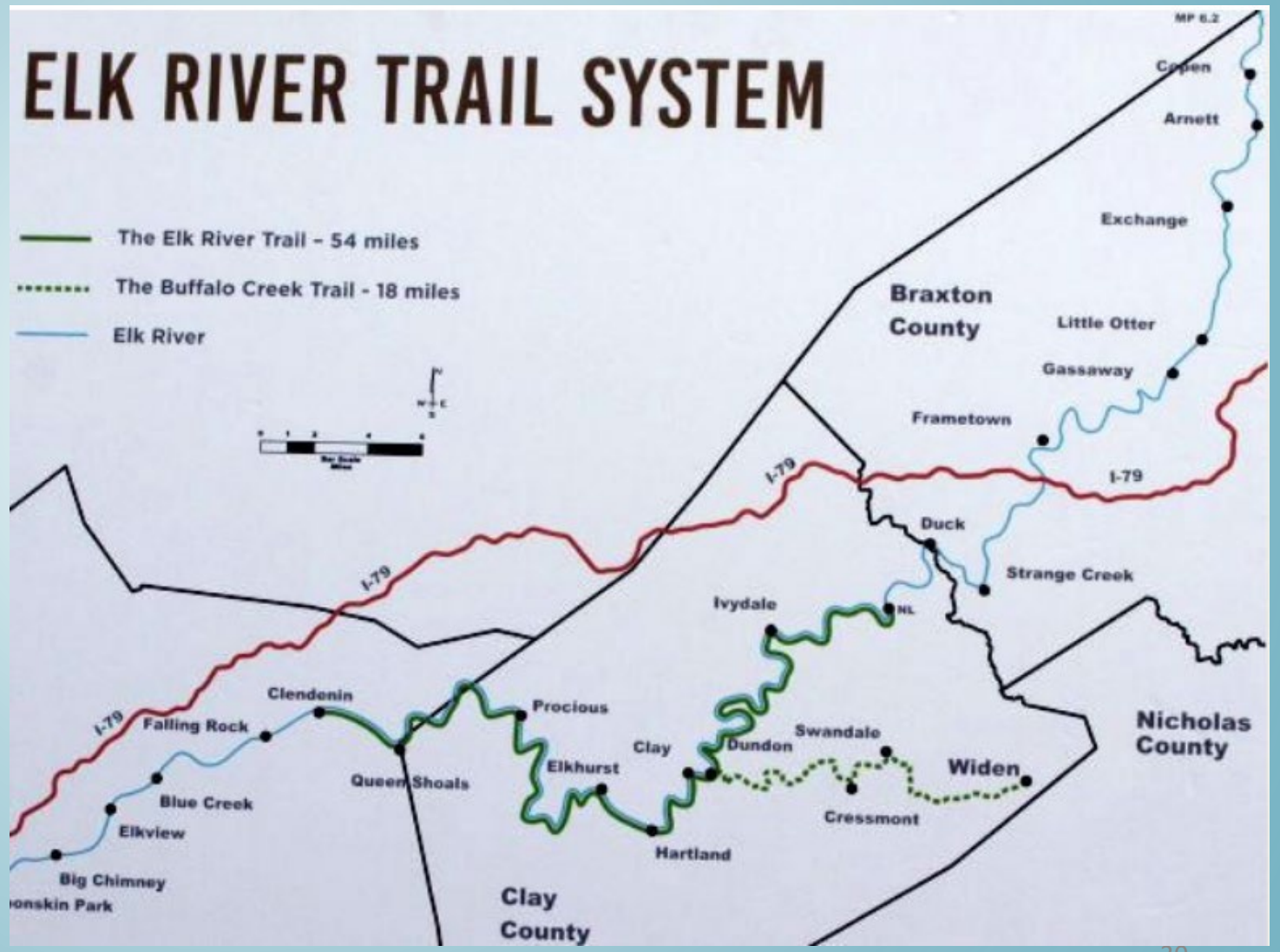
Recreational Tourism

- Currently offering rail biking and jitney rides
- The future could see rail busses or even excursion trains
- Other recreational opportunities
- A third-party will likely operate the system

The Future of the BC&G

Recreational Tourism

- Part of the Elk River Trail System
- New WV State Park
- Tremendous opportunities to grow tourism and boost the local economy.



Lessons Learned

- Have good documentation of flood damage, as soon as possible after the event (photos, locations, dimensions, etc)
- Be sure to all damages and project costs are included in the funding application
- Cost estimates should be supported with engineering assessments/analyses
- Have a good Project Manager
- Surround yourself with a good team!

Questions?

Thank you!