SR 15 SECTION 088
CSVTSOUTHERN SECTION

PUBLIC MEETING
FEBRUARY 15, 2017
AGENDA

- WELCOME
- MEETING PURPOSE
- CSVT NORTHERN SECTION UPDATE
- CSVT SOUTHERN SECTION OVERVIEW & STATUS
- MINOR DESIGN CHANGES
- ENGINEERING CHALLENGES
- NEXT STEPS
- QUESTIONS AND ANSWERS
- OPEN HOUSE
MEETING PURPOSE

- Provide updates
  - Minor design changes
  - Unexpected engineering challenges
    1. Acid bearing rock: special attention needed – straightforward to address
    2. Fly ash waste basins: more complex – requires larger changes

- Solicit input to consider as alternatives are developed to overcome engineering challenges
NORTHERN SECTION STATUS

- **1st Contract – River Bridge**
  - Awarded October 2015 – Trumbull Corporation – $156 million
  - Work began January 2016 – 30% complete

- **2nd Contract – Earthwork/Structures – north of river**
  - Awarded October 2016 – Trumbull Corporation – $61 million
  - Work began November 2016

  - Anticipated bid opening – March 2017

- **4th Contract – Paving**
  - Anticipated bid opening – 2020

- Overall – anticipated completion – 2021
RIVER BRIDGE CONSTRUCTION

STATION #2
REVIEW OF CSVT SOUTHERN SECTION
PROJECT STATUS

- Survey and geotech fieldwork - largely completed

- Alignment study – minor design changes – mostly completed
  - Some coordination with municipalities is ongoing.

- Engineering challenges – must be resolved to advance design, right-of-way acquisition, utility relocations and permitting
MINOR DESIGN CHANGES

- Park Road & Fisher Road Crossing
- Mill Road/ App Road/ Airport Road
- Cortland Drive Connector
- US 11/15 Split
- US 522 & US 11/15 Corridor
- PA 61 & US 11/15 Interchange
MINOR DESIGN CHANGES

LEGEND

- EXISTING ROADWAY
- REMOVAL
- PROPOSED ROADWAY
- BRIDGE WORK
- PROPOSED STRUCTURE
- PROPOSED SIGNAL
- EXISTING SIGNAL

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EXISTING ROADWAY
REMOVAL
PROPOSED ROADWAY
BRIDGE WORK
PROPOSED STRUCTURE
PROPOSED SIGNAL
EXISTING SIGNAL
MINOR DESIGN CHANGES
US 522 & US 11/15 Corridor – Proposed Improvements

EXISTING

PROPOSED

Jughandle to remain

Proposed Jughandle

STATION #3
MINOR DESIGN CHANGES

US 522 & US 11/15 Corridor – Proposed Improvements

- Jughandle to remain
- Ramp B Alignment Adjusted
- Ramp C Alignment Adjusted
- Ramp G Alignment Adjusted

STATION #3
MINOR DESIGN CHANGES

US 522 & US 11/15 Corridor – Proposed Improvements

- Adding 3rd northbound through lane from interchange to Walmart
- Already has 3 lanes northbound
MINOR DESIGN CHANGES

Mill Road/ App Road/ Airport Road
MINOR DESIGN CHANGES

Mill Road/App Road/ Airport Road – Proposed Improvements

Roundabouts
MINOR DESIGN CHANGES

Park Road & Fisher Road Crossing
MINOR DESIGN CHANGES

Park Road & Fisher Road Crossing – Proposed Improvements

- Relocated
- Channel 23 Culvert
- Bridges Eliminated
- Cul-de-Sac

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MINOR DESIGN CHANGES

PA 61 & US 11/15 Interchange
MINOR DESIGN CHANGES

PA 61 & US 11/15 Interchange – Proposed Improvements

- Eliminated Dual Left Turns
- Added Loop Ramp P

PRELIMINARY
FEBRUARY 2017

S.R. 15, Section 088
Central Susquehanna Valley Transportation Project
Southern Section
Snyder County
MINOR DESIGN CHANGES
MINOR DESIGN CHANGES

US 11/15 Split – Proposed Design

Maintain current intersection
MINOR DESIGN CHANGES

Cortland Drive Connector
MINOR DESIGN CHANGES

Cortland Drive Connector – 2 options being considered

CURRENT ALIGNMENT
(APPROVED IN FEIS)

ALTERNATE ALIGNMENT
REQUESTED BY SHAMOKIN DAM

Displacements

STATION #3
ENGINEERING CHALLENGES

- Two unexpected geotechnical conditions were encountered.

1. **Acid Bearing Rock** - Requires special attention but straightforward

2. **Properties of Fly Ash Waste Basins** – more complex
ACID ROCK

- Acid bearing rock unexpectedly found by soil boring program
  - Between Attig Road and Park Road
  - 2 million cubic yards
RESERVOIR SEDIMENTATION

750’±

250,000 Dump Trucks
(Assumes 8cy per load)
WHAT IS ACID BEARING ROCK?

- Rock containing iron sulfide such as pyrite.

- Produces acid at a quick rate when...
  - excavated into smaller pieces
  - smaller pieces exposed to air and water

- Why important?
  - If untreated, may result in issues similar to acid mine drainage
HOW DO WE ADDRESS POTENTIALLY ACIDIC ROCK?

- Awareness is key
- Coordinate with PADEP
- Minimize amount of acid bearing rock to be excavated
- Divert & treat stormwater runoff from exposed rock slopes
- Mix excavated rock with lime and encapsulate (to prevent contact with air and water)
CSVT APPROACH TO ACID ROCK

- Investigated options for reducing rock excavation
  - Identified minor roadway shifts that greatly reduce rock excavation
    - Will finalize after ash basin issue is resolved
- Met with PADEP
  - PADEP agrees with the Project Team approach
    - Acid rock challenge is easy to overcome

ACID ROCK FOCUS AREA

STATION #4
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CSVT SOUTHERN SECTION

ASH BASINS

PRELIMINARY
FEBRUARY 2017

Pennsylvania Department of Transportation

Gannett Fleming
Excellence Delivered As Promised

STATION #5
ASH BASINS

Northern Basin in use

Example of ash being pumped into a basin
**SOUTHERN ASH BASIN**

- Built in 1955
- Raised crest in 1964, and between 1984-1986
- Closed in the late 1990s
- Dam Height – 136’
- Area – 66 Acres
NORTHERN ASH BASIN

- Built in 1970
- Raised crest 1981-1982
- Closed in the late 1980s
- Dam Height – 117’
- Area – 61 Acres
WHY CURRENT ALIGNMENTS CROSS THE ASH BASINS

- General sentiment during preliminary design - place the roadway on land not suitable for any other use.

- Expected conditions to improve – lower water level
CSVT PROFILE THROUGH SOUTHERN ASH BASIN

LENGTH OVER SOUTHERN ASH BASIN - 1,400 FT

ROADWAY SURFACE

APPROXIMATE LIMIT OF FLY ASH

SOUTHERN ASH BASIN

MAX DEPTH = 101 FT

Note: Drawing is not to scale.
Note: Drawing is not to scale.
EXPECTED CONDITIONS

- Water level > 30 feet below surface
- Increasing ash strength with depth
- Stable for highway construction
**ACTUAL CONDITIONS**

- Saturated ash within 10 feet of surface
- Consistency similar to toothpaste or a milkshake
- Very little strength
- Little gain in strength over depth
CONSIDERED SOLUTION – GROUND IMPROVEMENT

- Inject cement slurry into ash basin to make columns which support highway

Issues

- Risk of highway embankment settlement
- Risk of groundwater contamination
- Cannot verify condition of mixed columns under 100 feet of ash
- PennDOT (public) liability for ash basins and dams
- Additional $70 million
- Time delay
CONSIDERED SOLUTION – REMOVAL OF ASH FROM BASINS

- Remove all 7.5 million cubic yards of ash
- Issues
  - Risks spreading contaminants during excavation and transport
  - Cost prohibitive; well over an additional $500 million
  - Would set CSVT schedule back several years
CONSIDERED SOLUTION – REMOVAL OF ASH UNDER CSVT

- Excavate ash beneath CSVT (2 million cubic yards)
- Issues
  - Same challenges as previous approach plus....
  - Large bracing systems needed (100’ height!)
  - Need to pass water from one side of the bracing system to the other
  - Over an additional $250 million
CONSIDERED SOLUTION – BRIDGING BASIN

- Construct low bridge over ash basins
- Issues
  - Ash basin cannot withstand large cranes necessary for bridge construction.
  - Pile driving could fracture rock below risking contamination of aquifer.
  - Additional $160 million initial cost plus ground improvement
CONSIDERED SOLUTION – FLOATING BRIDGE

- “Out-of-the-box idea”
- Construct pontoons that “float” on ash
- Issues
  - Pontoons would gradually settle with no way to raise them.
  - Risk of failure during seismic event
  - Additional $450 million
REASONS FOR AVOIDING ASH BASINS

- Saturated ash cannot support weight of highway
- Risk of highway settling and deforming
- Risk of groundwater contamination during/after construction from the unlined basins
- Recent issues with other basins nationwide; increased scrutiny from environmental agencies
  - U.S. EPA - new regulations
  - PA DEP - strongly recommends CSVT avoid the ash basins
- Perpetual public liability for basins and their high-hazard dams
  - High-hazard classification - based on damage which would occur if the dams failed; not based on current condition of dams.
ASH BASIN AVOIDANCE
FOCUS AREA

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ASH BASIN REALIGNMENT
FOCUS AREA

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Central Susquehanna Valley Transportation Project
Southern Section
PROJECT TEAM GOALS

- Constructing safe highway that meets current standards and meets needs of project. (Example – PA 61 Connector to divert traffic from existing road network)

- Minimizing/balancing impacts to...
  - Area residents
  - Communities / municipalities
  - Farmlands
  - Businesses
  - Natural environment
  - Cultural resources
  - Utilities

- Making use of right-of-way already acquired
NEXT STEPS

- Public Meeting #1 - Tonight
  - Present design changes, engineering challenges and next steps
  - Request feedback
  - Open House
    - 1 on 1 discussion
    - Receive feedback on problem and considerations for potential solutions within focus area (face to face and questionnaire)
NEXT STEPS

- Public Meeting #2 – Spring 2017
  - Present alternatives developed from Public Meeting #1 feedback
  - Request feedback
NEXT STEPS

- Detailed studies – Summer 2017
  - Perform engineering and environmental studies
  - Coordinate with:
    - FHWA
    - Environmental agencies
    - Local officials
    - Utilities
    - Impacted land owners
    - Other stakeholders
NEXT STEPS

- Public Meeting #3 – Fall 2017
  - Present results of detailed studies
  - Present preferred alternative
  - Collect feedback

- Move forward with environmental clearance, design, right-of-way acquisition, utility relocations and permitting
PROJECT SCHEDULE

- Goal is that ash basin avoidance issue can be resolved by Fall 2017.

- After working through engineering challenges, proceed in most efficient manner to complete design.
PROJECT COST

- Not expected to rise significantly when roadway is moved.
HOW DO I GET INFORMATION?

➢ Attend Public Meetings

➢ Visit Project Web Site – csvt.com

➢ Contact PennDOT District 3-0
  Matthew Beck, P.E., Assistant Plans Engineer
  matbeck@pa.gov
  570-368-4256
OPEN HOUSE LAYOUT

STATION 1 - INFORMATION & DISPLAY LAYOUT
DISPLAY LAYOUT

STATION 2 - CSVT NORTHERN SECTION
CSVT NORTHERN SECTION PLAN WITH CONSTRUCTION PHOTOS

STATION 3 - MINOR DESIGN CHANGES
US ROUTE 522 AND US ROUTES 11/15 CORRIDOR
MILL/APP/AIRPORT ROADS ROUNDABOUTS
BENEFITS OF ROUNDABOUTS
PARK ROAD AND FISHER ROAD CROSSING
PA ROUTE 61 AND US ROUTES 11/15 INTERCHANGE
CORTLAND DRIVE CONNECTOR
US ROUTES 11/15 SPLIT

STATION 4 - ACID BEARING ROCK
WHAT IS ACID ROCK?
ACID ROCK TREATMENTS
ACID ROCK FOCUS AREA

STATION 5 - ASH BASINS
ASH BASIN HISTORY
ASH BASINS: EXPECTED VS. ACTUAL CONDITIONS
WHY CSVT CANNOT BE CONSTRUCTED ON ASH BASINS

STATION 6 - ASH BASIN FOCUS AREA
ASH BASIN FOCUS AREA

STATION 7 - ENVIRONMENTAL TOPICS
FARMLANDS
NOISE ABATEMENT PROCESS

STATION 8 - RIGHT-OF-WAY
CSV RIGHT-OF-WAY

STATION 9 - ANTICIPATED NEXT STEPS
ANTICIPATED NEXT STEPS

STATION 10 - QUESTIONNAIRE
OPEN DISCUSSION & GENERAL QUESTIONS
(Specific/personal questions will be better served at the open house.)
THANK YOU!!

We Really Appreciate Your Time and Input!!