Central Susquehanna Valley Transportation Project

Project History

1960’s – Preliminary studies/design of CSVT
1978 – CSVT Studies Stopped
1994 – Studies restarted
2003 – Obtained environmental clearance
2006 – Northern Section final design initiated
2008 – Project placed on hold – funding issue
2013 – Act 89 passed (funding identified) and project reactivated
2015 – Southern Section final design initiated
2015 – Construction of the Northern Section started
Central Susquehanna Valley Transportation Project

Project Purpose

• Separate Trucks and Through Traffic from Local Traffic
• Reduce Congestion and Accommodate Growth
• Improve Safety
Central Susquehanna Valley Transportation Project

Project Overview

Southern Section

Northern Section
Central Susquehanna Valley Transportation Project

Project Facts

• 13 miles of new 4-lane, limited access highway
  – 9 million CY of earthwork
  – 21 highway structures
  – 4 interchanges

• $670 million total estimated cost

• 7 construction contracts

• Completion and opening to traffic anticipated in 2024
Central Susquehanna Valley Transportation Project

$670 Million

$670 Million
Northern Section
Contracts

1. River Bridge
   1. $156 M – Trumbull Corp.
   2. Time: 2015 – 2020

2. Earthwork & Structures – north of river
   1. $61 M – Trumbull Corp.
   2. Time: 2016 – 2019

3. Earthwork & Structures – south of river
   1. $37 M – New Enterprise Stone & Lime Co., Inc.
   2. Time: 2017 - 2019

4. Paving
   1. Bid Fall 2018

5. Total estimated construction cost = $350 M
CSVT – Northern Section

Proposed River Bridge
CSVT – Northern Section

Proposed River Bridge
CSV - Northern Section

River Bridge Piers

Rendering
River Bridge
River Bridge Construction – Pier Foundations
CSVT – Northern Section

River Bridge Construction – O-Cell Testing for Drilled Caissons
CSVT – Northern Section

Support of Excavation – Land Piers
CSVT – Northern Section

Support of Excavation
Mass Concrete: 1,000 cy Concrete Footer
Mass Concrete: 1,000 cy Concrete Footer
Mass Concrete Cooling Tubes
River Bridge Construction
CSVT – Northern Section

River Bridge Construction
CSVT – Northern Section

River Bridge Construction – Pier Stems/Caps

Pier 4 – Stem & Temporary Towers

Pier 4 – Cap Steel Reinforcement
CSVT – Northern Section

River Bridge Construction
River Bridge Construction
CSVT – Northern Section

Mechanical Couplers
CSVT – Northern Section

Mechanical Couplers
Mechanical Couplers - Importance
Mechanical Couplers - Strength
CSVT – Northern Section

River Bridge Construction
CSVT – Northern Section

Frozen River Bridge Construction
CSVT – Northern Section

River Bridge Construction
River Bridge Construction
River Bridge Construction
Causeway Transition
140’ Fill, 12 Month Quarantine, Abutment 1
Earthwork
CSVT - Northern Section

Drilling
Loading
CSVT – Northern Section

Blasting (Press Play)
Excavation
Excavation
CSVT – Northern Section

Excavation
Sediment Basin
Filter sock
Potential Acid Bearing Rock
Pyritic Rock
Geosynthetic Clay Liners
CSVT – Northern Section

Pipes
CSVT – Northern Section

700’ Long Box Culvert
Box Culvert, 700’ long under 80’ fill
Micro-piles, Support of Excavation
CSVT – Northern Section

MSE Wall Piles
CSVT – Northern Section

Abutment: Pre-Load and Quarantine
CSVT – Northern Section

- Temporary Bridge Over Existing SR 15
CSVT – Northern Section

- Temporary Bridge Over Existing SR 15
CSVT – Northern Section

• Interchange
• Big Brother Watching?
CSVT – Northern Section

- Paving contract
  - 2” SMA
  - 3” Binder
  - 9” PCC
  - 4” Cement or Asphalt Treated Permeable Base
  - 4” 2A Subbase
  - Soil Stabilization (cement) as needed
Southern Section
Southern Section Construction

- Earthwork/Structures
- Paving
- PA Route 61 Connector
- Construction anticipated to be started in 2021 and completed by 2026
- Total estimated construction cost (including inflation) = $220 million
Central Susquehanna Valley Transportation Project

Southern Section Key Features and Design Challenges

- Approx. 4 Million CY of Earthwork
- 12 Highway Structures
- Approx. 110 Right-of-Way Claims
- Threatened and Endangered Species
  - Northern Long-Eared Bat
- Pyritic Material (Acid-Bearing Rock)
- Ash Basins
- Penn Valley Airport
- Aqua PA Water Supply Wells
CSVT – Southern Section

Engineering Challenges

Note: Original Alignment Shown

Acid Rock

Ash Basins
CSVT – Southern Section

- CSVT was originally proposed on basins to re-use undeveloped lands.
- Saturated ash cannot support weight of highway
- Risk of groundwater contamination
- Change in regulatory requirements
- Perpetual public liability for basins and their high-hazard dams
CSVT – Southern Section

Ash Basin Avoidance Alternatives
## CSVT – Southern Section

<table>
<thead>
<tr>
<th></th>
<th>Western Alternative</th>
<th>Central Alternative</th>
<th>Eastern Alternative</th>
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<tbody>
<tr>
<td><strong>Earthwork</strong></td>
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</tr>
<tr>
<td>Cut</td>
<td>2.21M CY</td>
<td>1.91M CY</td>
<td>1.88M CY</td>
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<td>Fill</td>
<td>2.55M CY</td>
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<td><strong>Roadway Length</strong></td>
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<tr>
<td>Mainline¹</td>
<td>21,509 LF</td>
<td>19,553 LF</td>
<td>19,798 LF</td>
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<td>Ramps and Side Roads</td>
<td>16,845 LF</td>
<td>15,152 LF</td>
<td>16,669 LF</td>
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<td><strong>Bridge Area</strong></td>
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<tr>
<td></td>
<td>91K SF</td>
<td>191K SF</td>
<td>145K SF</td>
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<td><strong>Ash Basin Focus Area</strong></td>
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<tr>
<td>Construction Cost</td>
<td>$110M</td>
<td>$127M</td>
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<td><strong>Utility Relocation</strong></td>
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<td>UGI Gas Line</td>
<td>350 LF</td>
<td>350 LF</td>
<td>3,500 LF</td>
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<td>PPL Electric Transmission Line</td>
<td>4,990 LF</td>
<td>10,800 LF</td>
<td>3,230 LF</td>
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<td><strong>Ash Basin Focus Area Total Cost²</strong></td>
<td>$118M</td>
<td>$139M</td>
<td>$131M</td>
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<td><strong>PA 61 Connector Usage vs. Original Design</strong></td>
<td>30% less traffic removed from existing road network</td>
<td>10% more traffic removed from existing road network</td>
<td>30% more traffic removed from existing road network</td>
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### Geotechnical Considerations
- Potential for acid rock
- Steepened slope below Northern Ash Basin dam
- Blasting restrictions needed near ash dams
- Steepened slope below Northern Ash Basin dam
- Blasting restrictions needed near ash dams
- Steepened slope below Northern Ash Basin dam
- Realigned spillway channel below Northern Ash Basin dam
- Blasting restrictions needed near ash dams
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<thead>
<tr>
<th>Category</th>
<th>Western Alternative</th>
<th>Central Alternative</th>
<th>Eastern Alternative</th>
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<tr>
<td><strong>Farmlands</strong></td>
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<td>Total Area / Required Right-of-Way (Acres)</td>
<td>166</td>
<td>164</td>
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<td>Agricultural Security Areas (Acres)</td>
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<td>Hummel Bros.</td>
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<td>Stump Valley</td>
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<td>6</td>
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<td>J. Goedek</td>
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<td>9</td>
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<td>Total</td>
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<td><strong>Natural Resources</strong></td>
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<td>Streams (Feet)</td>
<td>4,081</td>
<td>4,014</td>
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<td>Wetlands (Acres)</td>
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<td>Old Field Habitat (Acres)</td>
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<td>Forest Land Habitat (Acres)</td>
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<td>Threatened &amp; Endangered Species Suitable Habitat</td>
<td>Northern Long-Faced Bat</td>
<td>Northern Long-Faced Bat</td>
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<td><strong>Cultural Resources</strong></td>
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<td>High Prehistoric Archaeological Resource Potential (Acres)</td>
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<td>Waste Sites</td>
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<td><strong>Recreational Areas/Section 4(f) Resources</strong></td>
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<td>Noise Impacted Residents</td>
<td>107</td>
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<td><strong>Residential Displacements</strong></td>
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<td>Needed — Not Yet Acquired</td>
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<td>Needed — Already Acquired</td>
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<td>Not Needed — Already Acquired</td>
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<td>Total</td>
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<td>Weatherfield Development (Acres)</td>
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<td>Broscover Property (Acres)</td>
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<td><strong>Public Opinion</strong></td>
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<td>(volume of comments received)</td>
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<td>Negative</td>
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</table>
Central Susquehanna Valley Transportation Project

Next Steps

- Environmental clearance
- Final design
- Construction
Central Susquehanna Valley Transportation Project

- Some people are happy with CSVT...
Central Susquehanna Valley Transportation Project

• Some people are NOT happy with CSVT!
Questions?

www.csvt.com