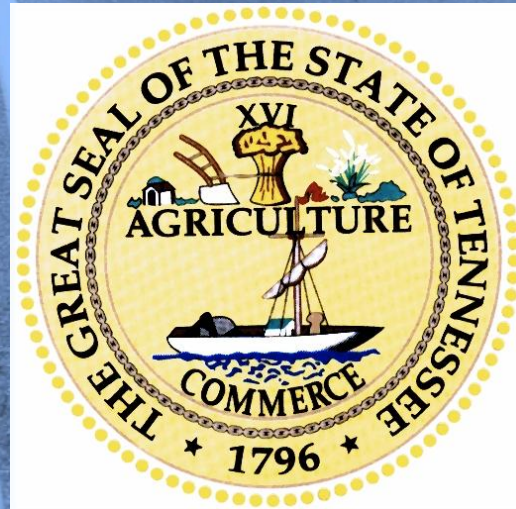


# Chattanooga TPO TCC

Chattanooga, TN

November 13, 2012

## Technical Report SR-8 Signal Mountain Blvd





# Study Area



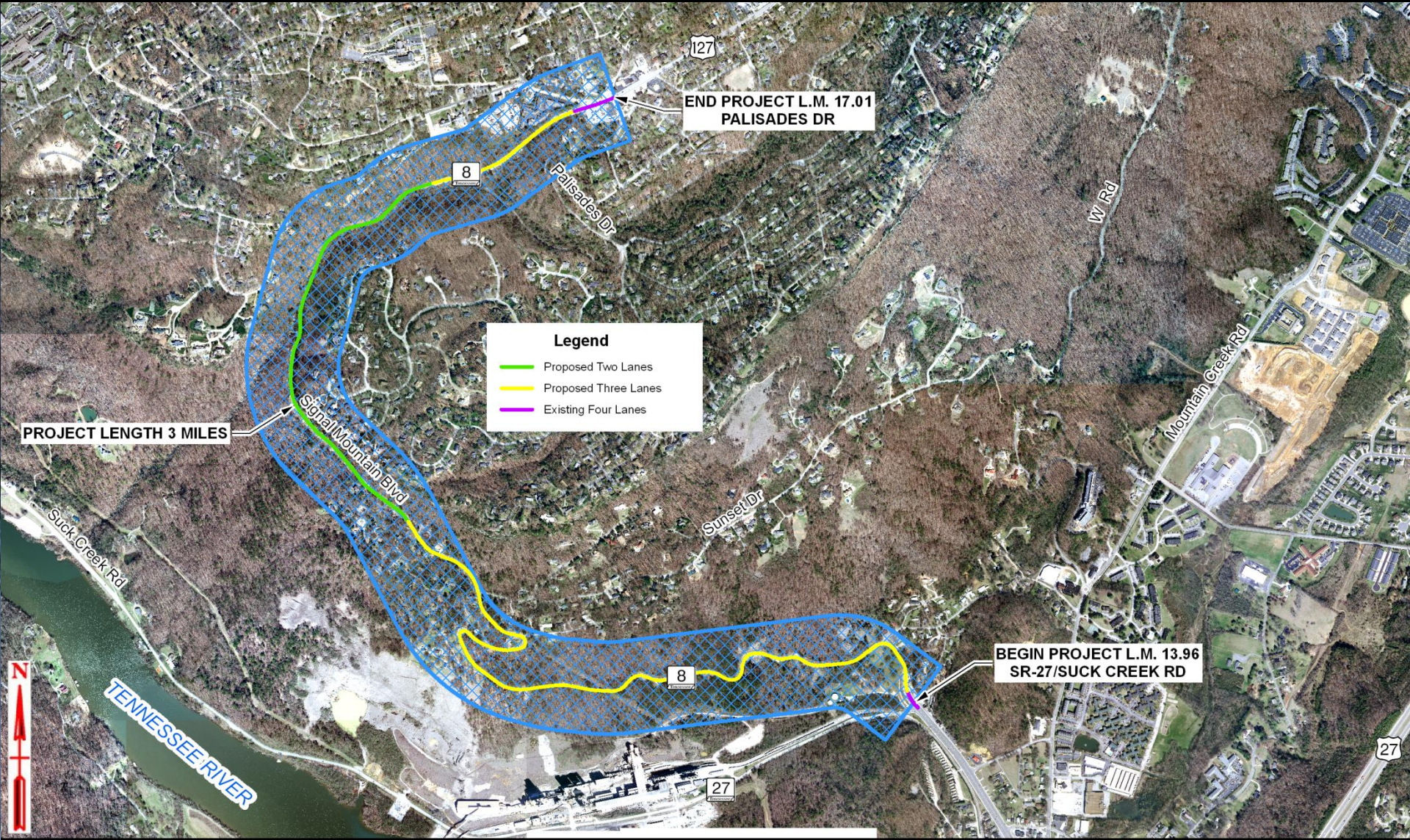


# Route Data

- 2011 AADT 11,980
- 2031 Projected AADT 12,460
- 2011 and 2031 LOS D
- Statewide Average Crash Rate 2.419
- Calculated Crash Rate 2.166

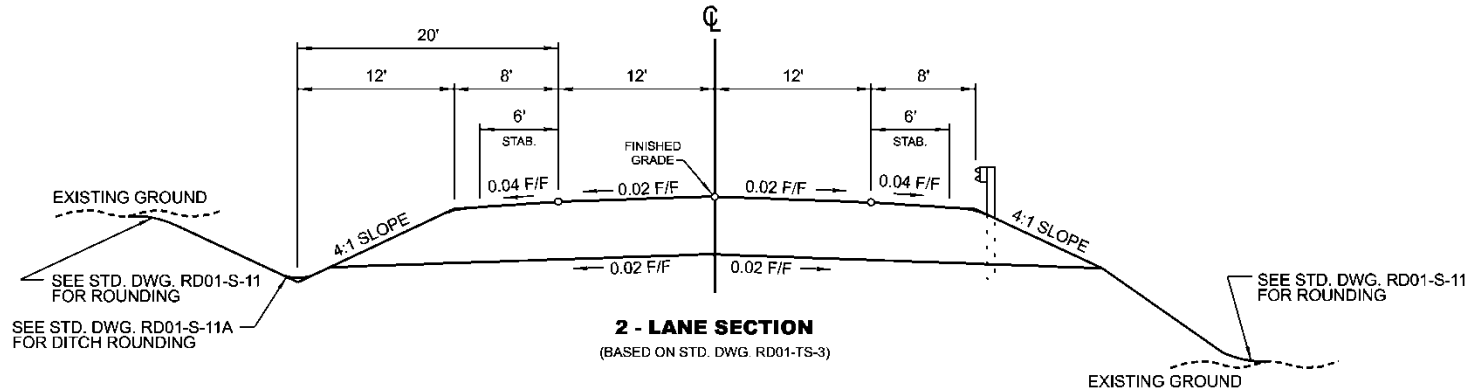
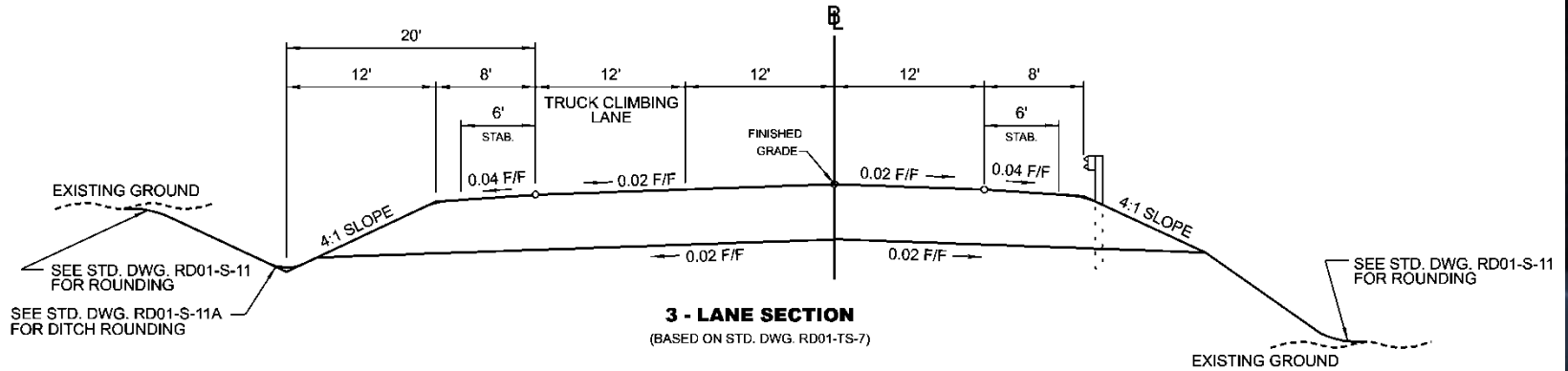


# Reconstructing SR-8





# Reconstruction Typical Sections





# Positive Impacts of Reconstruction

- ✓ Provides 12' lanes and adequate shoulders
- ✓ Improves reliability
- ✓ Improves safety
- ✓ Decreases travel time



# Negative Impacts of Reconstruction

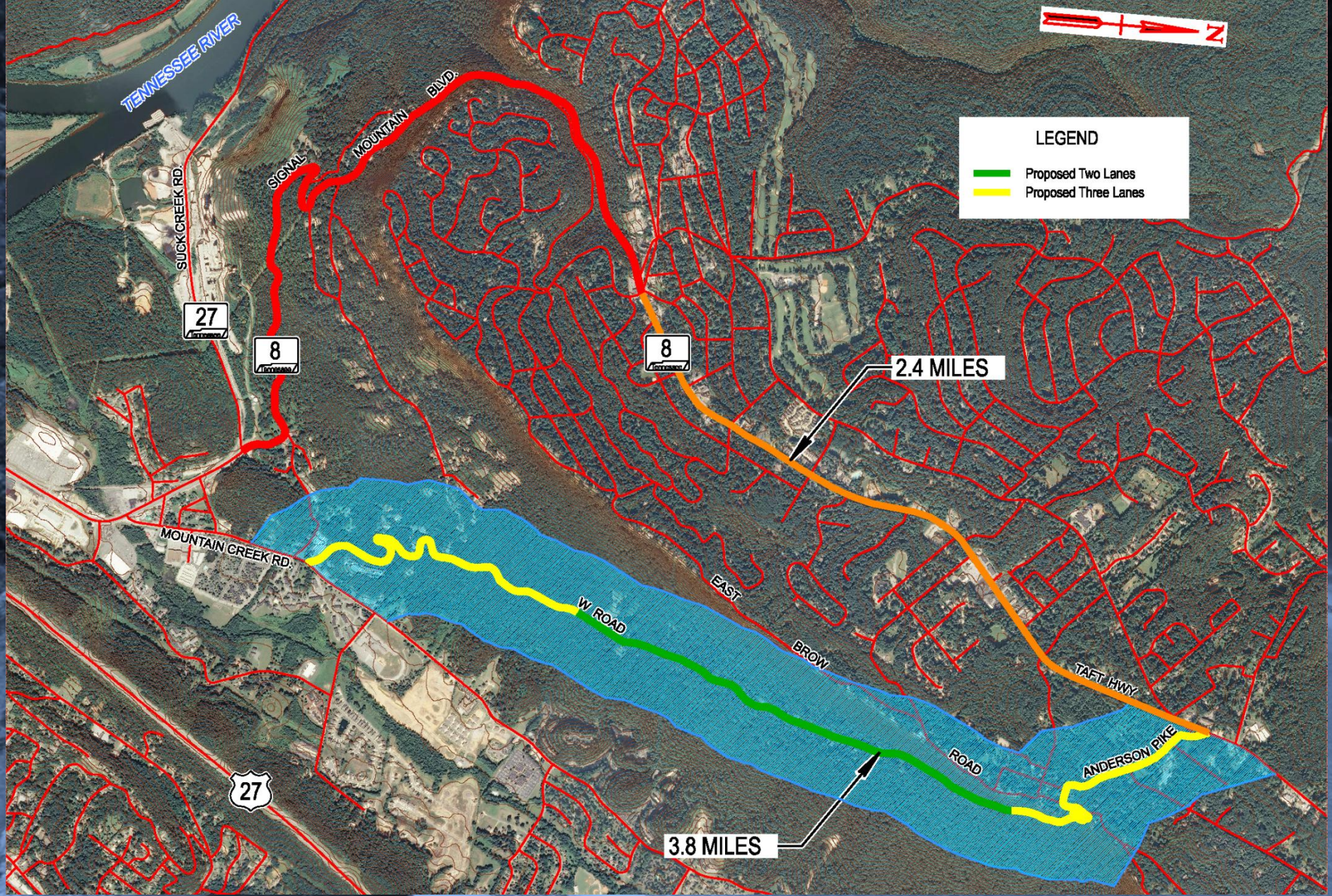
- 2.5 Year Construction Project
  - ❖ 2 Year Road Closure (W Road Detour)
  - ❖ 0.5 Year Partial Road Closures
- Considerable Impacts to adjacent property owners
- Significant Visual Impacts
- Cost
  - Estimated cost \$75 million
  - Cost/mile \$25 million





**LEGEND**

- Proposed Two Lanes
- Proposed Three Lanes





# Positive Impacts of New Route

- ✓ Improves traffic flow
- ✓ Improves reliability
- ✓ Minimal construction delays (SR 8 would remain open)
- ✓ Should reduce crash rates



# Negative Impacts of New Route

- Increases Route Length
  - SR 8 - 3.0 miles
  - New Route - 6.2 miles
- Significant impacts to adjacent property owners
- Substantial Visual Impacts
- Estimated cost \$114 million
  - Cost/mile \$30 million



# Typical Reconstruction Photos



SR 28  
US 127  
Fentress  
County



SR 111  
Hamilton  
County



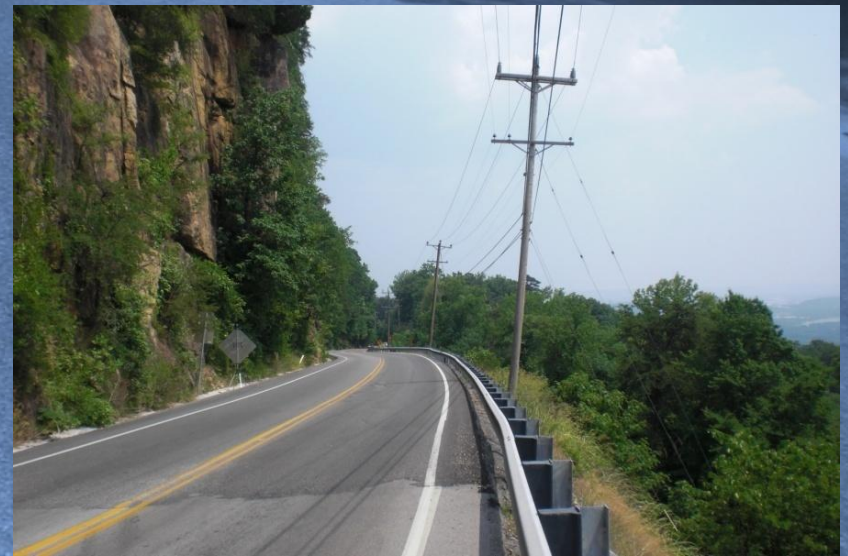
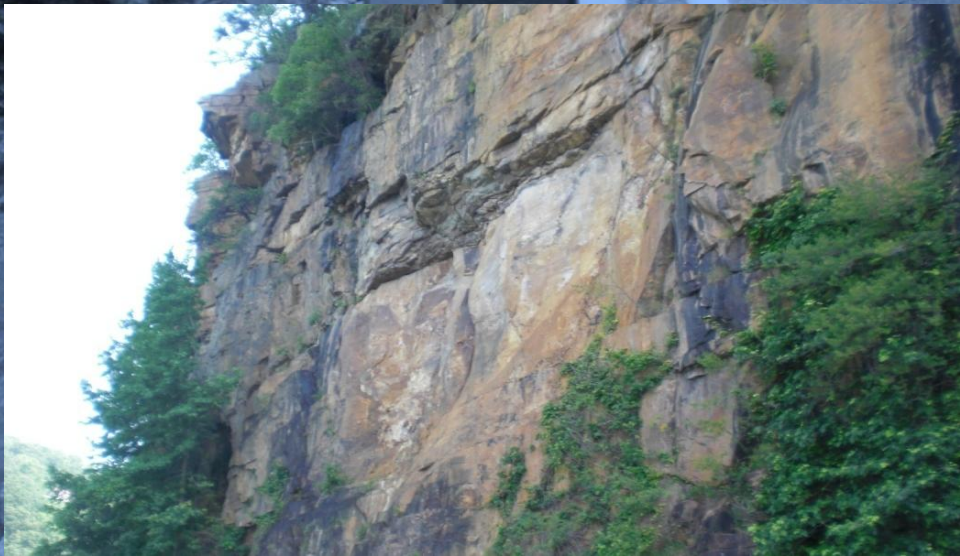
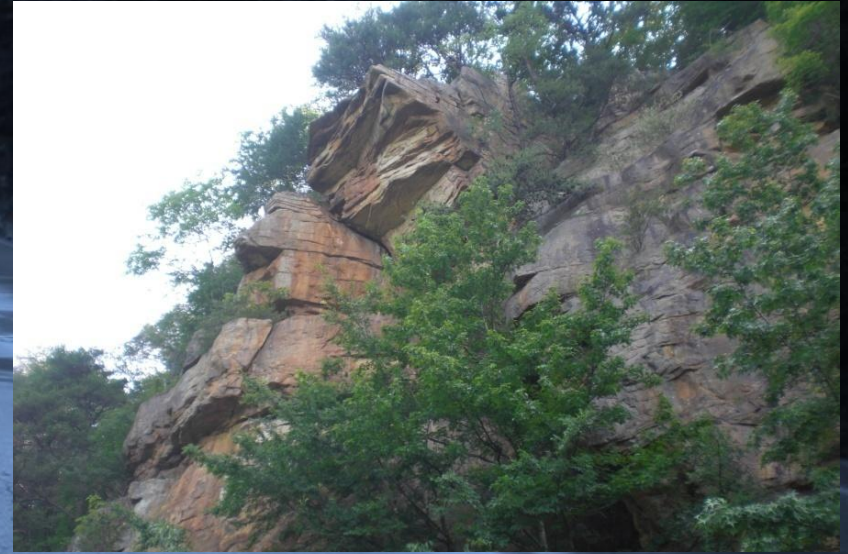


# Potential Rock Fall Area





# Typical Areas of Geologic Stability Concern





# Options for Abating Rock Falls

- Remove vegetation
- Remove loose rock and debris
- Install rock bolts and shotcrete
- Install rock fall barriers and catch fences
- Modify rock slopes

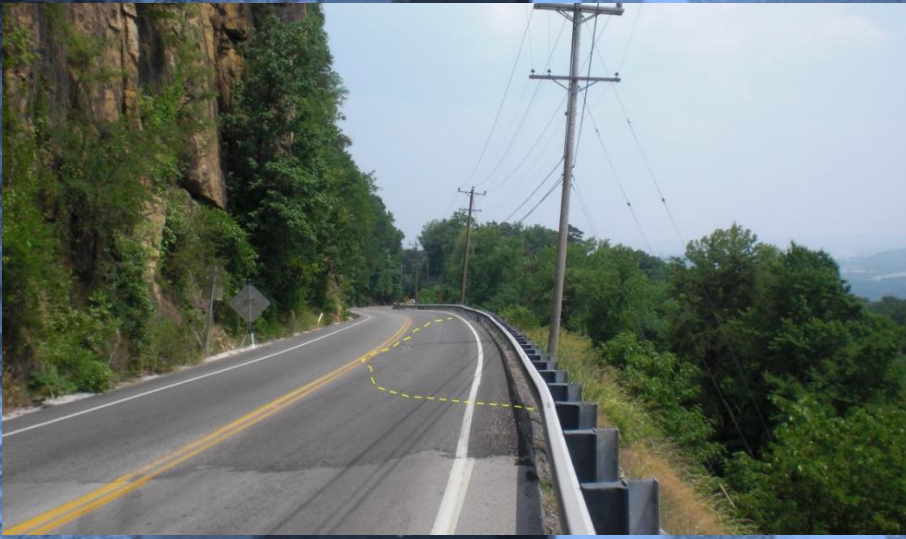


# Roadway Stability Concern Areas





# Typical Areas of Roadway Stability Concern





# 2009 Rock Slide





# Options for Roadway Stabilization

- Improve drainage
- Drill and install soil nails and rock anchors
- Drill and install drains in slope
- Replace and add retaining walls



# Typical Drainage Concerns











INSPECT AND CLEAN EXISTING 18" CMP

IMPROVE EXISTING DITCH WITH PROPOSED 4' x 2' CONC. DITCH LM 15.30 TO LM 15.66

INSPECT AND CLEAN EXISTING 18" CMP

INSPECT AND CLEAN EXISTING 18" CMP

INSPECT AND CLEAN EXISTING 18" x 11" EL CMP

INSPECT AND CLEAN EXISTING GRATE INLET

INSPECT AND CLEAN EXISTING 18" CMP

INSPECT AND CLEAN EXISTING GRATE INLET

IMPROVE EXISTING DITCH WITH PROPOSED 4' x 2' CONC. DITCH LM 14.12 TO LM 15.10

INSPECT AND CLEAN EXISTING 24" CMP

INSPECT AND CLEAN EXISTING 24" CMP

INSPECT AND CLEAN EXISTING 18" CMP











# Drainage Improvements

- System Maintenance Plan
  - Periodic Inspection
  - Inspection following significant rainfall events
- Install additional culverts
- Replace undersized culverts
- Upgrade/improve ditches



# Positive Impacts of Spot Improvements

- ✓ Improves safety
- ✓ Improves stability and reliability
- ✓ Cost



# Estimated Cost of Spot Improvements

## Rock Fall Mitigation Options

- **Vegetation removal and scaling - \$325,000**
- Vegetation removal, scaling, shotcrete and rock bolting - \$700,000
- Vegetation removal, scaling and nail and net - \$900,000
- Cut 1:1 Slopes - \$10,000,000

## Roadway Stabilization Options

- **Rebuild roadway stability concern areas - \$890,000**
- **Drill and install soil nails, anchors and drains - \$1,600,000**
- Retaining walls - \$3,400,000

## Drainage Improvements

- **Culvert replacement/installation – \$950,000**
- **Upgrade and/or improve ditches – \$6,500,000**



# Spot Improvement Scenario

## Total Estimated Cost

- \$10.2 million
- Cost/mile \$3.4 million



# Negative Impacts of Spot Improvements

- Road closures during construction
- Continued need for maintenance
- Considerable visual impacts



# Environmental Scan

- Possible Threatened & Endangered Species
  - Indiana or Gray bat
  - White Fringeless Orchid
- Shoal Creek is on the TDEC 303(d) list of impaired waters and on the TDEC Known Exceptional Tennessee Waters List
- Hazardous Materials
  - Pyritic Rock
- No Historic Property impacts anticipated
- No Wetland or Floodplain impacts anticipated
- No Superfund Sites are anticipated



**Questions??**