Region 2 SmartWay
Rural Expansion
Interstate 24

Presented By:
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Location

- **Begin**
  - ~MM 109

- **End**
  - ~MM 157
Location

- Two ‘Zones’
  - Manchester
  - Monteagle
Systems Engineering Analysis

- Statewide ITS Architecture
- TDOT *Traffic Design Manual*
  - Chapter 8
- Primary Stakeholders
  - TDOT
  - THP
- High-Risk
Manchester

- 10,102 population (2010)
- 11.0 square miles
Manchester

- 10,102 population (2010)
- 11.0 square miles

- 90,000 population (2013)
- 1.25 square miles
Proposed Devices
Monteagle Mountain

- Town of Monteagle
- Sewanee: The University of the South
- Johnny Cash
  - “Monteagle Mountain”
  - Recorded 1989
Weather Events

- Fog
- Ice
Proposed Devices
Infrared Cameras

- Simultaneous video outputs
  - Visible-light
  - Thermal
- Static (non-PTZ) Camera
  - Same Pole
  - Lower Height
Westbound Sharp Curve

Runaway Truck Ramp #1

Runaway Truck Ramp #2

Truck Inspection Station
Westbound Sharp Curve
Westbound Sharp Curve
Westbound Sharp Curve
Speed Feedback Sign

- Interstate 40 Eastbound
- Black Mountain, North Carolina

Existing Warning Sign:

“TRUCK SPEED TOO FAST WHEN FLASHING”
Speed Feedback Sign

- Two signs indicating curves with a speed limit of 45 MPH.
- Arrows indicating lanes: LANE 2 and LANE 1.
- I-24 WB TRAVEL LANE.

The diagram shows a section of the highway with speed feedback signs.
Westbound Sharp Curve

Truck Inspection Station

Runaway Truck Ramp #1

Runaway Truck Ramp #2
Truck Inspection Station
Queue Spillback
Traffic Signal Upgrade

- New Signal Heads
- 1 Base Mounted Cabinet
- Radar Detection
Queue Detection
Runaway Truck Ramp #1
Runaway Truck Ramp #1
Runaway Truck Ramp #1

Length ~ 1,100 feet
Runaway Truck Ramp #2
Runaway Truck Ramp #2
Westbound Sharp Curve

Truck Inspection Station

Runaway Truck Ramp #1

Runaway Truck Ramp #2
Westbound Sharp Curve

Truck Inspection Station

Runaway Truck Ramp #1

Runaway Truck Ramp #2

1” PVC Conduit Pullbox Spacing ~ 250 feet
Existing System
Existing System
Existing System
Existing System
Occupancy Detection
Existing Signs
Multi-Color DMS
Utility Providers

- Duck River Electric Membership Corporation
- **Sequachee Valley Electric Cooperative**
- AT&T
- **Ben Lomand Connect**
Communications & Electrical

- Westbound Rest Area
  - ~ 6,500 Linear Feet
- Truck Inspection Station
  - ~ 15,000 Linear Feet
- Mountain = Rock = $
Westbound Sharp Curve

Truck Inspection Station

Utilize Majority of Existing Trench

Runaway Truck Ramp #1

Runaway Truck Ramp #2
Communications

- Ben Lomand Connect
  - Dual T-1 Circuit
- TDOT Fiber
  - 48 SMFO Trunk
  - 12 SMFO Branch
Electrical

- Sequachee Valley EC
  - 7.2 KV (Existing)
  - 14.4 KV (Future Upgrade)
- 25 KV 1/C #1/0 AWG.
  - Aluminum
  - 15 KVA Dual Voltage Transformers
  - Electrical Manholes
Dynamic Message Signs

- 7 Total
  - 5 Standard, Overhead
  - 2 Multi-Color, Roadside
CCTV Cameras

- 16 Total
  - 8 Standard
  - 4 Infrared
  - 4 Static (non-PTZ)
Radar Detection Systems

- 6 Total
  - 2 Speed
    - Westbound Sharp Curve
    - Truck Inspection Station
  - 2 Occupancy
    - Runaway Truck Ramps
  - 2 Presence
    - Traffic Signals @ Truck Inspection Station
Unique Systems

- 1 Traffic Signal Upgrade
- 1 Speed Feedback
- 1 Queue Detection
- 2 Runaway Truck Ramp Occupancy Detection
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