Pike County US 460 ARC Corridor Q
ADHS Program

- Established in 1965
- 3090 miles
- 87 percent complete
- Kentucky has 8 corridors (93 % complete)
- Kentucky share $39 million in 2009
- State match $10 million in 2009
Kentucky has eight (8) ADHS Corridors totaling 575 total miles.
1978 - US 460 Design Plans

- Design Parameters
  - 60 MPH
  - 6% maximum grade
  - 4 lanes with 40’ depressed median
  - Avoid blueline streams
  - Access to State Routes (10% max ramp grade)
  - At-grade intersections only at limited locations
  - Contractor to identify and acquire waste areas
Environmental

- Public Hearing Held in October of 1998

- FONSI approved in January of 1999
  - Over 200 residential relocations
  - Blueline stream impacts
  - Cemetery archeology
Cemeteries
1998 - Final Design Begins

- 13 Grade and Drain Sections
- 2 Russell Fork Bridge Sections
- 4 Surfacing Sections
- $550 Million Total Construction Cost
KRS 176.525 (1998)

- Minimum 4 acres
- For city, county, or other governmental agencies
- Compacted to roadway standards
- Five US 460 sites identified
  - Left Fork of Wolfpit Branch – 44 acres
  - Jessie Branch – 4 acres
  - John Moore Branch – 74 acres
  - Stonecoal Fork – 32 acres
  - Wolfpen Branch – 17 acres
Defined Excess Material Development Sites
Left Fork of Wolfpit

109 acres acquired (44 developable)
Left Fork of Wolfpit
Left Fork of Wolfpit
Left Fork of Wolfpit
Stonecoal Fork

126 acres acquired (32 developable)
Stonecoal Fork

2010
Excess Material Site Development Challenges

- Economic Justification
- Access Issues with Property Remainders
- Contractor Access
- Corps of Engineers Permit Approval
Permitted Excess Material Sites

- Areas Needed to Balance Sections
- Over-permitted
- Not Acquired in Right of Way
Permitted Excess Material Sites

Not Acquired in Right of Way
Permitted Excess Material Sites

Acquired as Uneconomic Remnant
Who to Buy?
Who to Buy?
Who to Buy?
Who to Buy?
Who to Buy?

And How to Buy?
Mining

Section 2 Excavation Bid
$1.68 / CY
If we knew then...
Section Splits
Section Splits
Section Splits

470 foot deep cut
10 million CY
... we’re not in Kansas any more
Kansas Dog

Kentucky Dog
Kentucky can count to 7
Bridge Challenges
#1 - Bridge over Troubled Waters

Coal Piles
Bridge over Coal Facility
#2 - BIG Trucks
Special Design

- 355,000 lb. Trucks
- 10,000,000 CY

- Finite Element
- Yield Line
- Fatigue
- Impact
Challenges

Bridge
• Construction Access
• Erection

Fill & Stream Tunnel
• Access for residents
• Tunnel cost

Fill & Stream Culvert
• Access for residents
• Culvert cost
#4 - Beam Delivery Route

Existing Roads
- Drive if Questionable

Along other New Construction
- Difficult to predict
  Phasing
#5 - Mine Subsidence

The illustration depicts the typical surface effects of mine subsidence. It is important to note that mine subsidence can occur as a result of mining at any depth. As a general rule, the total surface area affected by subsidence increases as the depth of mining increases. This means a structure can be damaged by subsidence even if it is located directly above a pillar or solid block of coal.
Abandoned Mine Below Bridge
# 6 – Sidehill Cuts

**Issues**

- Planning for Geotech Borings
- Parallel Substructures
  - Great Elevation Differences
  - Design vs. Contractors
Previously

• Provided CL stations
• Substructure Skew Angle
Currently

• Provide CL stations & Approx. Footing Size
• Better for Geotech to plan borings
#7 – Steep Grade & Deep Fill

7% Grade
- Constructability
- Winter icing

Built on ~ 150’ Fill
- Initial Settlement
- Differential Settlement

Chosen Solution
- Short, Single Span
- MSE walls
#8 – Piers in Existing Fill
Concerns
  • Drive piles?
  • Drilled shafts?

Chosen Solution
  • Micropiles
Current Project Status

- Design 98% Complete
- Right of Way and Utilities 98% Complete
- 8 of 16 Construction Contracts Let
- 1 of 4 Surfacing Contracts Let
- Tying to VDOT Design-Build Project